

# Tec Professor aims to restore second largest lake in Mexico



“Currently, **Lake Cuitzeo** is suffering one of the **worst droughts** in the last 30 years. It’s a problem that has attracted **international** attention and that we must be able to solve.”

This is how **Dr. Rafael Trueba**, Professor of Economics at the [Tec's Morelia campus](#), described the problems now facing the area of **Lake Cuitzeo**, the **second largest lake in Mexico** and the **fourth oldest in the world**, located in the state of **Michoacán**.

Through a **virtual workshop** with the [University of Zagreb](#) in Croatia, Professor **Rafael** gave an international presentation of his keynote ‘**Environmental economics: The case of Lake Cuitzeo, Michoacán, Mexico**’, an **ecological restoration** project based on **environmental and economic studies**.

The aim of the project, developed by the **Morelia campus** professor in conjunction with other university professors and research professors from the Michoacán University of Saint Nicholas of Hidalgo and the National Autonomous University of Mexico, as well as several **civil associations**, is to declare **Lake Cuitzeo** an **ecological restoration area** at federal level.

“Getting **Lake Cuitzeo** to be considered an **ecological restoration zone** at federal level is the first step that will allow **resources to be allocated** from the federation to projects that contribute to mitigating the crisis the lake is experiencing and the **quality of life of the people** who live around it,” **Rafael** said in an interview with **CONECTA**.



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The **ecological restoration** project presented by the **Morelia campus** professor has three main stages:

### **1. Environmental and resource management:**

To carry out a **diagnosis of the situation** with technical studies that explain how the project can be consolidated. Subsequently, to make a **working proposal** and send it to the **federal departments** in charge of endorsing that proposal.

### **2. Declaration of an ecological restoration zone:**

To present the project to the **Chamber of Deputies, who may decree** Lake Cuitzeo to be an **ecological restoration zone**.

### **3. Action plan:**

To carry out **specific projects** in the area, which contribute to improving environmental quality and the quality of life of the people who live on the shores of the lake, such as **constructing a wastewater treatment plant**, implementing **floating solar panels** that help to reduce dust storms when the lake is dry, and **reforesting** areas near the lake.



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According to the economics professor at the **Morelia campus**, there are **four main variables** that indicate **Lake Cuitzeo** is in a critical environmental situation: **deforestation** in the region due to changes in land use, **climate variability**, **wastewater discharges**, and the **construction of highways** that have divided the lake into **three large basins**.

*“To understand what is happening in a lake, you have to **know about its basin** and all the towns that surround it. That’s how you can **solve the problem**,”* said Professor **Rafael**.

In addition to environmental problems, the **Lake Cuitzeo** drought has had a negative impact on the main communities located on its shore, who belong to the municipalities of **Huandacareo** and **Cuitzeo**, as it is causing **respiratory, ophthalmological and gastrointestinal diseases and skin allergies** due to the **dust storms**.

**Dr. Rafael** states that **dust storms**, or polluted dust and dirt storms from the dry part of the lake, occur in the **west basin** during the first **four or five months of the year** and their effects cause the inhabitants of the affected areas to spend around **7 million pesos annually** on medical consultations, medicine, and face masks.

Another of the **socioeconomic effects** that **Rafael** and the other project collaborators have identified is the **disappearance of fishing**, one of the most important productive activities in the region. Currently, there are around **1,500 unemployed fishermen**, and this has had an impact on more than **four thousand families**.



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The presentation given by Professor **Rafael**, organized by the **University of Zagreb** in Croatia, was held **virtually** on Friday, May 7, 2021, in order to publicize the environmental and socioeconomic problems that the **Lake Cuitzeo** area is experiencing and to invite other international universities to **join the project**.

*“An **international perspective** on these issues always helps a lot with support for **solutions**. If measures are not being taken to solve things at the national level, the next step is to go to **international bodies** to bring more attention to bear on the topic at hand,”* **Rafael** concluded.

The project’s **productive activities**, such as **waste collection** and **reforesting** the area, are expected to start giving results in a period of **one to two years**, while **Lake Cuitzeo** is expected to recover its **water quality and quantity** over a period of at least **five years**.

**Lake Cuitzeo** is the **second largest lake in Mexico**, at around **452 square kilometers**. It has currently lost **more than 70%** of its water capacity. If no action is taken, Professor **Rafael** estimates that the lake could disappear completely within **ten years**.

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