Cooperation Program for the Training of Human Resources in the Mexico-Japan Global Strategic Partnership (Nichiboku Program)

Mitigating Risks to Sustainable Development (Climate Change, Deforestation, Biodiversity Loss)

National Institute of Forestry, Agricultural and Livestock Research (INIFAP)
Teocelo Experimental Station Site,
Xalapa, Veracruz, México

Course period: September 1—September 5, 2025

Gabriel Diaz Padilla
Course Organizer

INTRODUCTION

This program is designed to address pressing environmental challenges such as **climate change.** It aims to equip participants with the knowledge and tools necessary to promote sustainable development through the integration of **remote sensing**, **GIS**, and **hands-on field practices.**

The workshop is structured into **two key phases**. The **first phase** focuses on **awareness and diagnosis**, providing a comprehensive understanding of environmental risks and their interconnected impacts. Participants will engage in practical activities using **satellite imagery** and **GIS** to analyze and map these risks. The **second phase** emphasizes **action and commitment**, delving **into nature-based solutions**, **vulnerability assessments**, and **community engagement strategies**. A dedicated session will explore the evaluation of vulnerability using remote sensing and GIS, enabling participants to define vulnerability equations and create actionable maps for decision-making.

The program also includes **field visits** to **INIFAP's experimental site in Xalapa**, where participants will study sustainable practices for crops such as **coffee, corn, and pineapple**. By combining theoretical knowledge with practical applications, this 5-day workshop aims to empower participants to drive meaningful change in their communities.

1.- Training Objectives and Expectations

### 1.1.	Enhance Knowledge:
Participants will gain a deep understanding of environmental challenges such as climate change and their impacts on sustainable development.
Expectation: Active engagement in lectures and discussions to build a strong theoretical foundation.

### 1.2.	Develop Technical Skills:
Participants will acquire hands-on skills in remote sensing and GIS to analyze, map, and monitor environmental risks and vulnerabilities.
Expectation: Full participation in practical exercises and workshops to master technical tools.

### 1.3.	Apply Sustainable Solutions:

Participants will learn to design and implement nature-based solutions, vulnerability assessments, and sustainable agricultural practices. *Expectation*: Apply learned methodologies to real-world scenarios during field visits and group activities.

1.4. Foster Collaboration and Action:

Participants will collaborate to develop actionable strategies for mitigating environmental risks and promoting sustainable development. *Expectation*: Active involvement in group projects and networking to share knowledge and build partnerships.

By meeting these objectives, participants will be equipped to drive meaningful change in their communities and contribute to global sustainability efforts.

2. Target Audience:

Technicians, researchers, and anyone interested in the topic.

3. Expectations for Participants

Participants are expected to actively engage in lectures, workshops, and field activities, demonstrating a commitment to learning and collaboration. Full participation in hands-on exercises, group discussions, and project development is essential. By sharing knowledge and applying new skills, participants will contribute to the workshop's success and advance sustainable development goals.

4. Information about the training center

The National Institute of Forestry, Agriculture, and Livestock Research (INIFAP) is a leading scientific institution in Mexico, recognized for its expertise in generating knowledge and technological innovations to support the forestry, agricultural, and livestock sectors. Through its highly trained personnel, advanced infrastructure, and efficient administration, INIFAP addresses critical sectoral challenges. One of its key facilities, the Teocelo Experimental Station, safeguards a vital coffee germplasm bank, preserving disease-resistant genotypes for research and the development of improved coffee varieties, thereby contributing to the sustainability of Mexico's coffee industry.

5. Course Instructors

The course will be led by a team of highly qualified instructors with expertise in remote sensing, GIS, sustainable development, and environmental science. They will be responsible for delivering lectures, guiding hands-on activities, and providing mentorship to ensure participants achieve the learning objectives of the program.

NAME/EMAIL	SPECIALIZATION	AFFILIATION	COUNTRY
Dr. Gabriel Díaz Padilla	Vulnerability and Climate Change	National Institute of Forestry, Agricultural, and Livestock Research (INIFAP) Gulf Central Regional Research Center. Cotaxtla Experimental Field. Teocelo Experimental Site	México
Dr. Ignacio Sánchez Cohen	Integrated Watershed Management and Climate Change	National Institute of Forestry, Agricultural, and Livestock Research (INIFAP) National Center for Disciplinary Research in Water, Soil, Plant, and Atmosphere Relations	México
Dr. Victor Rodríguez	Vulnerability and Climate Change	National Remote Sensing and Modeling Laboratory (INIFAP)	México

NAME/EMAIL	SPECIALIZATION	AFFILIATION	COUNTRY
Dra. Nuria Aide López Hernández	Soil Science and Irrigation Engineering	National Institute of Forestry, Agricultural, and Livestock ResearchNational Center for Disciplinary Research in Water, Soil, Plant, and Atmosphere Relations	México

6. **Course duration in Mexico**

- September 1 – September 5, 2025

7. **Limit of participants**

- Two trainees

8. **Language**

- English

9. Contents

5-Day Program Schedule by Sessions

Session 1: Monday, September 1, 2025

SCHEDULE (Mexico City Time, CT)	TOPIC	TARGET AUDIENCE	INSTRUCTOR
08:00-16:00 Hrs. (CT)	**Day 1: Inauguration and Introduction** 1. Welcome and program overview. 2. Keynote speech: "Global Challenges for Sustainable Development." 3. Introduction to remote sensing and GIS.	All participants	Dr. Gabriel Díaz Padilla

Session 2: Tuesday, September 2, 2025

SCHEDULE (Mexico City Time, CT)	TOPIC	TARGET AUDIENCE	INSTRUCTOR
08:00 - 16:00 Hrs. (CT)	**Day 2: Climate Change** 1. Workshop: "Understanding Climate Change: Causes, Effects, Solutions." 2. Practical activity: Carbon footprint calculation. 3. Remote sensing activity: Monitoring climate change impacts.	All participants	Dr. Ignacio Sánchez Cohen

Session 3: Wednesday, September 3, 2025

SCHEDULE (Mexico City Time, CT)	TOPIC	TARGET AUDIENCE	INSTRUCTOR
08:00 - 16:00 Hrs. (CT)	**Day 5: Vulnerability Assessment** 1. Lecture: "Introduction to Vulnerability Assessment." 2. Workshop: "Defining a Vulnerability Equation." 3. Hands-on activity: Data collection, modeling, and mapping. 4. Interpretation and application of vulnerability maps.	All participants	Dr. Gabriel Díaz Padilla

Session 4: Thursday, September 4, 2025

SCHEDULE (Mexico City Time, CT)	TOPIC	TARGET AUDIENCE	INSTRUCTOR
08:00 - 16:00 Hrs. (CT)	**Day 6: Forecasting Models and Weather Forecasts** 1. Lecture: "Introduction to Forecasting Models." 2. Workshop: "Short-Term Forecasting Services." 3. Hands-on activity: Short-, Medium-, and Long-Term Weather Forecasts. 4. Web Services Leverage: Practical applications.	All participants	Dr. Victor Rodríguez

SCHEDULE (Mexico City Time, CT)	TOPIC	TARGET AUDIENCE	INSTRUCTOR
08:00 - 16:00 Hrs. (CT)	**Day 7: Agroproductive Potential** 1. Lecture: "Assessing Agroproductive Potential: Concepts and Tools." 2. Hands-on activity: GIS and remote sensing for crop suitability. 3. Field visit: Coffee cultivation at INIFAP's experimental site**.**	All participants	Dr. Nuria Aide López Hernández

10.   Eligibility and Procedures

10.1. Nominee Qualifications

Applying organizations must select nominees who meet the following criteria:

11. Current Duties:

• Professionals actively engaged in environmental management, sustainable development, conservation, or related fields (e.g., forestry, agriculture, climate policy, biodiversity protection).
• Practitioners with hands-on experience addressing climate change adaptation/mitigation, deforestation, or ecosystem restoration.

11.1 Educational Background:

• Bachelor's or higher degree in Biology, Agronomy, Environmental Science, Forestry, Ecology, or a related discipline.

11.2 Age:

- Open to all ages (preferably between 25–50 years).

12. Language Proficiency:

- Fluent in English to actively participate in coursework, discussions, and submit written assignments.

13. Technical Requirements:

- Basic computer literacy: MS Office (Word, Excel), email, and virtual collaboration tools (Zoom, Teams).
- Familiarity with GIS software, data analysis tools (R, Python), or remote sensing is a plus (optional).

2025
Año de
La Mujer
Indígena

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