

## The Training Office

The main function of the **Training Office** is to respond to SINAPROC requests regarding training, through the organization and carrying out of courses related to the technical aspects of disaster prevention, and the operative and regulating aspects of civil protection.

The Training Office is made up of two Areas:

- ♦ Civil Protection Training
- ♦ External Plan for Radiological Emergency (PERE) Training

The objective of the **Civil Protection Training Area** is to coordinate and carry out courses related to the different organizations and Governmental Offices of the public, private and social sectors, which are responsible for civil protection and disaster prevention activities. This Area is oriented towards the development of specialized technical-operative staff, instructor, volunteer groups, Non Governmental Organizations and the population who are interested in these subjects.



It is suitable to point out the National Instructors Program on Civil Protection, which is aimed at institutionalizing training at the State and Municipal Levels, in order to establish a greater local capacity to multiply related knowledge.



integrate task forces and are responsible for a timely response in case of an eventual accident originated at the Laguna Verde Nuclear Power Plant.

The **External Plan for Radiological Emergency (PERE) Training Area** is in charge of evaluating specific training needs for the staff participating in PERE, and coordinating specialized training and exercising of people that

## The Dissemination Office

The **Dissemination Office** is aimed at divulging knowledge on perturbing phenomena, technological development, and preparedness measures for risk reduction. This Area's results are directed to all population sectors, through editorial-audiovisual products and exhibitions. Such results include studies carried out by CENAPRED. The Area also promotes shared responsibility among media regarding conscience, encouragement and promotion of a prevention culture.

The Dissemination Office is made up of three Areas:

- ♦ Editorial
- ♦ Design and Logistics
- ♦ Documentation and Media

The **Editorial Area** is in charge of producing and editing specialized publications, as well as technical and general documents, in order to promote a culture for disaster hazards reduction and civil protection among several sectors of the population.

This Area is responsible for distributing publications, as well as publishing and updating them in an electronic format for the web page of CENAPRED.

The **Design and Logistics Area** is in charge of the graphic design of publications, identity image of events (courses, seminars, workshops) related to disaster prevention and civil protection, and exhibitions with emphasis on measures the population needs to know before, during and after a disaster occurs.

It is also responsible of operating and administrating the audiovisual equipments used to support the different courses and events carried out at CENAPRED or in which its staff takes part.

The main activity of the **Documentation and Media Unit** is to continuously integrate and update the newspaper, library, audiovisual and electronic collection, in order to divulge knowledge on disaster prevention and civil protection.



## The Technical Services Office

The **Technical Services Office** is aimed at supporting and strengthening the technical, scientific and academic functions -regarding disaster prevention- developed by the main Areas of CENAPRED, in order to promote their linking to the different sectors and ambits of the Federal Government and abroad, through cooperation contracts and agreements.

It is also responsible for analyzing the organization aspects of CENAPRED to improve and optimize its organizational and functional development. This Office attends to and provides the programmatic information requested by the normative areas of the Ministry of the Interior, and supervises the development of special projects and programs. Besides, it attends to the legal matters required by the Center.

The Technical Services Office is made up of three Areas:

- ♦ National and International Affairs
- ♦ Organization and Project Control
- ♦ Legal Affairs

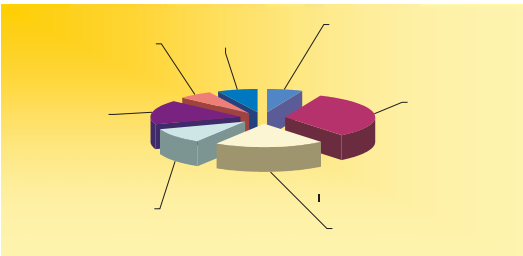
## The Administrative Office

The **Administrative Office** is mainly aimed at planning, effecting, supervising, evaluating and controlling activities for an efficient administration of the human, financial, material and service resources assigned by the Ministry of the Interior for CENAPRED functioning.

The Administrative Office is made up of two Areas:

- ♦ Financial Resources
- ♦ Material Resources

DISTRIBUTION OF CENAPRED STAFF



### Large Structures Laboratory

This laboratory allows the construction of full-scale structures up to three floors, and their test before different load types, in order to evaluate their structural safety. In this place, emphasis is made on experiments that simulate the effects of earthquakes. The Laboratory is complemented by equipment for building materials testing.



### Instrumentation and Monitoring Laboratory



The main functions of this laboratory are to gather, process and catalogue information from the different natural phenomena monitoring networks operated by CENAPRED. In particular, the monitoring of the Popocatepetl, Citlaltépetl (Pico de Orizaba) and Chichón volcanoes is carried out, as well as the processing of data obtained by the Seismic Observation Network of CENAPRED. This Laboratory permanently operates 24 hours a day.

### Environmental Samples Laboratory

In this laboratory, the analysis of environmental samples of soil and water will be carried out, in order to identify substances that may affect people's health and the environment, as well as research on alternatives to prevent such affectations.

### Soil Dynamics Laboratory

This laboratory has modern equipments for determining the dynamic properties of soils. Among these equipments, it is suitable to point out the triaxial chambers: the resonant column chamber and the cyclic torsion chamber. With these chambers it is possible to obtain the necessary properties to determine the response of a soil deposit before earthquakes, as well as their interaction with foundations.



### Computer Laboratory

This laboratory has a computing infrastructure to maintain and administer the data network of CENAPRED. The web page supports the development of programs and applications for the different Areas of CENAPRED, and thus electronic services are provided to all the staff. It also has working stations, servers and personal computers dedicated to process and store data.

## Auditorium, Library and Exhibition Area

The **Auditorium** has a capacity for 204 people, where seminars, conferences and other official and academic acts are carried out. The **Exhibition Area** is located at the lower lobby of the auditorium.

The **Documentation Unit** is located on the first floor of the main building, and it provides services to the public during working hours and days.

## Training Rooms



CENAPRED has two training rooms fully equipped for courses and seminars, with a joint capacity for 90 people.

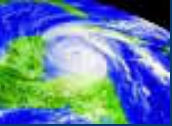
## Facilities

CENAPRED buildings are located within the main campus of the National Autonomous University of Mexico (UNAM). The total area of the plot of land is 15,303 m<sup>2</sup>, and the construction area is 3,980 m<sup>2</sup>.



**Secretaría de Seguridad y Protección Ciudadana**  
**Coordinación Nacional de Protección Civil**  
Centro Nacional de Prevención de Desastres  
Av. Delfín Madrigal 665, Col. Pedregal de Santo Domingo, Coyoacán,  
Ciudad de México, C.P. 04360  
www.gob.mx/cenapred

## NATIONAL CENTER FOR PREVENTION OF DISASTERS



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## Background

Due to the catastrophic consequences of the 1985 earthquake in Mexico, several initiatives arose to establish an institution aimed at studying the technical aspects of disaster prevention.

On one side, the Federal Government undertook the task of establishing the National Civil Protection System (SINAPROC).

On the other side, the Government of Japan offered its support to improve existing knowledge related to earthquake disaster prevention.

Finally, the National Autonomous University of Mexico (UNAM) participated in the project by incorporating high-level academic staff to carry out activities regarding research and technological development on disaster prevention.

The three initiatives concurred with the establishment of the National Center for Disaster Prevention (CENAPRED), on September 19, 1988, as a deconcentrated administrative organization, hierarchically subordinated to the Ministry of the Interior, through the General Coordination of Civil Protection, which is also integrated by the Civil Protection Head Office and the Natural Disaster Fund. With the economic and technical support provided by Japan CENAPRED facilities were built and equipped, and UNAM provided the plot of land for their construction through a Commodatum Agreement. The Ministry of the Interior provides necessary resources for operating this Center.

CENAPRED was inaugurated on May 11, 1990.

## Objetive

Within its functions' framework related to SINAPROC, the main objective of CENAPRED is *"to promote the application of technologies for disaster prevention and mitigation; give related professional and technical training; and disseminate preparedness and self-protection measures among the Mexican society exposed to the contingency of a disaster"*.

## Main Functions



Research



Instrumentation



Dissemination



Training



## Collaboration with UNAM

CENAPRED and UNAM carry out joint research projects; also, UNAM participates in the Technical Advising Committee of CENAPRED.

The Agreement signed by both Institutions guarantees the contribution of high-level university academic staff to the activities carried out at this Center on research, technological development, training and dissemination.

## Organization

CENAPRED is organized into one Head Office and five Offices. Four of these Offices are in charge of the main activities, and one gives support to the technical, academic and institutional activities.

As a high-level organization, CENAPRED has a Governing Board headed by the Minister of the Interior and integrated by representatives from Ministries, Agencies and Organizations with responsibilities concerning disaster prevention and emergencies attention.

## Advising Scientific Committees

On June 6 1995, the **Advising Scientific Committees of the National Civil Protection System** were created as technical consultation organizations for preventing disasters caused by geological, hydrometeorological, chemical, health and man-made phenomena. Their function is to give opinions and recommendations through CENAPRED, as the Technical Secretary, in order to technically guide authorities for decision taking.

## The Research office

The **Research Office** performs and coordinates research on the origin, behavior and consequences of natural and man-made phenomena causing disasters. This research outcome influences technological development, hazard identification, disaster risk reduction, warning, and strengthening of the civil protection culture.

This Office also acts as an interface between the civil protection systems -at the three governing levels-, universities and the most acknowledged research organizations in Mexico and abroad. This function allows authorities responsible for protecting the population to have access to front information and methodologies regarding several aspects of risks and their reduction.

The Research Office is made up of six Areas:

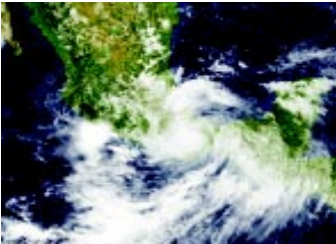
- ◆ Geological Risks
- ◆ Structures and Geotechnics
- ◆ Hydrometeorological Risks
- ◆ Chemical Risks
- ◆ Economic and Social Studies on Disasters
- ◆ Risk Information System



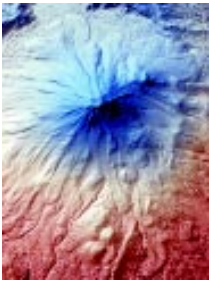
The **Geological Risks Area** centers its research lines in the study of earthquakes, volcanic activity, instability of surface masses, and other related phenomena and risks represented by such phenomena in different parts of our Country.

Applied research, methodologies development for evaluating hazards resulting from these phenomena, and the implementation of corresponding maps, as well as the generation of basic material for a wide dissemination of results, are important activities in this Area.

The **Structures and Geotechnics Area** develops research programs applied to structure vulnerability reduction, particularly before earthquakes and landslides. Part of these programs is carried out at the *Large Structures Laboratory* and the *Geotechnics Laboratory*, both considered among the most important laboratories in Latin America. Results of these projects are effectively applied in our Country and printed in related standards.



The **Hydrometeorological Risks Area** focuses on the study of hurricanes, floods, freshets and other phenomena that frequently affect our Country. Effective methodologies to prognosticate and face these calamities are the result of the research programs. One example is the warning systems in high-risk cities in Mexico.



The **Risk Information System Area** integrates geo-space information on hazard, vulnerability and risk diagnosis in the Country, in order to support civil protection authorities on decision taking, and implement disaster prevention and mitigation measures.

The **Chemical Risks Area** is responsible for evaluating the different effects caused by accidents such as hazardous substance spills or leaks, industrial explosions and other phenomena derived from human activities that are potentially catastrophic, such as contamination. Important results from the activities carried out in this Area, reflect on related standards.



The Area has a *Chemical Risk Laboratory* where environmental samples analyses of soil and water are carried out to identify substances that may affect people's health and the environment.



The **Economic and Social Studies on Disasters Area** develops evaluation studies on the economic and social impact of disasters. From these studies, it is possible to identify the material costs, both direct and indirect, as

well as the consequences in the regional and national economic variables. Results are of great usefulness to design strategies for reducing vulnerability and risk.

## The Instrumentation and Computer Office



The **Instrumentation and Computing Office** is responsible for designing, installing, coordinating, operating and maintaining instrument networks for monitoring and warning on natural phenomena. This Area has mainly directed its efforts to the monitoring of active volcanoes, the seismic instrumentation of soils, buildings and structures, and the monitoring and warning on hydrometeorological phenomena. It also includes the development of information technologies for processing and interpreting gathered data, the creation of databases and the dissemination of such information. Additionally, it gives technical and information support to all Areas of CENAPRED.

The Instrumentation and Computing Office is made up of four Areas:

- ◆ Volcanic Monitoring
- ◆ Seismic Instrumentation
- ◆ Hydrometeorological Instrumentation
- ◆ Computing

The **Volcanic Monitoring Area** designs, implements and, in its case, operates specialized instrument networks for monitoring and observing the Popocatépetl volcano and other active volcanoes in Mexico, in order to timely warn and inform authorities and the population on changes observed in the volcanic activity that may imply a hazard condition.



The **Seismic Instrumentation Area** is in charge of developing, studying and measuring seismic activity, as well as operating instrument networks to monitor soils and structures behavior before strong earthquakes. Also, this Area gives instrumental support for evaluating and attending emergencies caused by earthquakes.

The **Hydrometeorological Instrumentation Area** develops new technologies for observing and warning on hydrometeorological and environmental phenomena, in order to support decision taking carried out by civil protection authorities, and warn hazard prone populations on such phenomena and their consequences.



The **Computing Area** is in charge of implementing solutions based on computer science technologies for administration, development of programs and tools, transportation, databases, and information storing and processing, all related to disaster prevention and phenomena monitoring carried out at CENAPRED.