Integrated watershed management with social approach

Experimental Center at Chiapas

Program from 22 to 28th September, 2026

I. Background

Integrated watershed management with social approach

The Sierra Madre, at Chiapas state in Mexico, suffered anthropogenic deterioration at the upper parts of the basins causing severe consequences when extreme hydrometeorology events. Mitigation and adaptation strategies are required to guarantee life, food security, water supply and local economic development.

An integrated proposal of development that considers the river basin as a planning unit has been implemented at the rural contexts of the Sierra Madre of Chiapas since 2011. This approach improved the capacity of population to adaptation and mitigation of climate change (CC) effects since it considered not only the environment as a natural resource's supplier but the family needs, livelihoods, and the development of human and social capital. The model constructed a planning process one on one with the basin population and the support of a public and private financing mechanism that guarantees medium- and long-term activities.

This proposal considers the review step by step of the methodology as well as an example of its implementation.

II. Objectives

1. Transmitting to the attendee the basic concepts of integrated management of watersheds (Characterization and monitoring).
2. Transmitting to the attendee tools for increasing social cohesion at a watershed that will ease environmental actions.

III. Goals

The implementation of the methodology for an integrated watershed management with social approach at different rural contexts.

IV. Expected results

1. At the end of the training, the attendees will structure a management plan of a watershed with social sense.

¿For whom?

Biologist, hydrologist, technicians at conservations organizations, government workers.

V. Description

The capacitation is divided into four segments. The first one attended to the environmental context and legal aspects. The second develops the biophysics and socioeconomic characteristics of the basin and the third one considers the watershed as a unit of planification. Finally, a field visit will show the implementation of the methodology.

The topics of biophysic and socioeconomy characterization focus on determining the base line of a watershed diagnosis before an intervention of environmental activities. It is necessary for attendees to have geographic information system notions, statistical and survey notions.

VI. General information

Time frame

22 to 28th September of 2026

Location site

Experimental Center at Chiapas (CECECH)

Language

English

Modality

Presence-based

Capacity

5 entries

VII. Eligibility

1. Assistant expectation

It is expected that assistants have a participative, respectful, and committed attitude.

2. Requirements for applicants

Interested parties must meet the following requirements:

1. People who are dedicated to conservation, hydrology and biology.
2. People who are in charge of natural resources protected areas, conservation and social development, non-profit organizations related to natural resources management.
3. Experience in geographic information system, hydrology, natural resources management, social programs.
4. Minimum level of education of the participant: University degree
5. Age: 25 to 60 years.
6. Health: no medical condition that prevents the performance of field activities, measles vaccine.
7. Language: English, Spanish.
8. Participants must bring laptop.
9. Software skills: geographic information systems (ArcGIS, QGIS), word, excel.
10. Gender: INIFAP promotes gender equality. The application of women to training is encouraged.

3. Assistance conditions

Assistants must:

1. Have the acceptance letter.
2. Meet the schedule of the training.
3. Leaving the state is not allowed during the training period.
4. Do not bring or invite any additional members to the registered one.
5. Follow the instructions and conditions stipulated.

VIII. Information about the training center

INIFAP is an institution with campus at every state of Mexico and Experimental Unite at Chiapas (CECECH) is one of them. This campus specializes at integrated management of watershed, conservation agriculture, socioeconomy, meteorological monitoring and agrosilvopastoral systems.

CECECH-INIFAP is committed to the training of technicians, students and local producers in conservation practices of soil, water and environment as well as the development of social and economic capital at urban and rural areas. It also cooperates with non-governmental organizations (The Nature Conservancy, FONCET) as well as universities, local producers' organizations and seed industry.

Other important information

1) Special clothes: water boots, waterproof jacket, hat, mosquito repellent.

2) Weather: The predominant one on the date of the training.

IX. Información sobre la Organización / Institución del Capacitado

(En escrito libre se podrá solicitar, si el capacitador así lo decide:)

X. Information about the trainer staff

Itzel Castro Mendoza is a researcher of the integrated watershed management program at INIFAP. Since 2013, She has developed projects of watershed management and ecosystem services in the state of Chiapas such as the water quality program at the Suiza Microbasin, or the determination conservations sites to reduce erosion and sediment contribution in priority sub-basins for the provision of water environmental service with the Water

Seed Fund.

Throughout her career, she has combined researching activities with the training of students, technicians and local producers in topics of ecotechnologies, geographic information systems, weather monitoring and environmental resources assessments; as well as directing bachelor´s thesis.

Gerardo Colín García is a researcher of the integrated watershed management program at INIFAP. He specializes in irrigation and hydraulic modeling.

Eileen Salinas Cruz is a researcher of the socioeconomy program at INIFAP. She specializes in economic evaluation of technologies, value chains and green economy.

SECRETARÍA DE AGRICULTURA Y DESARROLLO RURAL

AGENCIA MEXICANA DE COOPERACIÓN INTERNACIONAL PARA EL DESARROLLO

INSTITUTO NACIONAL DE INVESTIGACIONES FORESTALES, AGRÍCOLAS Y PECUARIAS

PROYECTO DE COOPERACIÓN BILATERAL:

Integrated watershed management with social approach

MÉXICO

ACTIVIDAD LIGADA A LOS TÉRMINOS DE REFERENCIA:

Sustainable management of resources for social development

CAPACITACIÓN Y ASISTENCIA TÉCNICA:

Integrated watershed management with social approach

INSTITUCIÓN EJECUTORA:

INSTITUTO NACIONAL DE INVESTIGACIONES FORESTALES, AGRÍCOLAS Y PECUARIAS (INIFAP)

MODALIDAD Y SEDE DE LA CAPACITACIÓN:

On-site training (México-Chiapas)

FECHAS: September 22 to 28th, 2026

PROGRAMA DE TRABAJO

INTEGREATED WATERSHED MANAGEMENT WITH SOCIAL APPROACH

INTRODUCTION

Watershed management has traditionally been understood as a tool only for conservation, nevertheless it is a way for sustainable use of resources and social cohesion. By 2020, 30 million of people in Mexico lived with some social vulnerability (IMCO, 2021) and the most affected state is Chiapas where 76% of its population live in poverty conditions (CONEVAL, 2020).

The economic and social lag determines the conservation practices at Chiapas where rural population based its food safety on a low yield rainfed agriculture that used burning for open more and more land in order to fulfil food necessities, this behavior is repeated at urban areas where population lived at extreme hot temperature conditions in inadequate dwellings so they appealed to illegal connections to electricity supply for cooling homes.

The management of resources at watersheds that lack social participation induced the imbalance and eventual environmental destruction. This course is focused on providing the basic conceptual tools for watershed management and planification to integrate the inhabitants of a basin to environmental activities.

TRAINING OBJECTIVES

1. Transmitting to the attendee the basic concepts of integrated management of watersheds (Characterization and monitoring).
2. Transmitting to the attendee tools for increasing social cohesion at a watershed that will ease environmental actions.

EXPECTATIVES

At the end of the training, the attendees will structure a management plan of a watershed with social sense.

RESEARCHERS

NOMBRE/CORREO	ESPECIALIDAD	ADSCRIPCIÓN	PAÍS

PhD. Itzel Castro Mendoza Researcher castro.itzel@inifap.gob.mx	Integrated watershed management	Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias (INIFAP) Centro de Investigación Regional CIRPAS Campo Experimental Centro Chiapas.	México
MSc. Eileen Salinas Cruz Researcher eileen.salinas@inifap.gob.mx	Socioeconomy	Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias (INIFAP) Centro de Investigación Regional CIRPAS Campo Experimental Centro Chiapas.	México
PhD. Gerardo Colín García Researcher castro.itzel@inifap.gob.mx	Integrated watershed management	Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias (INIFAP) Centro de Investigación Regional CIRPAS Campo Experimental Centro Chiapas.	México

PROGRAM

INTEGREATED WATERSHED MANAGEMENT WITH SOCIAL APPROACH

Segment 1. Environmental context and right

Objective: To raise awareness between attendees about environmental degradation and its social implications.

Teaching extent: Segment 1 consider the relation of climate change and the water world crisis with the environmental human right to water and the social and legal implications in Mexico.

Session 1: Tuesday 22th, September 2026

HORARIO	TEMA	DIRIGIDO A	INSTRUCTOR
09:00 to 10:00	1. Climate Change and water crisis.	Technicians	Itzel Castro Mendoza
10:00 to 11:00	2. Environmental human right to water	Technicians	Itzel Castro Mendoza
11:00 TO 12:00	3. Water legislation in Mexico	Technicians	Itzel Castro Mendoza
12:00 to 12:15	Break		

Segment II. The watershed and its characteristics

Objective: 1) The attendees can delimit a watershed and identify its characteristics and types. 2) The attendees acquired the capabilities to realize a comprehensive characterization of the watershed.

Teaching extent: Segment I addresses the concepts and methodologies of a biophysical characterization of watersheds. The topics focus on determining the base line of a watershed diagnosis before an intervention of environmental activities. It is necessary for attendees to have geographic information system notions, statistical and survey basis.

Session 1: Tuesday 22th, September 2026

HORARIO	TEMA	DIRIGIDO A	INSTRUCTOR
12:15 a 13:00	1. Definition of territory and watershed	Technicians	Itzel Castro Mendoza
13:00 to 14:00	2. Types of watersheds	Technicians	Itzel Castro Mendoza

Session 2: Wednesday 23 th, September 2026

HORARIO	TEMA	DIRIGIDO A	INSTRUCTOR
09:00 a 10:00	1. Watershed delimitation of Mexico	Technicians	Itzel Castro Mendoza
10:00 to 11:00	2. The water cycle in the watershed	Technicians	Itzel Castro Mendoza
11:00 to 12:00	3. Watershed delimitation using SIG	Technicians	Gerardo Colín García
12:00 to 12:15	Break		
12:15 to 14:00	4. Watershed morphometric indicators using SIG	Technicians	Gerardo Colín García

Session 3: Thursday 24th, September 2026

HORARIO	TEMA	DIRIGIDO A	INSTRUCTOR
09:00 a 11:00	1. Biodiversity watershed characterization	Technicians	Itzel Castro Mendoza
11:00 to 12:00	2. Soil watershed characterization	Technicians	Gerardo Colín García
12:00 to 12:15	Break		
12:15 to 14:00	3. Social watershed characterization	Technicians	Eileen Salinas Cruz

Session 4: Friday 25th , September 2026

HORARIO	TEMA	DIRIGIDO A	INSTRUCTOR
09:00 a 10:00	1. Productive watershed characterization	Technicians	Eileen Salinas Cruz
10:00 to 12:00	2. Socioeconomic evaluation of conservation practices. SROI methodology	Technicians	Eileen Salinas Cruz

Segment III. Watershed planification

Objective: 1) The attendees apply the information collected in the characterization to perform a participative planification.

Teaching extent: Segment III addresses the concepts and methodologies of the integration of information with planification. The topics focus on exploring the participative techniques for social involvement in the conservation of the watershed.

Session 4: Friday 25th , September 2026

HORARIO	TEMA	DIRIGIDO A	INSTRUCTOR
12:00 to 12:15	Break		
12:15 to 14:30	3. The watershed as the planification unit	Technicians	Itzel Castro Mendoza

Segment IV. Practice

Objective: 1) The attendees apply the scheme of integrated management at a microbasin choose by the work group. 2) Visit to the microbasin of Tiltepec.

Teaching extent: Segment IV considere the visit to Tiltepec´s microbasin so attendees will recognize the methodology applied at a real context.

Session 5: Monday 28th , September 2026

HORARIO	TEMA	DIRIGIDO A	INSTRUCTOR
07:00 to 14:00	Visit to Tiltepec's Microbasin	Technicians	Itzel Castro Mendoza Gerardo Colín García Eileen Salinas Cruz