Guidelines on the application of the environmental impact assessment procedure in aquaculture in the Central Asia and Caucasus region





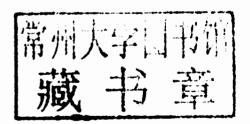
Guidelines on the application of the environmental impact assessment procedure in aquaculture in the Central Asia and Caucasus region

Richard Anthony Corner
Consultant
FAO Project GCP/KYR/003/FIN
The United Kingdom of Great Britain and Northern Ireland

Sunil N. Siriwardena FAO Project Leader Support to the Fishery and Aquaculture Management of the Kyrgyz Republic Project Bishkek, Kyrgyzstan

and

Haydar Fersoy Fisheries Management Expert FAO Subregional Office for Central Asia Ankara, Turkey



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PREPARATION OF THIS DOCUMENT

The Guidelines on the application of the environmental impact assessment procedure in aquaculture in the Central Asia and Caucasus region have been prepared by the FAO Project "Support to Fishery and Aquaculture Management in the Kyrgyz Republic (GCP/KYR/003/FIN)". This document presents the key outcomes of an activity of the project to assess the current status of, and to determine a new procedure, for environmental impact assessment for aquaculture in the region. The Report on Environmental Impact Assessment Policy and Procedure for Aquaculture in the Kyrgyz Republic, prepared by R.A. Corner (international consultant on FAO Project GCP/KYR/003/FIN), provided valuable inputs to this document.

The Guidelines are a further contribution towards the implementation of the provisions of the FAO Code of Conduct for Responsible Fisheries (the Code) and thus have no formal legal status. *Inter alia*, the Code strongly emphasizes the need for responsible fisheries and aquaculture development, equitable international trade, and the protection of the environment and aquatic biodiversity. The information presented is intended to assist with consideration of issues related to the implementation of the provisions of the Code, particularly with respect to protection of the environment and aquatic biodiversity. Any differences in the terminology employed should not be considered as a reinterpretation of the Code. The Guidelines are intended to be flexible and capable of evolving as circumstances change or as new information becomes available.

ABSTRACT

The Guidelines on the Application of the Environmental Impact Assessment Procedure in Aquaculture in the Central Asia and Caucasus Region have been developed in support of Article 9 (aquaculture development) of the FAO Code of Conduct for Responsible Fisheries. The objective of the Guidelines is to contribute towards the development of an applicable procedure to assess the environmental impacts of aquaculture developments and projects in countries in the Central Asia and Caucasus region. A summary and the Guidelines cover a number of issues and stages relevant to the implementation of such a procedure, including: legal components, defining stakeholders, pre-application procedure, screening, scoping, preparation of environmental impact statement, reviewing adequacy of the environmental impact statement, consultation, decision-making and monitoring. The legal and institutional frameworks of selected countries in the Central Asia and Caucasus region have been summarized in this document to assess the enabling legal and institutional environments to implement an effective environmental impact assessment procedure for aquaculture developments and projects. The Guidelines were prepared based on widely accepted guiding principles of environmental impact assessment procedures.

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ABBREVIATIONS AND ACRONYMS

TOR terms of reference

BMP	better management practice
CA	competent authority
COC	code of conduct
Code	Code of Conduct for Responsible Fisheries
COP	code of practice
EIA	environmental impact assessment
EIS	environmental impact statement
IEE	initial environmental examination
NGO	non-governmental organization
SEE	state ecological (or environmental) expertise

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1. Introduction

The environmental impact assessment (EIA) procedure is an internationally recognized method of investigating the likely impacts of a development on the surrounding environment before the development has taken place, and of providing structured and defined environmental management and monitoring programmes. It provides a system of: investigation in which the risks of impacts happening are assessed and evaluated. It ensures decisions can be based on sound scientific information, and appropriate mitigation and management measures applied. It also provides a basis for monitoring to ensure the proposed impacts do not exceed defined environmental standards. Importantly, it is a procedure that should allow all relevant stakeholders to make their comments on a proposal, and have their concerns and observations responded to, in the process of coming to a decision to approve or not approve a development.

Globally, the EIA procedure is generally well implemented for large infrastructure projects, such as oil installations, power generation projects, mining and road development. Less well developed globally is its application within the aquaculture sector. However, the situation is improving all the time as more countries recognize the benefits of EIAs in developing a sustainable aquaculture industry (FAO, 2009). Many countries now implement EIAs for aquaculture developments to varying degrees. The EIA procedure is most commonly applied to intensive marine finfish culture and to proposals for large-scale shrimp farm developments. Some countries with significant large-scale aquaculture industries do not apply EIAs to aquaculture development but rather rely on a range of alternative environmental management procedures (FAO, 2009).

It is important to recognize that, globally, the majority of fish-based production occurs at small-scale farmer level – often family-based extensive systems – and full EIAs are not implemented. However, such production is not unregulated and alternate standards and practices are nonetheless applied, mostly through "soft" means such as better management practice (BMPs), certification of BMP, codes of practice (COP), codes of conduct (COCs) or a combination of these (e.g. in Southeast Asia, Europe and the United States of America). These standards and practices are often managed through associated practical guidelines typically generated by a department of fisheries and aquaculture and/or environmental agencies. Such guidelines, based on sound criteria, define the minimum standards expected, and often also state which types of activity will require an EIA or more significant investigation before decisions on approval can be taken.

The recent publication *Environmental Impact Assessment and Monitoring in Aquaculture* (FAO, 2009) provides a good summary of the key requirements of EIAs in aquaculture, and it also presents various country case studies that are a good source of further information.

These regional technical guidelines on the implementation of EIA of aquaculture developments have been developed to support the following principles set out in the Article 9 of the Code of Conduct for Responsible Fisheries (the Code), which was unanimously adopted in 1995 by FAO, namely:

- Article 9.1.1: States should establish, maintain and develop an appropriate legal and administrative framework which facilitates the development of responsible aquaculture.
- Article 9.1.2: States should promote responsible development and management of aquaculture, including an advance evaluation of the effects of aquaculture development on genetic diversity and ecosystem integrity, based on the best available scientific information.
- Article 9.1.3: States should produce and regularly update aquaculture development strategies and plans, as required, to ensure that aquaculture development is ecologically sustainable and to allow the rational use of resources shared by aquaculture and other activities.
- Article 9.1.4: States should ensure that the livelihoods of local communities, and their access to fishing grounds, are not negatively affected by aquaculture developments.
- Article 9.4.2: States should promote active participation of fish farmers and their communities in the development of responsible aquaculture management practices

1.1 Statement of purpose

The purpose of the Guidelines is to provide guidance on the implementation of EIAs. An EIA is a tool that can be used to minimize negative impacts of aquaculture on aquatic environments and to take precautionary measures to ensure equitable and sustainable use of aquatic resources in developing aquaculture sustainably. The Guidelines consider a range of issues that are relevant to the implementation of EIAs to aquaculture developments, including: legal components; policy development; transparency and participation; decision-making; and social and ethical issues. They have been developed in conjunction with a review of the status of the environmental impact assessment regulations and procedures for aquaculture development in selected countries of the Central Asia and Caucasus region (Appendix 1). While the objective of these practical guidelines is to provide assistance, ensuring the orderly and sustainable development of aquaculture for those countries, they are flexible enough to be able to adapt them for implementation in any other country.

Implementation of the Guidelines may be undertaken by any entity or entities jointly that are competent or have the responsibility to do so. These may include, *inter alia*, government environmental agencies, research and development agencies, non-governmental organizations (NGOs), private-sector groups (e.g. producers, farmers and professional associations), civil society and consortia comprising some or all of these stakeholder groups.

1.2 Structure and contents of this document

The Guidelines are arranged under ten key implementation stages of an EIA procedure:

- 1. defining legal components;
- 2. defining stakeholders;
- 3. pre-application consultation;
- 4. screening;
- 5. scoping;
- 6. environmental impact statement (EIS);
- 7. reviewing delivery and adequacy of the EIS;
- 8. consultation;
- 9. decision-making;
- 10. monitoring.

Prior to presentation of the Guidelines, there is a review of legal and institutional frameworks and current procedures relevant to EIAs or similar approaches in selected countries of the Central Asia and Caucasus region, and an introduction to each stage is given in order to summarize the procedure. Guiding templates required for the EIA procedure are given as appendixes.

2. GUIDELINES FOR A PRACTICAL ENVIRONMENTAL IMPACT ASSESSMENT PROCEDURE

2.1 Guiding principles of the EIA procedure

The basic or guiding principles for effective and efficient implementation of an EIA procedure are given below. These guiding principles are largely based on those identified by the International Study of the Effectiveness of Environmental Assessment launched by the Canadian Environmental Assessment Agency and the International Association of Impact Assessment (Sadler, 1996). These guiding principles are applicable not only to implement an EIA procedure in aquaculture but to all types of other development. When applying or referring to them, it is important to consider the principles as a single package, recognizing their varying interrelationships. By keeping the following principles in mind, rather than focusing narrowly on specific procedures, the application of existing EIAs will be more flexible and cost-effective. These principles should also form a sound basis for the development of new or modified procedures applicable to particular sectors or development contexts (Hambrey *et al.*, 1999).

Adaptability: The EIA should be adjusted to the realities, issues and circumstances of the aquaculture development proposals under review.

Accountability: Decision-makers are responsible to all parties for their actions and decisions under the assessment procedure.

Certainty: The procedure and timing of an assessment should be agreed in advance and followed by all participants.

Credibility: Assessment is undertaken with professionalism, fairness, impartiality and objectivity.

Efficiency and cost-effectiveness: The assessment procedure and its outcomes should ensure environmental protection at the least cost to the proponent.

Flexibility: The assessment procedure should be able to adapt to deal efficiently with any proposal and decision-making situation.

Practicality: The information and outputs provided by the assessment procedure should lead to the identification of measures for impact mitigation that are practical and can be implemented by the developer.

Transparency: All assessment stages should be clear, easily understood and open procedures, and decisions and the basis for them should be open and accessible.

Participation: The EIA should provide appropriate and timely access to the procedure and opportunities to inform and involve all interested parties.

2.2 Introduction to the Guidelines

The aim of the guidelines is to provide some practical advice and help on the EIA procedure for all stakeholders involved in the design and development of aquaculture facilities. They are designed for use by all stakeholders in the EIA procedure regardless of holding any specific designation (that is to say, the general public are included), but they are designed in particular for state agencies, the aquaculture farmers¹ and EIA practitioners and consultants. They may also be of use to educators and academics, and to students undergoing aquaculture EIA training.

The outputs were refined based on comments and recommendations made by attendees at a stakeholder workshop held in Chok-Tal, Issyk-Kul (Kyrgyzstan) on 29–30 September 2011. They take account of international understanding of the implementation of EIAs for aquaculture, including international

¹ Throughout this document, the term "aquaculture farmer" refers to all developers, be they single farmers, collectives or associations of farmers, and any investors and developers of aquaculture practices and enterprises that are developing or intend to develop aquaculture facilities.

guidelines and local conditions. The Guidelines are applicable to all aquaculture developments, unless otherwise determined by a competent authority (CA).

It is important to define what these Guidelines do not cover. They are not a complete manual on how to implement an EIA, as they do not contain details about specific requirements on how to undertake an assessment, nor what specific impacts/receptors will require investigation, or how to conduct such investigations. These activities will be based on local requirements and provision of advice from the national state agencies, and they will change depending on the detail of each aquaculture development activity.

2.3 Defining the EIA procedure

In this section, the EIA procedure is defined and broad descriptions of steps in the procedure are discussed. Specific guidelines then follow (Section 2.4) under each of the steps. Certain information in the initial definition and description may re-appear in the more detailed sections.

2.3.1 Environmental impact assessment

An EIA is a procedure that evaluates all possible relevant environmental and other impacts that a development may have throughout its life cycle. It is conducted before major investment in the project has taken place. An important word here is "relevant". An EIA does not necessarily involve assessing all possible, even minor, impacts. It does infer that impacts that are or are potentially "significant" should be assessed. While there may be a question about what the word "significant" means (what is significant to one, may be insignificant to another), it has been shown that certain types of fish farming have particular impacts, which are variable depending on local conditions and requirements.

There are other definitions of an EIA other than as presented above. However, the essential requirement is that, as part of good management practice, an effective procedure be implemented to assess and evaluate development projects before they have started.

2.3.2 Aim

The aim of the EIA procedure is, where possible, to prevent, offset, take precautionary approaches to and reduce any negative impacts from the aquaculture development. The Guidelines should be considered in this light, rather than being seen as a rigid set of "instructions". The EIA procedure is and should be flexible and, to some extent, be an iterative approach to identifying, predicting, evaluating and otherwise mitigating the potential risks associated with an aquaculture development.

2.3.3 When is an EIA needed?

An EIA involves a number of steps. These may be implemented in full for complex developments or in fewer steps as necessary. Where the risks of impact are high or where an impact may be catastrophic even if the risk is low, for example, a full EIA may be required. The steps may be implemented only partially or not at all for less complex or less impacting aquaculture developments. The steps in an EIA are defined in Figure 1. Whether or not an aquaculture development requires any detailed form of EIA can be determined during the early stages of the defined procedure.

Certain types of production are liable to have limited impacts, have a low risk of occurring or be insignificant if they do occur. Such projects require less intensive evaluation. In this situation, the applicant needs only to provide basic information about the development, and then approval can be given at an early stage. The procedure need not be more complicated or bureaucratic than is currently implemented.

Examples here might include low-production extensive systems, single-pond systems, or pond systems where water flows directly into irrigations channels without passing through rivers, lakes and other waterbodies. However, caution needs to be maintained. Even here, there may be situations that require more detailed information to be provided because the impacts become proportionately higher. These might include:

- higher-level production / higher stocking density;
- where feed or fertilizer is added to increase pond productivity (semi-intensive);
- larger single farms covering several hectares, or multiple ponds on a single site;
- multiple farms in a single local area, which together might have a proportionately larger impact.
- where outflow water goes into streams and rivers then into lakes, or directly into lakes that maintain specific biodiversity that might be affected by excess nutrient load.

The production of low-value (in marketing term) herbivore and omnivore species such as carps is changing rapidly. Production is moving from extensive to semi-intensive systems using farm-made aquafeeds and may change to intensive systems using more commercial feeds. Thus, certain types of aquaculture developments will need some additional information to evaluate the significance of one or a few impacts. Such projects are intermediate between having no assessment and a full EIA. If additional information, explanation or remedy can be provided easily during the early phases of the EIA procedure, this may be sufficient to grant approval without the need for very detailed study.

Aquaculture systems under the Guidelines include semi-intensive and intensive cage culture sites; and extensive, semi-intensive and intensive pond, raceway and tank systems. They are for any system used for the cultivation of fish, whether for the production of juvenile fish (hatcheries), fish on-growing to marketable size to be sold to consumers (whether or not processed) or fish for the purpose of re-stocking. Where ponds are used only for recreational fishing and no feed is used, these need not be included. If ponds are used for production of saleable fish and/or re-stocking but also involve recreational fishing, then these are included.

For the purposes of the Guidelines the species being cultured and the scale of production are ignored. Decisions on whether certain types of production or on growing certain species or on whether farms under a certain size fall outside the Guidelines are decisions for the national CAs.

Where initial discussion and assessment identifies that the risks of an impact occurring are higher, or where an impact may be catastrophic even if the risk of it occurring is low, and insufficient mitigation can be proposed without more detailed investigation, then this will probably require more detailed assessment through an EIA. Examples in this case would include more complex developments and more intensive production systems, including cage culture and commercial trout pond culture. If the initial evaluation identifies that more detailed information or further investigation is needed to define or otherwise highlight the risks and significance of potential impacts, then the full EIA procedure can be implemented.

One of the key outcomes of the full EIA procedure is to provide sufficient information so that the CA is able to make a more fully informed decision about approval or non-approval of a project.

FIGURE 1

Steps in the environmental impact assessment procedure

Source: Adapted from EC (2001).

Project preparation	The developer prepares information about the development
Pre-application consultation	The developer informally seeks the views from main stakeholders, prior to making a formal application. Stage is optional. Can often determine whether sufficient information is being passed to the competent authority (CA), to provide a good screening opinion
Screening	The CA determines whether an Environmental Impact Assessment (EIA) is required. This may happen when the CA receives notification of the intention to make a development consent application, or the developer may make an application for a screening opinion. The CA should seek screening opinions from other stakeholders to ensure all impacts are considered and information requested
Scoping	Developers may request a scoping opinion from the CA or the CA may offer its scoping opinion after screening. The scoping opinion will identify the matters and information to be included in the Environmental Impact Statement (EIS)
Environmental Studies	The developer carries out an investigation, studies and assessment of information and prepares an EIS. Takes account of the scoping opinion and any more general advice issued by the CA on the requirements of the EIS
Submission of information to the competent authority	The developer submits the EIS to the CA together with any formal application documents required for development consent.
Review of adequacy of the information presented	There may be a need to review the adequacy of the EIS submission from the developer. This may be done by the CA or a nominated person/organization. This is NOT an assessment of the merits of the information, only that it is in sufficient details to cover adequately the screening opinion and other guidance.
Consultation with statutory consultees, other stakeholders and the public	The EIS must be made available as a minimum to those that offered a screening opinion, but should also be available more generally. Sufficient time should be allotted to allow comment on the development proposal and supplied information prior to the decision on the consent request.
Consideration of the submission and comments from consultees	The EIS and results from consultations must be considered by the CA in determining whether to approve or not approve the development.
Announcement of the decision	The decision must be made available to the developer and consultees and more generally. The decision should include the reasons for the decision, an in relation to the licence granted, the application of conditions attached to the licence that the developer must follow to comply with the licence issued. There should be the right of appeal.
Follow-up monitoring of the development, if granted permission	There may be a requirement to monitor the activities after approval. This is to ensure compliance with the licence conditions and the other applicable regulations, and to monitor the impacts against those predicted in the EIS.

2.3.4 Strategic aquaculture plans and EIA

An EIA is a mechanism by which the impacts of aquaculture developments can be considered. In addition to implementing the Guidelines, countries in the Central Asia and Caucasus region are encouraged to develop strategic aquaculture plans as the central means of communicating their intentions concerning the development of aquaculture nationally.

Strategic plans are an important part of the EIA procedure, providing a clear context for development of the industry, having evaluated not only the regulatory framework but also the: institutional capacity; existing and new market potential both internally and internationally; needs in terms of research, training, infrastructure and financial/business opportunities; opportunities in terms of food security and quality assurance; compliance with international COCs, such as that issued by the FAO for sustainable fisheries (including aquaculture); and the interrelationship between fisheries and aquaculture. More broadly, they provide an overall framework for the development of the aquaculture industry.

Most importantly in the context of EIA, they allow stakeholders to understand more fully the governmental view of aquaculture and its development, and they can incorporate EIA requirements. Such strategic plans enable aquaculture farmers to submit only those development proposals that comply with the overall strategic objectives. A strategic plan will also provide force in regulation for the implementation of the EIA procedure for aquaculture, making it more likely that such a procedure is followed and adhered to by all parties.

2.4 Summarizing the EIA procedure

2.4.1 Legal components

There are many codes, laws, decrees and regulations that potentially affect the development of aquaculture in countries of the Central Asia and Caucasus region (refer to Appendix 1 for further details). It will be important to consider these in the context of any development activity. The review in Appendix 1 is not exhaustive, but covers a broad assessment from six countries in the Central Asia and Caucasus region, namely: Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan.

There are several laws and other important legislative acts that contain provisions related to environmental legislation in each country [Table 1 (which is an abridged version of Table A1.3 in Appendix 1)]. Where a development takes place, there is a need for a review to be undertaken by state ecological (or environmental) expertise (SEE). However, often, the procedural scheme of SEE does not appear to meet all the EIA requirements in line with international practices, and implementation of SEE is variable across the region.