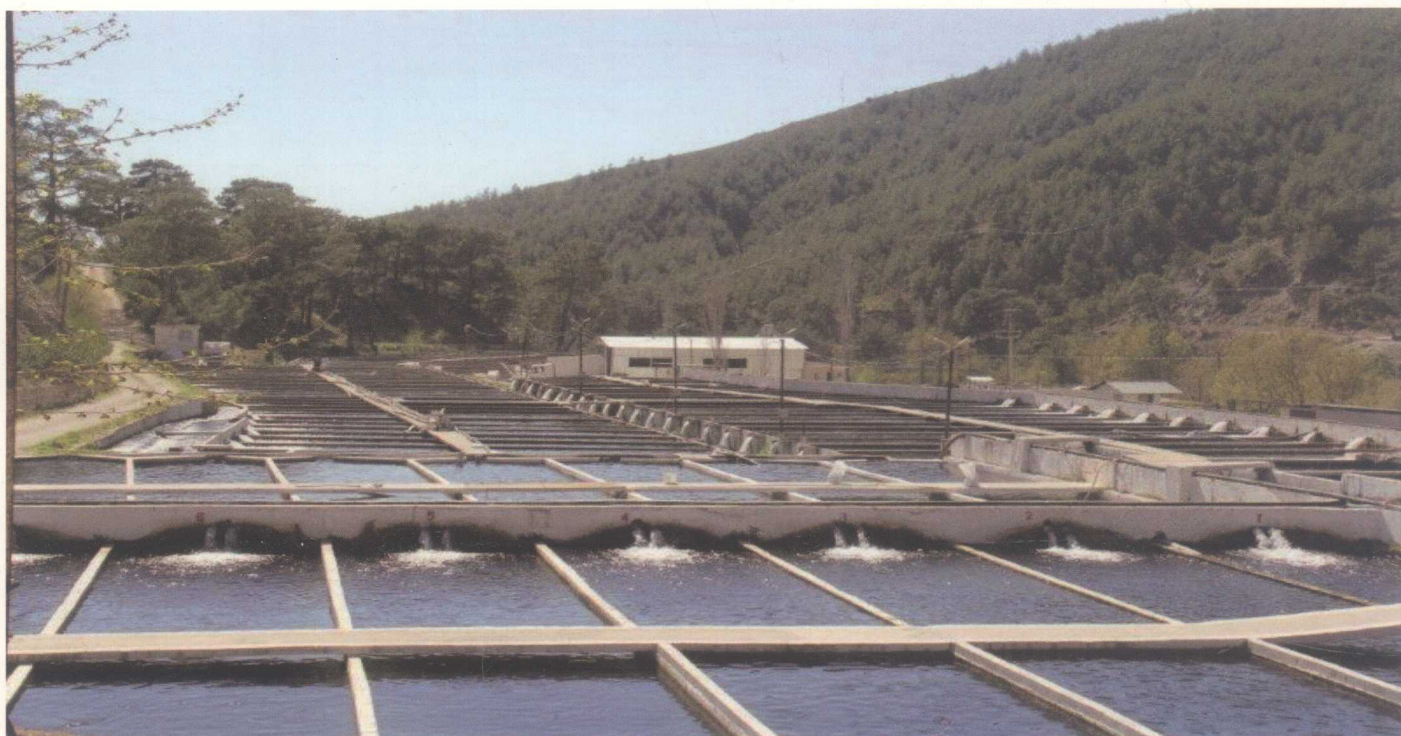


**REGIONAL PRINCIPLES FOR RESPONSIBLE AQUACULTURE IN THE
CENTRAL ASIA AND CAUCASUS REGION**

**РЕГИОНАЛЬНЫЕ ПРИНЦИПЫ ПО ОТВЕТСТВЕННОЙ АКВАКУЛЬТУРЕ
В ЦЕНТРАЛЬНОЙ АЗИИ И НА КAVKAZE**



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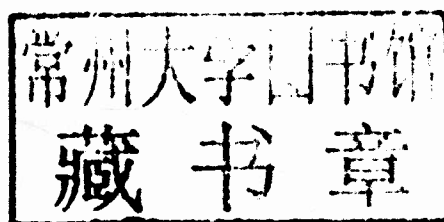
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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ПРОДОВОЛЬСТВЕННАЯ И СЕЛЬСКОХОЗЯЙСТВЕННАЯ
ОРГАНИЗАЦИЯ ОБЪЕДИНЕННЫХ НАЦИЙ
BISHKEK, 2013/БИШКЕК, 2013 г.

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PREPARATION OF THIS DOCUMENT

This report, which is based on a regional workshop on the Code of Conduct for Good Management Practices for Central Asian Aquaculture, has been prepared with an aim to contribute to promotion and sharing of good aquaculture practices for the Central Asian and Caucasus region.

The draft of the Regional Principles for Responsible Aquaculture in the Central Asia and Caucasus Region was compiled by Sunil.N. Siriwardena, the International team Leader of FAO Project GCP/KYR/003/FIN and Haydar Fersoy, Fishery Management Expert of the FishDev Central Asia Programme.

The Regional Principles for Responsible Aquaculture in the Central Asia and Caucasus Region was submitted to the First Session of the Technical Advisory Committee (TAC) of the Central Asian and Caucasus Regional Fisheries and Aquaculture Commission (CACFish), which was organized in Kiev, Ukraine from 20 to 22 November 2012. The TAC following technical discussions and review approved the principles and submitted them to CACFish for consideration of endorsement.

ABSTRACT

Aquaculture is one of the fastest-growing food-producing sectors in the world. Although it is an economic activity that has raised concerns in relation to the environment, social acceptability and food safety, aquaculture is also recognized as a sector that generates livelihoods and income in many countries and especially for the rural poor. Although aquaculture in the Central Asia and Caucasus Region does not make a significant contribution in terms of world aquaculture production and trade, it is being increasingly recognized in many countries in the region as an important economic activity and greater focus has now been placed on the development of the sector. The Regional Principles for Responsible Aquaculture in the Central Asia and Caucasus Region provide the basis for national planning related to aquaculture resources; principles upon which all concerned stakeholders can collaborate for a more sustainable development of aquaculture in the Central Asia and Caucasus Region. Their development has been supported by the Support to Fishery and Aquaculture Management in the Kyrgyz Republic (GCP/KYR/003/FIN) project and the Central Asia Regional Programme for Fisheries and Aquaculture Development (FishDev Central Asia) under the FAO–Turkey Partnership Programme (FTPP).

ПОДГОТОВКА ДАННОГО ДОКУМЕНТА

Данный отчет основан на результатах регионального семинара «Кодекс эффективных методов управления аквакультурой в Центральной Азии» и подготовлен с целью продвижения и распространения эффективных методов аквакультуры в странах Центральной Азии и Кавказа.

Предварительная версия Региональных принципов по ответственной аквакультуре в Центральной Азии и на Кавказе была подготовлена г-ном Сунилом Сиривардена, международным руководителем проекта ФАО GCP/KYR/003/FIN, а также г-ном Хайдар Ферсой, экспертом по управлению рыбным хозяйством, программы в Центральной Азии FishDev.

Региональные принципы по ответственной аквакультуре в Центральной Азии и на Кавказе были представлены на рассмотрение первой сессии Технического консультативного комитета (ТКК) Региональной комиссии по рыбному хозяйству и аквакультуре в Центральной Азии и на Кавказе (CACFish), которая была организована в Киеве, Украине с 20 по 22 ноября 2012 года. После обсуждения технических вопросов на заседании ТКК и утверждения, региональные принципы были представлены в CACFish на рассмотрение и утверждение.

РЕЗЮМЕ

Аквакультура – один из наиболее быстро растущих видов экономической деятельности в мире и признаётся как экономическая деятельность, которая может оказать воздействие на экологию, социальную приемлемость и безопасность продуктов. Аквакультура так же признаётся как сектор, который способствует росту доходов во многих странах, включая бедных сельских жителей. Несмотря на свою неразвитость в странах Центральной Азии и Кавказа и незначительный вклад в мировую аквакультуру и торговлю, аквакультура всё более признаётся в большинстве странах, как важная экономическая деятельность, и развитию этого сектора уделяется большое внимание. Региональные принципы по ответственной аквакультуре предоставляют основу для национального планирования в отношении ресурсов, где все заинтересованные стороны могли бы сотрудничать для более устойчивого развития аквакультуры в Центральной Азии и на Кавказе. Разработка Региональных принципов по ответственной аквакультуре поддерживалась проектом «Содействие управлению рыболовством и аквакультурой в Кыргызской Республике» (GCP/KYR/003/FIN) и Центрально-азиатской региональной программой развития рыбного хозяйства и аквакультуры (FishDev Central Asia) в рамках партнерской программы ФАО-Турция (FTPP).

ACKNOWLEDGEMENTS

The Support to Fishery and Aquaculture Managements in the Kyrgyz Republic (GCP/KYR/003/FIN) project and Central Asia Regional Programme for Fisheries and Aquaculture Development (FishDev Central Asia) under the FAO Turkey partnership Programme (FTPP) is indebted to the Governments of Finland and Turkey for the financial assistance for the FAO project and Regional Programme, respectively, and to Aquaculture Conservation and Management Service (FIMA) of FAO for providing guidance in formulating the regional principles. Special thanks go to Ms. Tina Farmer and Ms. Marianne Guyonnet for their professional assistance in the finalization of this circular. The GCP/KYR/003/FIN project and FishDev Central Asia programme wish to acknowledge the contribution of FAO with all photographs in this document.

БЛАГОДАРНОСТЬ

Проект Содействие управлению рыболовством и аквакультурой в Кыргызской Республике (GCP/KYR/003/FIN) и Центрально-азиатская региональная программа по развитию рыбного хозяйства и аквакультуры (FishDev Central Asia) в рамках партнерской программы ФАО-Турция (FTPP) внесли свой вклад благодаря финансовой поддержке правительств Турции и Финляндии, проекта ФАО и Региональной программе, помощь также оказана службой ФАО по сохранению и услугам в управлении (FIMA) в предоставлении руководства по формулированию региональных принципов. Особая благодарность выражается г-же Тине Фармер и г-же Марианне Гиенет за их профессиональное содействие в доработке данного циркуляра. Проект GCP/KYR/003/FIN и Центрально-азиатская программа развития FishDev Central Asia выражает признательность ФАО за предоставление всех фотографий для данного документа.

ABBREVIATIONS AND ACRONYMS

Code	Code of Conduct for Responsible Fisheries
EIA	Environmental impact assessment
GMP	Good management practice
CACFish	Central Asian and Caucasus Regional Fisheries and Aquaculture Commission
FTPP	FAO–Turkey Partnership Programme

АББРЕВИАТУРЫ И АКРОНИМЫ

Кодекс	Кодекс ведения ответственного рыбного хозяйства
ОВОС	Оценка воздействия на окружающую среду
ЭМУ	Эффективные методы управления
CACFish	Региональная комиссия по рыбному хозяйству и аквакультуре в Центральной Азии и на Кавказе
FTPP	ФАО–Программа партнерства Турции

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1. BACKGROUND AND PURPOSE

1.1 Introduction

Aquaculture production and trade continue to grow at a fast pace, responding to increased global demand for fish, shrimp, molluscs and other aquatic products. In 2010, aquaculture production (excluding aquatic plant production) was 59.9 million tonnes with an estimated total value of US\$119 billion (FAO, 2012). However, with the increasing volume of production, trade and consumption, there are also concurrent and increasing demands for sustainability, social acceptability and human health safety from the aquaculture products. One of the reasons for these demands is that aquaculture has not usually been considered in national planning related to resource use, such as soil and water conservation, water pollution, plant and animal quarantine programmes, and other aspects of environmental management (Boyd et al., 2008). However, countries must consider how to address the potential to cause adverse impacts as aquaculture has become, or is identified as, a potential major food-producing sector for food security and enhancement of livelihoods and income, particularly for the rural poor. Public and scientific opinion is demanding better environmental stewardship and wiser use of dwindling world resources. Some of the reasons why aquaculture practices methods should be improved are (Boyd et al., 2008):

- Consumers are concerned with food safety and want food to be produced using environmentally and socially responsible methods.
- Environmental groups are seeking to relieve pressure on natural fisheries through responsible aquaculture.
- Developed nations are depending more on imported food and want to ensure that good production practices are used in exporting nations.
- The aquaculture industry wants to assure its markets.
- Governments want to protect the environment and to promote exports.

The above concerns affect not only international trading environment and pressurizing producers to focus on production methods to address those issues; they are also challenges to producing countries to develop and implement adequate and appropriate policies and institutions to provide a conducive environment for responsible production and trade (FAO/NACA/UNEP/WB/WWF, 2006). In 1995, to assist in achieving these objectives, the Members of FAO adopted the Code of Conduct for Responsible Fisheries (the Code), thereby providing a framework for responsible management and development of fisheries and aquaculture.

Therefore, the aquaculture industry of countries has a moral responsibility to respond proactively to the concerns voiced in the Code by voluntarily developing and regulating a more ecologically responsible aquaculture sector. An effective approach to voluntary regulation of aquaculture practices is for sector participants to adopt codes of practice that contain good management practices (GMPs) designed to ensure a sustainable aquaculture industry that is socially and environmentally responsible. The systems of GMPs need to be customized, inter alia, for site characteristics, production goals, and national and industrial interests. The most practical procedure appears to be for an industry group (farmers, farmer associations, producers, producer organizations, etc.) to develop a general code of practice for a region or a nation, and this code of practice can then be adhered to through the application of site-specific GMPs (Boyd et al., 2008).

Commonly agreed management frameworks for aquaculture include the following key components:

- compliance with respective legislation/regulations;
- environmentally responsible sustainable development;
- long-term protection of the environment;
- economic viability;
- respect for other resource users;
- water quality management, human health;
- animal health and welfare;
- fish escapement, accountability and shared responsibility;
- stakeholder participation and communication.

However, management and implementation guidelines, codes, GMPs, standards and certification have not entered into common use in this sector. Being non-binding, codes of practice and GMPs in fisheries and aquaculture have generally been applied on a voluntary basis and found limited implementation at the national, regional and global level. These instruments are usually designed to generate more sustainable production under the conditions established by respective national legislation and rules, and they reflect the shared commitment aquaculture stakeholders to manage, operate and develop a sustainable aquaculture. Codes and GMPs can be recognized as suggested regulations, standard practices and statements of commitment. Compared with other regions in Asia, the Central Asia and Caucasus Region lacks codes of aquaculture GMPs.

1.2 Aquaculture in the countries of the Central Asia and Caucasus region

As is the case with fisheries, aquaculture in the Central Asia and Caucasus Region has undergone considerable changes that have resulted in decreased fisheries production since the independence of the countries of the Central Asia and Caucasus Region from the former Soviet Union in the early 1990s. The aquaculture sector has shown continuing signs of recovery and development over the last years. However, the sector is characterized by low-volume production. In 2010, total aquaculture production in Central Asia amounted to 7 731 tonnes, with an estimated value of US\$4 900 000. The breakdown by country was: Uzbekistan, 6 654 tonnes; Tajikistan, 517 tonnes; Kyrgyzstan, 319 tonnes; Kazakhstan, 224 tonnes; Turkmenistan, 17 tonnes). The total aquaculture production from the region accounts for a negligible share of the volume of world aquaculture production. For example, in 2010, the contribution of Central Asian aquaculture to total world aquaculture production was 0.018 percent.

In the region, aquaculture is generally practised in privatized old farms or newly established private farms, most of which are small scale. Culture in open ponds and cages on lakes are common types of production types in the region. The main cultured species include silver carp (*Hypophthalmichthys molitrix*), common carp (*Cyprinus carpio*), crucian carp (*Carassius carassius*), grass carp (*Ctenopharyngodon idella*), rainbow trout (*Oncorhynchus mykiss*), pike-perch (*Sander lucioperca*) and freshwater ream (*Abramis brama*). The sector needs technological improvements in overall aquaculture production and post-harvest and marketing of fish and fish products.

Although not a significant contribution to world production and trade, aquaculture is increasingly recognized in the countries of the Central Asia and Caucasus Region as an important economic entity and great focus has been placed on the development of the sector with the establishment of the Central Asian and Caucasus Regional Fisheries and Aquaculture Commission (CACFish), a regional fisheries management organization established under the FAO Constitution.

1.3 Process

The Regional Principles for Responsible Aquaculture in the Central Asia and Caucasus Region have been developed from the outcome of the Regional Workshop on Development of a Code of Good Management Practices for Central Asian Aquaculture, conducted in the Kyrgyz Republic on 8–9 May 2012. The project Support to Fishery and Aquaculture Managements in the Kyrgyz Republic (GCP/KYR/003/FIN) and the Central Asia Regional Programme for Fisheries and Aquaculture Development (GCP/RER/031/TUR; FishDev Central Asia) under the FAO–Turkey Partnership Programme (FTPP) supported the regional workshop. The workshop was attended by a wide range of stakeholders from government, private and non-governmental organizations representing six countries of the region: Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

The workshop was conducted largely in a participatory manner involving group work, each group well represented by government, private and non-governmental organizations had the following objectives:

- To raise awareness on the Code and the development of responsible aquaculture in the Central Asia and Caucasus Region and on the importance and applicability of a code on aquaculture GMPs.
- To develop Regional Principles for Responsible Aquaculture in the Central Asia and Caucasus Region to provide the basis to develop more nationally applicable and site-specific codes of GMPs.
- To submit the developed Regional Principles for Responsible Aquaculture in the Central Asia and Caucasus Region to CACFish for adoption and dissemination.

In order to develop the Regional Principles for Responsible Aquaculture in the Central Asia and Caucasus Region, the International Principles for Responsible Shrimp Farming (FAO/NACA/UNEP/WB/WWF, 2006) was used as the

guiding document. The draft of the Regional Principles for Responsible Aquaculture in the Central Asia and Caucasus Region was compiled by Sunil.N. Siriwardena, the International team Leader of FAO Project GCP/KYR/003/FIN and Haydar. Fersoy, Fishery Management Expert of the FishDev Central Asia Programme.

1.4 Purpose

The purpose of the Principles for Responsible Aquaculture in the Central Asia and Caucasus Region is to provide a basis to develop more locally applicable and site-specific codes of GMPs or other management approaches for pond-based aquaculture practices, suitable for adoption by farmers in particular social, environmental and economic contexts. It is further expected that the principles will provide the public and private sectors with the basis for developing planning and operational management of responsible aquaculture in the countries of the Central Asia and Caucasus Region. The principles and implementation guidance consider technical, environmental, social and economic issues associated with the aquaculture practices and provide a basis for industry and government management to improve the overall aquaculture practices at the national and regional levels.

For stakeholders, the principles and implementation guidance would provide the basis upon which they can collaborate for a more sustainable development of aquaculture. For governments, they provide the basis for policy, administration and legal frameworks that can be renewed, adjusted, funded and implemented to address the specific characteristics and needs of the sector in order to protect and enhance the industry, the environment, other resource users and consumers (FAO/NACA/UNEP/WB/WWF, 2006). In most countries of the Central Asia and Caucasus Region, the existing legislation and guidelines have been modified from those suitable for other industries and are not always applicable to aquaculture. The strengthening of institutional arrangements, capacity and partnerships is also important to ensure the cooperation and coordination of all relevant institutions with jurisdiction over natural resources, animal and public health. The principles and guidance in the code would also provide the basis for development of standards and certification systems in aquaculture.

2. REGIONAL PRINCIPLES FOR RESPONSIBLE AQUACULTURE IN THE CENTRAL ASIA AND CAUCASUS REGION

Principle 1 – Aquaculture farm siting

Individuals, groups of persons and companies involved in aquaculture and operation exclusively and collectively shall site their aquaculture structures and facilities according to respective national legislation and planning and only in environmentally compatible locations, while ensuring efficient water, energy and land use and reducing or mitigating possible negative impacts on biodiversity and respecting the rights of other users of land and water.



Justification

Siting aquaculture structures and practices in locations compatible with the environment minimizes or prevents negative impacts on ecology, helps to conserve biodiversity of the area and allows compliance with existing laws and regulations. The rational use of land and water resources respecting the rights of other users will reduce the cost of aquaculture practices and prevents social injustice and possible conflicts with other natural resource users. Moreover, conducting a suitability assessment for an aquaculture site before investment and designing an aquaculture project is of high importance for the sustainability of aquaculture operations.

Implementation guidance

- Conduct, where appropriate, an environmental site assessment as part of an environmental impact assessment (EIA) or project application process.
- Avoid sites that are access routes or part of access routes for fishing grounds or that obstruct other resource users.
- Do not use buffer zones of a particular location to site aquaculture farms.
- Retain buffer zones and habitat corridors between farms and between important habitats and other users.
- Avoid productive agricultural land to site aquaculture farms.
- Avoid sites that are reaching or have already reached carrying capacity for aquaculture.

- Locate aquaculture farms in locations with suitable soil quality and with access to a water source with suitable water quality.
- Obey national and local legislation and planning of natural resources use such as land and water.
- Site coastal aquaculture farms in the supratidal zone. This zone may include the intertidal areas where water reaches only at the high high-water level.
- Avoid ecologically sensitive habitats such as mangroves, salt marshes and mudflats to site coastal aquaculture practices.
- Take into consideration the local environmental conditions and estimated carrying capacity of aquaculture in the area.
- Develop criteria for site selection and for assessment of carrying capacity.
- Select sites that decrease the possibility of disease outbreaks.