

NICARAGUA – Tilapia fish farming (Oreochromys spp) in Floating cages in Ometepe Island, Lake Cocibolca

Case: Tilapia fish farming (Oreochromys spp) in floating cages in Ometepe Island, Lake Cocibolca. Municipality of Altagracia, Department of Rivas. Republic of Nicaragua

1) General Facts

Location of Lake Cocibolca: 11° 00'- 12° 08' North y 84° 40'-85°57' West.

Lake's surface: 8000 km².

Lake's basin surface: 15.844 km².

Length: 160 Km.

Width: 70 Km.

Maximum Depth: 45 m.

Altitude: 32 m.a.s.l.

Average Water Level: 31.5 m.s.a.l.

Volume discharged in San Juan River: 476.6 m³/s.

Ometepe island's surface: 276 km².

Main Economic Activities: Cattle grazing, agriculture, industry and tourism.

2) Lake Cocibolca's description and importance

Lake Cocibolca constitutes the main lake body in Central America and the main water source of Nicaragua. Such water body has the capability of providing water for an irrigation area estimated between 625.000 y 930.000 hectares of soil for agricultural uses in the country, for drinking purposes to supply the populations in the cities on the Pacific basin, as well as for promoting consumption and sport fishing

Ometepe Island, located within this lake, with an area of 276 km², is regarded as one of the most valuable economical and scenic resources of the lake. This island has been declared Natural Reserve and Cultural Heritage of the Nation, through Law # 203, Art. 8.

In spite of its importance for Nicaragua, several environmental damages have been diagnosed for the lake's ecosystem and its basin:

- Deforestation (slash and burn techniques) and consequent soil erosion.
- Soil use change in forest areas for agricultural purposes.
- Pesticide and agrochemical pollution.
- Ecosystems destruction by monoculture plantations.
- Urban development growth without appropriate waste water treatment.

Due to its importance, several initiatives have been implemented to rescue this ecosystem, such as the request before the UNO to declare the Lake Cocibolca as Patrimony of Humanity.

3) Water resources conflict denounced in the area

The Norwegian fish farming Enterprise Mares Nica-Noruegos S.A., obtained a Concession for the industrial fish farming and exploitation in floating cages in natural waters within Lake Cocibolca along the Ometepe Island coastline. The freshwater fish species to be raised and exploited for industrial purposes is the Tilapia (*Oreochromys spp*) and the concession was granted by the Nicaraguan Ministry of Industry and Trade Promotion by accord # DGRN-CONCESION-PA-001-2000, in a water mass area estimated in 86.67 hectares. The environmental permit was conceded afterwards by the Ministry of Natural Resources and Environment (MARENA) through Resolution # 21-2001.

This project does not constitute the first experience of an exotic freshwater fish introduction in a natural lake, but it does constitute the first project of industrial fish farming within a lake of multiple uses.

The aggressiveness, generalist consumption habits and competitiveness associated to this species, native of Africa, have been thoroughly studied and it is regarded as a threat to local fish species in several natural lake bodies in which it has been introduced.

The following are said to be most meaningful social and environmental impacts related to this fish introduction in natural lakes:

- Decrease, and even disappearance, of native fish species due to parasitic infections.
- Drastic diminishment in net fish catches for local fishermen as their source of subsistence and livelihood.

In the case submitted to the CAWT, it is said that fish farming in confined areas would increase the amount of organic waste load, as a result of feces and urine generated by the tilapias as well as by the food supplied to the tilapias in the floating cages.

According to the complaining party, the installation and execution of this project is incompatible with the current efforts oriented to protect the resources provided by the lake, such as drinking water, tourist and recreational activities, and the

biodiversity within the lake's basin. Furthermore, the project is located along the Ometepe Island's coastline declared Natural Reserve and Cultural Patrimony of the Nation.

The above would add up to the causing factors of environmental decay in the Lake Cocibolca's basin and it would spoil the existing initiatives for the lake's restoration.

Denounced Activity: High health and environmental risk to the lake's ecosystem and the populations located in Lake Cocibolca's basin because of the industrial tilapia fish farming project in Ometepe's island.

Opposing Parties: Governorship of Altagracia
Foundation for the Conservation and Development of the
Southeast of Nicaragua- Fundación del Río

Against: Government of the Republic of Nicaragua
Enterprise MARES NICA-NORUEGOS S.A. (NICANOR)

Irregularities denounced by the Governorship of Altagracia and Fundación del Río

- Concession and environmental permit granted without an Environmental Impact Assessment. This situation would violate the Norm on permits and environmental impact assessments
- Public and municipal consultation ignored or omitted.
- Violation to the local government's jurisdiction.
- Violation to the following norms:
 - a) General Law over the exploitation of our wealth, Art. # 4; Law 217,
 - b) General Environment's Law Arts. 25, 26, 27, 28, 29, 30, 54, 55, 56, 57, 58, 60, 61, 62;
 - c) Law of Permits and Environmental Impacts Assessments, arts. 24, 25, 26, 27 and 28; Decree # 45-94, arts. 1, 2, 3, 4, 5 incise c), 7,10, 11,12, 13,14,18, 20,21,22
 - d) Decree 33-95 on Dispositions for the Domestic, Industrial and Agricultural Waste Waters Control;
 - e) Art. 8, Law # 203 of Declaration of Ometepe Island as Natural Reserve y Cultural Patrimony of the Nation.
- Permission granted by MARENA, in spite of ignoring certain aspects of the project, such as its exact location, water quality in the area conceded for exploitation and so forth.
- Exotic species introduction in a natural lake water body in disregard of its effects neither on the native fish fauna nor on the water quality.
- Unsafe measures in manipulating the fish transportation and in controlling the eventual effects due to natural phenomena.
- Contamination and decrease in the water quality due to the feces pollution generated in the cages.

- Eventual impacts generated by the tilapias introduction in natural waters were ignored.

Possible health and environmental risks associated to the irregularities described

- Local fish populations' displacement.
- Parasitic infection to the local fish fauna, jeopardizing its existence.
- Diminishing consumption and sport fish catch productivity due to exotic species introduction.
- Production and discharge of 3 million kilograms of feces to the Lake for every fish breeding period, estimated in 241 days.
- Generation of odors, dissolved oxygen exhaustion and water quality loss as a result of the above reasons.
- Increase in the water quality decay of Lake Cocibolca, undermining the current endeavors oriented to rescue and revert the causes of the existing deterioration of its basin.
- Eventual damage to the water sources that might contribute to further contamination to the drinking water for the current and future populations on the Nicaraguan pacific watershed.

4) Documentary evidence supplied by the Governorship of Altagracia and Fundación del Río

Legal and administrative actions and institutional response

- Acuerdo Ministerial No. DGRN-CONCESION-PA-001-2000. Ministerio de Fomento, Industria y Comercio, Concesión de aguas para el Cultivo y Explotación de tilapias en jaulas. La Gaceta-Diario Oficial No. 98. 25/05/2000: This accord grants permission to the fish farming industry along Ometepe Island's coastline.
- Aviso de Disponibilidad del Documento de Impacto Ambiental: Cultivo de Tilapia en Jaulas Flotantes en la Isla de Ometepe, MARENA, Gobierno de Nicaragua. Octubre del 2001: Through this advertisement, the Ministry of Natural Resources and Environment announces the environmental impact assessment's availability for public consultation.
- Solicitud de la Procuraduría Ambiental ante la Dirección General de Calidad Ambiental del Ministerio del Ambiente. 26/10/2001. This injunction requests the invalidation of the environmental permit granted.
- Pronunciamiento de la Comisión del Medio Ambiente del Municipio de Altagracia. 08/11/2001: This is the statement made by the municipal government's against the fish farming activity.
- Interposición de Recurso de Revisión por la Procuraduría Ambiental de la República de Nicaragua contra la Resolución Administrativa #21-2001: This injunction requests to review the resolution through which the environmental permit was conceded.

- Resolución Administrativa No. 21-2001 de la dirección General de Calidad Ambiental del Ministerio del Ambiente y los Recursos Naturales (MARENA). 21/11/2001: This resolution resolved to concede the environmental permit.
- Recurso de Revisión interpuesto por el Procurador Nacional Ambiental ante la Dirección General de Calidad Ambiental del MARENA. 19/12/2001: This is the request made by the environment's ombudsman to annul the environmental permit.
- Resolución de la Dirección General de Calidad Ambiental del Ministerio de Ambiente y Recursos Naturales ante Recurso de Revisión interpuesto por la Procuraduría Nacional del Ambiente. 24/01/2002: This resolution responds to the ombudsman's request to annul the permit conceded to the fish farming activity.
- Carta de la Dirección General de Calidad Ambiental al Procurador Nacional Ambiental. 24/05/2002.
- Resolución de la Sala Civil de Apelaciones ante recurso interpuesto por el Sr. Clemente Martínez. 05/07/2002: Resolution made by the Constitutional Court.
- Interposición de Recurso de Amparo de Hecho por el Sr. Clemente Martínez .09/07/2002: Injunction made before the constitutional court in response to the previous resolution.
- Comunicado de las Alcaldías de Acoyapa, Comalapa, Cualpa y Juigalpa, a la Presidencia de la República de Nicaragua. 07/10/2002: Statement made by the Nicaraguan municipalities before the Nicaraguan government.
- Declaración del Consejo de la Asociación de Municipios de Nicaragua 17/10/2002: Declaration made by the municipal governments for lake Cocibolca's sustainable development.
- Ordenanza Municipal Alcaldía Municipal de Altagracia. La Gaceta-Diario Oficial No. 216. 13/11/2002: Municipality of Altagracia's norm on territorial planning.

Entrepreneurs response

- Carta del Gerente General de la Empresa MARES NICA-NORUEGOS S.A. (NICANOR) a la Policía Nacional de Nicaragua 26/09/2002: Through this letter, enterprise NICANOR requests the National Police to act against those who oppose the fish farming Project.

Technical Analysis and Studies

- Comentarios técnicos sometidos por el Centro de Investigación en Recursos Acuáticos de Nicaragua en el proceso de consulta convocado por el MARENA. 25/10/2001: Remarks on the environmental impact assessment made by CIRA.
- Impactos Biológicos causados por la introducción de tilapias (*Oreochromis spp.*) en aguas naturales; Revisión Mundial. Jeffrey McCrary, Asociación GAIA: Study provided by biologist Jeffrey McCrary on tilapia fish's natural history.

Maps

- Map of water Concession for tilapia fish farming.