



Risk Assessment and Capacity Development in Costa Rica

Capacity Development Report

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Prepared for:



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1 INTRODUCTION

The Global Risk Modelling Alliance (GRMA) program, sponsored by the InsuResilience Solutions Fund (ISF) and funded by the German government, aims primarily to strengthen the capacity of countries and cities in finance-oriented climate and disaster risk analysis, co-defining the specific needs of each country together with local partners.

Within this framework, Ingeniar Risk-Intelligence and CIMNE lead the implementation of the GRMA Costa Rica project, which comprises four sectoral risk assessment projects and a cross-cutting capacity development component:

- **Strategic Project:** probabilistic risk assessment for riverine flooding, pluvial flooding, and seismic hazard affecting the critical infrastructure of the canton of Heredia.
- **Operational Project 1:** disaster and climate risk assessment for road infrastructure, with emphasis on National Route No. 2 – Panamerican Highway South (RN2).
- **Operational Project 2:** climate risk assessment for flooding and drought in the agricultural and livestock sector, applied to the national portfolio of coffee, sugarcane, and extensive cattle ranching.
- **Operational Project 3:** climate risk assessment in the tourism sector (Futurismo Project).

The cross-cutting capacity development component aims to equip the national experts involved in the project with the knowledge and tools needed to: interpret risk analysis results; maintain and update data and information beyond the life of the project; and apply these results in risk management, financing, and insurance activities. This component responds to the guidelines established in the project's Terms of Reference, which prioritize the transfer of technical capacities and the strengthening of institutional capacity to use risk information in decision-making.

This document corresponds to the Capacity Development Report, deliverables **9a, 9b, 9c, 9d, and 9e** of the Terms of Reference. The report documents all training activities carried out during the implementation of the GRMA – Costa Rica program, including the asynchronous risk modeling course, in-person workshops with practical sessions, virtual technical transfer sessions, and the initial and final self-assessments completed by participants. For each activity, the objectives, content, specific results, and participation levels are presented.

The capacity development component is structured primarily around the *Probabilistic Disaster Risk Modelling Course*, complemented by institutional coordination sessions, with the objective of strengthening the ability of technical stakeholders to interpret risk results, manage and update exposure information, and use these results as inputs for decision-making related to financial protection mechanisms and resilience planning across the different sectors.

2 CAPACTIY DEVELOPMENT ACTIVITIES

The capacity-building program was structured around three complementary components designed to progressively develop technical understanding, practical application skills, and institutional integration across all participating entities. Each component addresses a different stage of the learning process and responds to a specific need within the overall objective of strengthening local capacities in probabilistic risk assessment and risk-informed decision making.

The first component consists of an asynchronous virtual course aimed at providing the fundamental concepts and minimum technical competencies required to understand disaster risk, probabilistic risk modelling, and the scientific and technical principles that underpin the different stages of the modelling framework. This component establishes a common technical baseline among participants, allowing individuals with diverse backgrounds and institutional roles to acquire a shared understanding of hazard, exposure, vulnerability, uncertainty, and risk metrics. The asynchronous format enables participants to progress at their own pace while ensuring that subsequent interactions can focus on application-oriented discussions rather than introductory concepts.

The second and third components are designed to translate this foundational knowledge into practical implementation within the GRMA context. Targeted virtual working sessions are conducted separately with the technical groups associated with each of the four GRMA projects, using the specific objectives defined in the Terms of Reference as the central framework for discussion. These smaller and highly interactive sessions serve as a mechanism to contextualize and operationalize the concepts introduced in the virtual course, directly linking theoretical principles to project-specific applications, datasets, methodologies, and expected outputs. In parallel, general dissemination workshops provide a broader integration platform where project teams not only discuss technical progress but also understand how each individual project contributes to the overall development of the GRMA program in Costa Rica. Together, these two components create a bidirectional learning process in which project-level implementation is continuously connected to the broader programmatic vision, reinforcing consistency, knowledge transfer, and institutional ownership across all participating stakeholders.

2.1 Asynchronous course on Probabilistic Disaster Risk Modelling

2.1.1 Description

The asynchronous Probabilistic Disaster Risk Modelling course is the central pillar of the capacity development component of the GRMA Costa Rica project. Developed and implemented by Ingeniar Risk-Intelligence and CIMNE, the course runs for approximately 24 weeks, with an estimated dedication of two hours per week, and is offered in asynchronous format through the Canvas platform. In addition to theoretical content in video format, participants have access to the open-access CAPRA ROBOT software platform for completing practical exercises and tutorials.

The course began on March 18, 2025, and concluded on April 27, 2026. However, it was agreed to extend participants' access to course materials for **three additional months** from the official end date of the course.

2.1.2 Objectives

The main objective of the course is to provide participants with the scientific foundations needed to execute and understand risk modelling and its results, so that they are able to conduct disaster risk assessments for various natural hazards using advanced tools within the CAPRA ROBOT system. The specific objectives, aligned with GRMA's capacity development guidelines, are:

- To acquire sufficient knowledge of the process applied during project implementation and to develop the ability to interpret its results.
- To support the development of the capacity to maintain and update hazard, exposure, vulnerability, and risk data and information beyond the duration of the project.
- To apply results in disaster and climate risk management, financing, and insurance activities, as well as to use them as evidence in funding applications.
- To expand knowledge of results as part of work on climate change impacts at the national level.
- To build confidence in managing similar work in the future.

The objectives listed in this section were defined in the GRMA Terms of Reference and are therefore reproduced here as the reference framework for evaluating the outcomes of the capacity-building program. It should be noted that the Terms of Reference establish that participants are expected to achieve at least one of the listed objectives, rather than all of them simultaneously. Consequently, the degree of achievement naturally varies across institutions and participants, which is consistent with the differences in technical backgrounds, institutional roles, and time availability for engagement in program activities. Under these conditions, the program is considered to have successfully met its intended objectives, while acknowledging that the level and nature of the outcomes are inherently heterogeneous among participating entities.

2.1.3 Content

The course is structured into three modules:

Module 1: General Foundations of Probabilistic Risk Assessment. Covers the essential concepts of probabilistic risk assessment through five units: introduction to the conceptual framework, metrics and retrospective assessment, analytical [CAT] risk assessment, and exposure modelling. This module is divided into the units presented in Table 1.

Table 1. Units and activities of module 1

Unit / Activities	Content
1	Introduction to disaster and risk management
2	Conceptual framework for risk assessment
3	Point estimate risk metrics and retrospective assessment
Practical exercise	Risk metrics calculation exercise
4	Analytical assessment
5	Exposed elements

Unit / Activities	Content
Module 2 registration	Registration form

Module 2: Natural Hazard Modelling and Vulnerability of Exposed Elements. Organized into six submodules corresponding to the hazards covered in the course: earthquake, volcanoes, tropical cyclones, landslides, flooding, and drought. The tables below present the units into which each hazard submodule is divided.

Table 2. Units and activities of module 2

Tropical cyclones	
Unit / Activities	Content
1	Basic concepts of climate change
Practical exercise 1	Climate change data download
2	Structure and formation of tropical cyclones
3	Effects of tropical cyclones
Practical exercise 2	Creating tropical cyclone track files
4	Probabilistic tropical cyclone hazard assessment
Practical exercise 3	Hurricane wind hazard modelling
5	Damage models: fragility and vulnerability functions
6	Wind and flood vulnerability
Practical exercise 4	Hurricane wind vulnerability exercise
Practical exercise 5	Hurricane wind risk calculation exercise
Landslides	
Unit / Activities	Content
1	Basic concepts of climate change
Practical exercise 1	Climate change data download
2	Integration of climate change in hydrometeorological hazard and risk modelling
Practical exercise 2	Climate series simulation exercise
3	Mass wasting processes
4	Landslide susceptibility
Practical exercise 3	Landslide susceptibility exercise
5	Damage models: fragility and vulnerability functions
6	Landslide hazard modelling
Practical exercise 4	Landslide risk calculation exercise
Flooding	
Unit / Activities	Content
1	Basic concepts of climate change
Practical exercise 1	Climate change data download
2	Integration of climate change in hydrometeorological hazard and risk modelling
Practical exercise 2	Climate series simulation exercise
3	Hydrological modelling
Practical exercise 3	Watershed hydrological modelling exercise
4	Hydraulic modelling
Practical exercise 4	Watershed hydraulic modelling exercise
5	Damage models: fragility and vulnerability functions
6	Flood vulnerability
Drought	
Unit / Activities	Content
1	Basic concepts of climate change
Practical exercise 1	Climate change data download
2	Integration of climate change in hydrometeorological hazard and risk modelling
Practical exercise 2	Climate series simulation exercise

3	Hydrological modelling
Practical exercise 3	Watershed hydrological modelling exercise
4	Drought types and indicators
Practical exercise 4	Drought index visualization exercise
5	Crop water response
6	Livestock carrying capacity
Practical exercise 5	Crop exposure and vulnerability modelling exercise in DroughtPro
Practical exercise 6	Probabilistic drought risk calculation exercise in DroughtPro
Earthquake	
Unit / Activities	Content
1	Basic concepts of seismology
Practical exercise 1	Seismic source analysis
2	Strong ground motion
Practical exercise 2	Signal processing exercise
3	Probabilistic seismic hazard assessment
Practical exercise 3	Seismic hazard modelling exercise in R-CRISIS
4	Site effects
Practical exercise 4	Soil dynamic response exercise
5	Damage models: fragility and vulnerability functions
6	Seismic vulnerability
Practical exercise 5	Seismic vulnerability exercise
Practical exercise 6	Earthquake risk calculation exercise
Volcanoes	
Unit / Activities	Content
1	Volcanism
2	Eruptive column collapse regime
3	Volcanic products modelling
4	Volcanic hazard
Practical exercise 1	Volcanic hazard modelling exercise in VHAIST
5	Damage models: fragility and vulnerability functions
6	Volcanic eruption vulnerability
Practical exercise 2	Volcanic ash vulnerability exercise
Practical exercise 3	Volcano risk calculation exercise

Module 3: Advanced Applications in Risk Management and Climate Change. Covers resilience modelling of Dynamic systems, holistic risk assessment, decision-making under deep uncertainty, and an introduction to catastrophe financial protection.

Table 3. Units and activities of module 3

Unit / Activities	Content
1	Infrastructure systems resilience modelling
2	Holistic risk assessment
3	Probabilistic risk assessment under deep uncertainty
4	Risk control engineering

2.1.4 Participants

A total of 60 participants enrolled from institutions across the public, academic, financial, and insurance sectors, including the Comisión Nacional de Prevención de Riesgos y Atención de Emergencias (CNE – National Commission for Risk Prevention and Emergency Response), the Superintendencia General de Seguros (SUGESE – General Insurance Superintendence), the Instituto Meteorológico Nacional (IMN – National Meteorological Institute), the Laboratorio Nacional de Materiales y Modelos Estructurales of the Universidad de Costa Rica (Lanamme-UCR – National Laboratory of Materials and Structural Models), the School of Geology of the Universidad de Costa Rica, the Banco Central de Costa Rica (Central Bank of Costa Rica), the Sistema de Banca para el Desarrollo (Development Banking System), the Ministerio de Agricultura y Ganadería (Ministry of Agriculture and Livestock), the Municipalidad de Heredia (Municipality of Heredia), the Instituto Nacional de Seguros (National Insurance Institute), GIZ, and various insurance companies such as MAPFRE, ASSA, Davivienda, Sagicor, Seguros LAFISE, and MNK Seguros, among others.

2.1.5 Application in the Context of the Sectoral Projects

The course is designed to respond in a cross-cutting manner to the technical needs of the four sectoral projects of the GRMA Costa Rica program. The following describes the relevance of the course content in relation to the specific objectives of each project.

2.1.5.1 Strategic Project – Critical Infrastructure of the Canton of Heredia

One of the central objectives of this project is to strengthen the capacity of the stakeholders involved to interpret the results of probabilistic risk analyses for riverine flooding, pluvial flooding, and seismic hazard affecting the canton's critical infrastructure, and to use that information in planning and risk management processes.

In line with this objective, Module 1 of the course provides the necessary conceptual foundation, introducing key metrics such as the Loss Exceedance Curve (LEC), the Average Annual Loss (AAL), and the Probable Maximum Loss (PML), which constitute the main outputs of probabilistic risk assessment and results interpretation. Module 3 further explores the application of these results in real-world contexts, incorporating approaches such as holistic risk assessment, infrastructure systems resilience modelling, robust decision-making under deep uncertainty, and risk control engineering. This content enables participants to understand how technical risk analysis results can be integrated into land-use planning, public investment, emergency management, and the design of adaptation and financial protection strategies, in line with the needs of the canton of Heredia and the institutional mandate of the CNE.

An equally relevant component of this project is the management of the exposure database. The project identified the need to strengthen local capacity to manage, update, and expand the infrastructure exposure database. Modules 1 (Unit 5) and 2 present the methodology for building exposure databases, including their physical characterization and economic valuation — competencies that are particularly relevant given that the cadastral database of the Municipalidad de Heredia, originally designed for tax purposes, requires a transformation process for use in probabilistic assessments. This process includes grouping plots by building and integrating physical variables such as structural type and construction

materials. This approach strengthens the ability of technical stakeholders to update exposure information and conduct spatial risk analyses independently, ensuring the sustainability of assessments beyond the duration of the GRMA project.

2.1.5.2 *Operational Project 1 – Road Infrastructure (RN2)*

Regarding the Operational Project 1 on road infrastructure assessment, capacity building is addressed primarily through the Modelling Course, which provides participants with the conceptual, methodological, and operational foundations needed to conduct quantitative risk assessments on road infrastructure, with an emphasis on event-based probabilistic approaches and the use of the CAPRA-ROBOT platform.

Module 2 is the most directly aligned with the technical content of the project: it covers the modelling of natural hazards relevant to road infrastructure — earthquake, riverine and pluvial flooding, landslides, and volcanoes — and trains participants to integrate linear infrastructure exposure databases with hazard and vulnerability models for estimating economic losses resulting from direct damage to strategic road corridors, which is precisely the scope of the analysis conducted on the RN2. To reach that point, Module 1 provides the necessary foundation: the fundamental concepts of probabilistic assessment, the role of hazard, exposure and vulnerability, and the risk metrics and their interpretation — LEC, AAL, and PML — that allow participants to understand the project outputs. Module 3, in turn, explores the use of those results in real-world decision-making contexts, a key aspect for enabling institutional stakeholders to translate technical analyses into concrete road risk planning and management actions.

2.1.5.3 *Operational Project 2 – Agricultural Risk*

This project focuses on the development of a methodology and tools for the quantitative estimation of losses associated with riverine flooding, pluvial flooding, and agricultural drought events, applied to the national portfolio of coffee, sugarcane, and extensive cattle ranching, primarily in the context of producers implementing sustainable practices under the framework of the Nationally Appropriate Mitigation Actions (NAMA) of the MAG. One of its main objectives, in relation to capacity development, was to strengthen the knowledge of technical stakeholders in interpreting the results of quantitative climate risk assessments and using them as inputs for decisions related to financial protection mechanisms in the sector.

Module 1 of the course introduces the fundamental metrics of probabilistic risk assessment that allow for the quantification of expected economic losses and the evaluation of the probability of exceeding certain impact thresholds, as well as the methodological foundations for building and integrating crop exposure databases — a process that, as addressed in the course, cannot be standardized but must be tailored to the particularities of each case. Module 2 develops the technical competencies for modelling the hazards considered in the project, including the integration of these exposure databases with hazard models in CAPRA ROBOT and the specialized DroughtPro tool for risk estimation.

Finally, Module 3 explores the use of climate risk results for decision-making related to financial protection mechanisms, covering concepts of resilience, comprehensive risk management, and the design of financial instruments. This content enables participants to understand how agricultural climate risk results can inform the design of risk transfer instruments and differentiated financing schemes, in line with the objectives of the Sistema de Banca para el Desarrollo (SBD) and the SUGESE regulatory framework.

2.1.5.4 Operational Project 3 – Tourism Sector

This project addressed the probabilistic risk assessment for earthquake, tsunami, and coastal, riverine, and pluvial flooding affecting the national portfolio of small and medium-sized hotels and hostels, with the objective of providing a technical basis for developing financial resilience options for the tourism sector in the face of disasters and climate change. The asynchronous course has a direct correspondence with the three central methodological components of this project.

Module 1 provides the conceptual foundations of probabilistic risk assessment and the key metrics of its outputs — the Loss Exceedance Curve (LEC), the Average Annual Loss (AAL), and the Probable Maximum Loss (PML) — which form the basis for interpreting the project's products. Unit 5 of this module, dedicated to building exposure databases, takes on particular relevance in the context of the Futurismo Project: since no consolidated database of small and medium-scale tourist accommodation establishments tailored for risk assessment existed, the criteria covered in the course — characterization of exposed elements, definition of their construction attributes, and association of vulnerability functions — are directly applicable to that process. Module 2, in turn, develops the technical competencies for modelling the hazards considered in the project and trains participants to integrate that exposure database with hazard and vulnerability models in CAPRA ROBOT in order to estimate losses at the portfolio level.

Finally, Module 3 explores the use of risk results for decision-making, covering concepts of resilience, comprehensive risk management, and holistic risk assessment, among others. This content enables participants to interpret the project results and understand their value as inputs for the design of financial protection instruments and for communicating risk to tourism establishment owners, in line with the project's objective of developing financial resilience options for the sector.

2.1.6 Results

Overall, 43 of the 65 enrolled participants completed Module 1, of whom 35 enrolled in Module 2. Of these, 17 completed at least one hazard submodule. Module 3, open to all enrolled participants, has been completed by 24 individuals. The table below presents the final status by module at course closure.

Table 4. Final results by module at course closure

Module	Total Enrolled	Total Active	Participants who completed >80%
Module 1 – Foundations	65	43	43
Module 2	35	29	17
Module 2 – Tropical Cyclones	20	16	7
Module 2 – Landslides	25	20	12
Module 2 – Flooding	29	24	9
Module 2 – Drought	21	15	5
Module 2 – Earthquake	19	13	4
Module 2 – Volcanoes	14	9	2
Module 3 – Risk Management	64	36	24

2.2 Virtual Sessions

Throughout the project, various virtual training and knowledge transfer sessions were held, aimed at participants of the Technical Working Group and the technical teams of the counterpart institutions of each operational project. These sessions addressed topics related to exposure models, the presentation and discussion of risk results, and specific methodological aspects of each project. The objective of these sessions was to enable local teams to replicate and update the process independently in the future, beyond the scope of the project.

2.2.1 Management and Updating of the Infrastructure Exposure Database

As part of the technical support process, meetings were held with the Technical Working Group of the canton of Heredia to explain the methodological process used to build the building and critical infrastructure database, as well as the criteria applied for its characterization and valuation within the probabilistic risk assessment.

A technical meeting was held with the Municipalidad de Heredia working team, led by the consulting team, in which the canton's building database was reviewed in detail and questions that had arisen during Workshop 2 were addressed, particularly regarding building height information. The session covered the need to transform and adjust the database developed by the Municipality, which was conceived primarily for cadastral and tax collection purposes and describes plots based on disaggregation by owner. Risk assessment, by contrast, requires not only location, quantity, and function, but also data on the construction characteristics of each element — structural type, materials, height, year of construction, among others — attributes that determine the associated vulnerability function and, with it, the relationship between event intensity and expected damage.

Drawing on the probabilistic risk assessment approach, which focuses on the building as the exposed element, the session explained the technical process required to group records corresponding to multiple plots that make up a single building, as well as, in specific cases, to disaggregate records when a single cadastral plot corresponds to several independent buildings. The meeting also clarified the conceptual and methodological distinction between the cadastral database used as an input and the exposed elements database required for risk analyses, integrating relevant physical variables such as structural type, wall materials, and construction condition. It is worth noting that much of this information is already available thanks to the solid work carried out by the Municipalidad de Heredia in collecting and systematizing cadastral data, which provides a fundamental foundation for the sustainability of risk assessments.

2.2.2 Technical Support for Road Infrastructure Risk Modelling

Within the framework of Operational Project 1, as part of the technical support and capacity building process, several sessions were held with the Lanamme-UCR working group aimed at resolving questions about the practical application of course content, procedures for developing the road infrastructure exposure model, and the general risk modelling process, covering everything from structuring the exposure database to obtaining results.

As an additional outcome of the training process, the Lanamme-UCR team independently developed a modelling exercise on National Route No. 34 (RN34), applying the methodological guidelines of the course. This exercise concretely illustrates the capacity acquired to independently replicate risk analyses on other strategic road networks across the country.

2.2.3 Agricultural and Livestock Exposure for Climate Risk Assessment

As part of the technical support for Operational Project 2, a virtual session was held on November 27, 2025, with the technical group associated with this project (representatives from MAG, SUGESE, SBD, and Global Risk Modelling Alliance - GRMA), aimed at presenting progress on the characterization of agricultural and livestock exposure and explaining the data preparation and transformation procedures required for use in risk modelling.

The session presented progress on building the exposure database for coffee and sugarcane crops, as well as for extensive bovine cattle ranching, reviewing the main available data sources: the VI National Agricultural and Livestock Census 2014, the 2023 National Agricultural and Livestock Survey, the Sistema Nacional de Información Territorial (SNIT – National Territorial Information System), agricultural, livestock, and forest land use maps, and sector-specific information from entities such as LAICA, ICAFE, and CCAFS. Drawing on these sources, the session explained the criteria for spatially locating crops and producers, defining units of analysis, and classifying producers by size.

A central aspect of the session was to highlight that building the exposure database is a process inherent to each case study and must be tailored to the specific characteristics of the project, the expected final product, and the available data. For this reason, in addition to explaining the considerations adopted for the crops analyzed, replicable criteria were identified for approaching this process with other agricultural and livestock commodities, in line with the objective of enabling local teams to update and expand the analyses independently.

2.2.4 Support for the Implementation of Results in the Fu-Turismo Platform

Various support and discussion sessions were held with the promoters of the Fu-Turismo platform, as well as with the developer, with the aim of implementing in it the results of the specific assessments carried out for the tourism sector as part of the consultancy's added-value outputs. A procedure was designed for the use and implementation of implicit risk and holistic assessment results in order to provide the Fu-Turismo platform with catastrophic risk communication tools for tourism operators, requiring minimal input from the user.

These sessions succeeded in consolidating the procedure and expected outcomes, as well as building the developer's understanding of what needs to be added to the platform in terms of software to enable implementation. Throughout the process, the aim was to keep the required additions to a minimum, ensuring the least possible impact on the platform's current operation while maximizing the benefit of incorporating these new results for the tourism sector in Costa Rica.

2.3 In-Person Workshops

Within the framework of the GRMA Costa Rica project, four in-person workshops were held with the objective of complementing the asynchronous course training process and facilitating technical exchange between the consulting team, the counterpart institutions, and the participants of the Technical Working Group. Each workshop combined progress review sessions by sectoral project with at least one capacity development session. The workshops are described below with emphasis on their knowledge transfer components. The final workshop agendas are included in Annex A.1.

Workshop 1 — Project Launch Workshop

March 18 - 21, 2025 | Hotel Parque del Lago, San José | In-Person

Objectives:

- Present the general work plan and objectives of each of the four sectoral projects.
- Introduce the conceptual foundations of probabilistic disaster risk assessment.
- Establish a common technical language between the institutional teams and the consulting team.

Content and development:

The workshop was held over four days, with sessions organized by operational project. The first day included a general session with the Technical Working Group and an introductory session for asynchronous course participants, presenting the fundamental concepts of probabilistic risk assessment, the project's methodological approach, and the course structure. The following days were organized into sessions specific to each sectoral project: road infrastructure (RN2), agricultural and livestock risk, Futurismo, and critical infrastructure in Heredia.

Results and participation:

The workshop brought together 40 attendees, representing SUGESE, the Municipalidad de Heredia, the Ministerio de Hacienda, MAG-SEPSA, Lanamme-UCR, the UCR School of Geology, IMN, CNE, GIZ, MNK Seguros, Sagicor, Seguros LAFISE, and the Ingeniar and CIMNE consulting team. This first interaction provided the opportunity to establish a common working framework, identify institutional expectations, and introduce the Canvas course platform to enrolled participants.

Workshop 2 — Hazard Modelling Practice

September 2 – 4, 2025 | Hotel Parque del Lago, San José | In-Person

Objectives:

- Review the progress status of the sectoral projects with the technical working groups.
- Conduct a hands-on hazard modelling session for asynchronous course participants.
- Strengthen technical competencies in the use of specialized tools, with emphasis on meteorological time series simulation for drought modelling.

Content and development:

The second workshop was held over three days. The progress review days included project-specific sessions with their respective technical working groups. The capacity development day was structured in two parts: a morning progress review session with the Technical Working Group and an afternoon hands-on session for asynchronous course participants. This practical session used the DroughtPro tool for meteorological time series simulation, complementing the content of Module 2 on hydrometeorological hazard modelling.

In addition to the three days indicated, a conference was held at Lanamme-UCR on September 5, focusing on real-world applications of disaster and climate risk modelling and management across Latin America. The conference showcased the types of applications expected to be developed within the GRMA program and beyond in Costa Rica. Attendees represented a broad range of institutions and included participants from all four GRMA technical projects.

Results and participation:

The practical session was attended by 52 participants, including representatives from SUGESE, Lanamme-UCR, the UCR School of Geology, MAG-SEPSA, SBD, CNE, IMN, the Municipalidad de Heredia, GIZ, the Banco Central de Costa Rica, the Ministerio de Planificación, insurance companies, and the consulting team. Participants had the opportunity to apply the content of the Drought submodule in a hands-on environment, deepening their understanding of climate time series simulation as an input for risk modelling.

Workshop 3 — Risk Modelling Practice and Results Review

January 27 – 30, 2026 | Hotel Parque del Lago, San José | In-Person

Objectives:

- Review the progress status and preliminary results of the sectoral projects with the technical working groups.
- Conduct a hands-on general risk modelling session with asynchronous course participants.
- Discuss replicability and sustainability strategies for risk analyses beyond the GRMA project.

Content and development:

The third workshop was held over four days. The first day was dedicated to a general session reviewing the project's progress status and a discussion workshop on project replicability and sustainability. The second day included a hands-on general risk modelling session for asynchronous course participants, with emphasis on data management for exposure, vulnerability, and hazard modelling. The third and fourth days were organized into sessions specific to each sectoral project: road infrastructure (RN2), agricultural and livestock risk, the Heredia Strategic Project, and Futurismo.

Results and participation:

The workshop brought together 37 attendees from institutions including SUGESE, the Municipalidad de Heredia, MAG-SEPSA, Lanamme-UCR, the UCR School of Geology, SBD, CNE, IMN, GIZ, ICT, the Ministerio de Hacienda, DCC-MINAE, insurance companies, and the consulting team. The hands-on session enabled

participants to consolidate their understanding of the complete risk modelling workflow, from database structuring to the interpretation of probabilistic results. The sustainability and replicability discussion was particularly valued by institutional teams, who identified concrete opportunities to apply the methodologies learned in contexts beyond the project.

Workshop 4 — Project Closure, Presentation of Final Results, and Project Sustainability

April 27 – 30, 2026 | Hotel Parque del Lago, San José | In-Person

Objectives:

- Present the final results and added-value outputs of each sectoral project to the technical working groups.
- Conduct a hands-on session on advanced post-processing tools and formally close the asynchronous virtual course.
- Discuss and consolidate sustainability strategies for results beyond the GRMA project.
- Present program results to the senior leadership of counterpart institutions, cooperating partners, and a broader audience.

Content and development:

The fourth workshop was held over four days. The first day's morning session was devoted to a sustainability workshop in which each working team presented the strategies defined for maintaining and updating results beyond the project. In the afternoon, the capacity development session took place, featuring a hands-on exercise in advanced post-processing tools that linked the training process content with the program's final products and their institutional applicability. This session also marked the formal closure of the asynchronous virtual course.

The second and third days were organized into sessions specific to each sectoral project — road infrastructure (RN2), agricultural and livestock risk, the Heredia Strategic Project, and Futurismo — each structured in two blocks: a presentation of project results and added-value outputs, and a capacity development session on advanced risk modelling applications. The fourth day included a morning executive results briefing for senior officials of the counterpart and cooperating partner institutions, and an afternoon expanded results dissemination session held at the SUGESE Auditorium, aimed at a broader audience.

Results and participation:

All stated objectives were successfully met, consolidating both the technical knowledge transfer and the institutional uptake of the results developed across the various projects, and in particular of the added-value outputs generated by the consultancy. Through the sessions held, the final results and added-value outputs of each project were presented, a hands-on capacity building activity on advanced post-processing tools was carried out, and the asynchronous virtual course was formally closed. Sustainability and continuity strategies were also discussed and consolidated, aimed at ensuring the results endure beyond the temporal scope of the GRMA program. Finally, the executive briefing and expanded dissemination

sessions allowed the program's main achievements and applications to be shared with counterpart institutions, cooperating partners, and a broader technical audience.

2.4 Initial Participant Self-Assessment

At the start of the project, 46 participants completed a self-assessment questionnaire with the objective of characterizing the group profile and establishing a baseline of knowledge and capacity levels in climate and disaster risk analysis.

2.4.1 Participant Profile

Of the 46 participants who completed the questionnaire, 29 identified as male (63%) and 17 as female (37%), with ages ranging from 26 to 62 years. 98% hold a technical role within their institution. The most represented organizations were Lanamme-UCR (7 participants), SUGESE (10 participants), CNE (4), Municipalidad de Heredia (4), MAG-SEPSA (4), and SBD (3), among others.

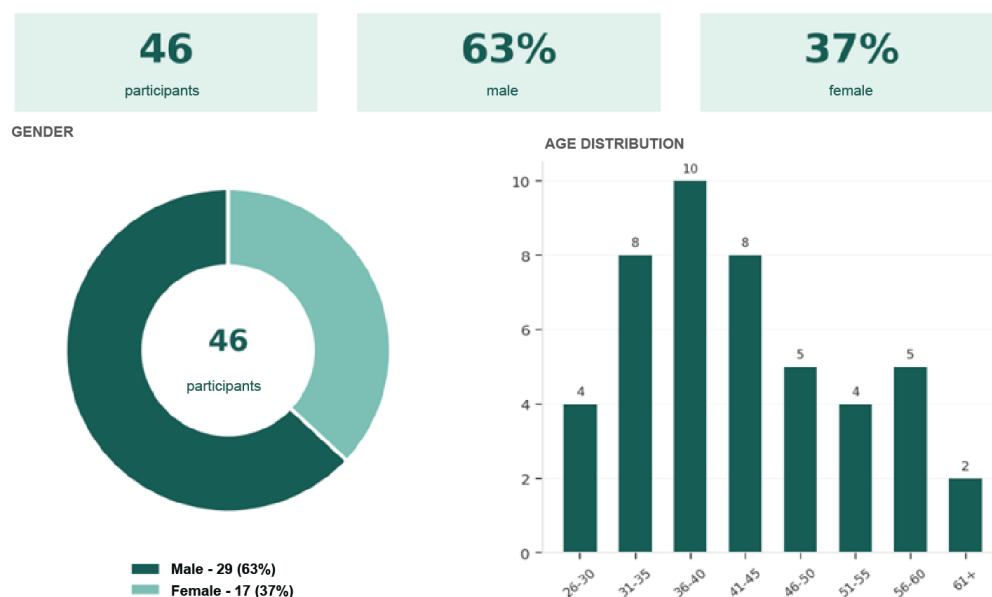


Figure 1. Participant distribution by gender and age. Initial self-assessment.

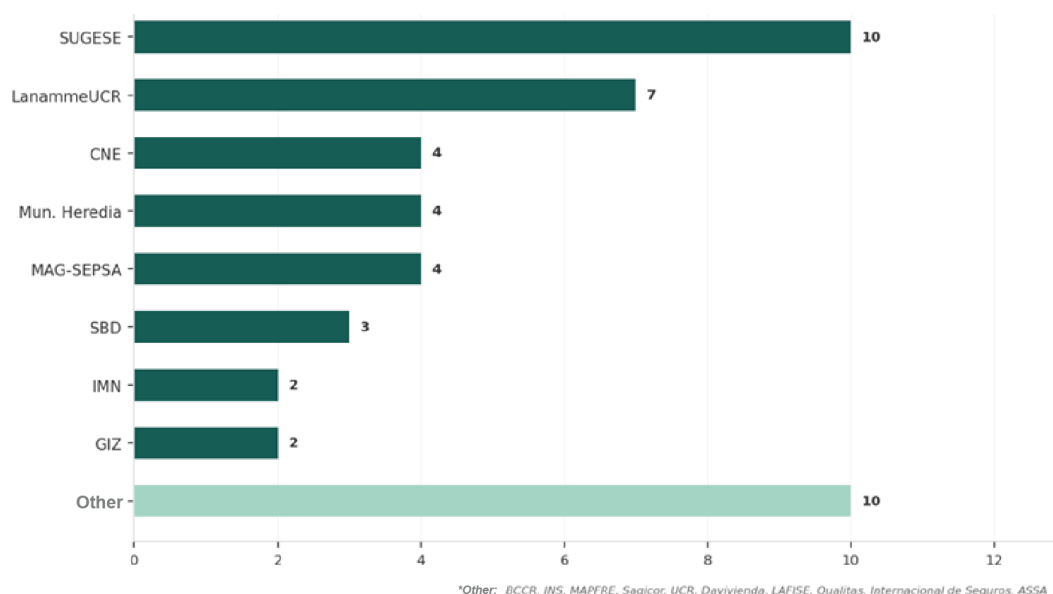


Figure 2. Participant distribution by institution. Initial self-assessment

2.4.2 Prior Knowledge Level

Overall, participants reported limited or partial knowledge across most of the topics assessed. The key principles of climate and disaster risk, as well as the value of risk analysis for risk management and financing, were the topics with the highest proportion of participants reporting some prior knowledge, though mostly with limited practical application. The topics of protection gap and climate and disaster risk finance and insurance (CDRFI) solutions showed the lowest levels, with between 28% and 41% of participants indicating no prior knowledge.

Regarding tools, the majority reported familiarity with modelling and GIS tools at a surface level but without having used them in practice; only a small group reported regular use of global and local risk modelling tools.

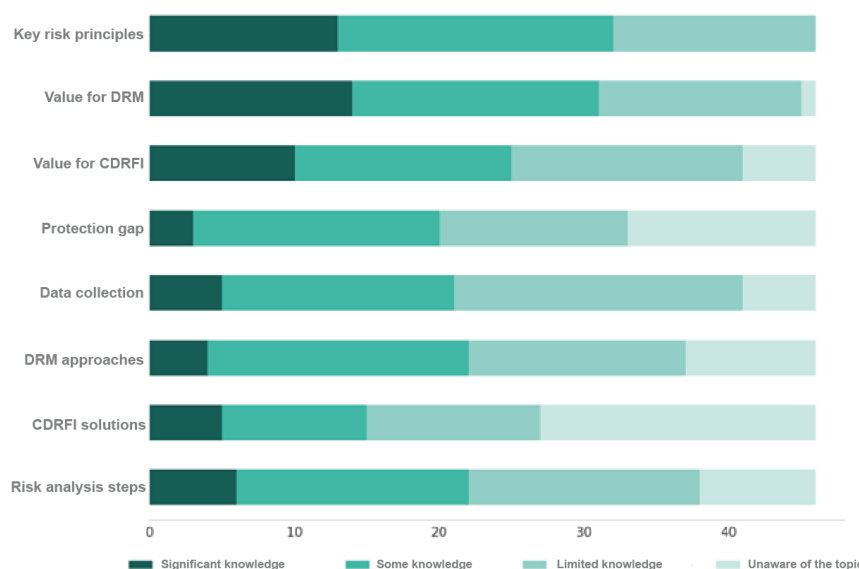


Figure 3. Self-assessment of prior knowledge — Concepts and methodologies. Initial self-assessment.

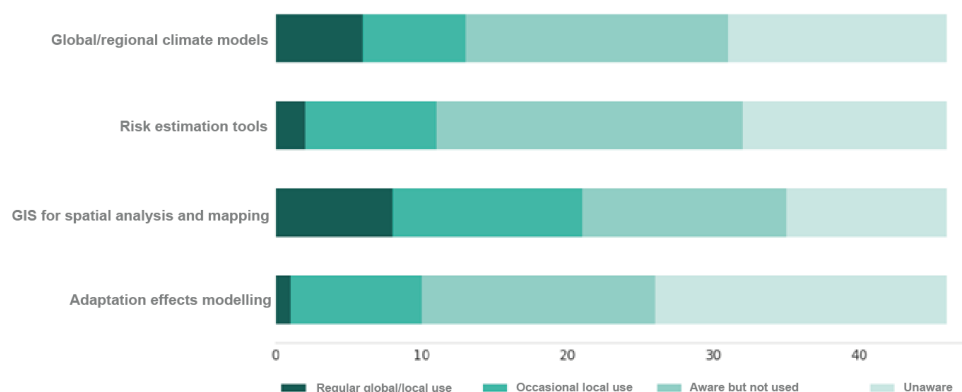


Figure 4. Self-assessment of prior knowledge — Tools. Initial self-assessment.

2.4.3 Data Access and Data Use Skills

Access to risk data is limited for most participants. Between 43% and 76% reported never having accessed data types such as hazard, exposure, and vulnerability assessments, risk metrics, or historical disaster data. Historical impact data (such as EM-DAT) and scenario modelling were the least accessed, with 76% of participants reporting never having used them.

Regarding data use skills, the majority self-assessed as ranging from no ability to beginner across all evaluated categories. Statistical analysis methods were the area with the highest proportion of participants at intermediate or expert level, while the use of historical disaster data showed the lowest self-reported skill level.

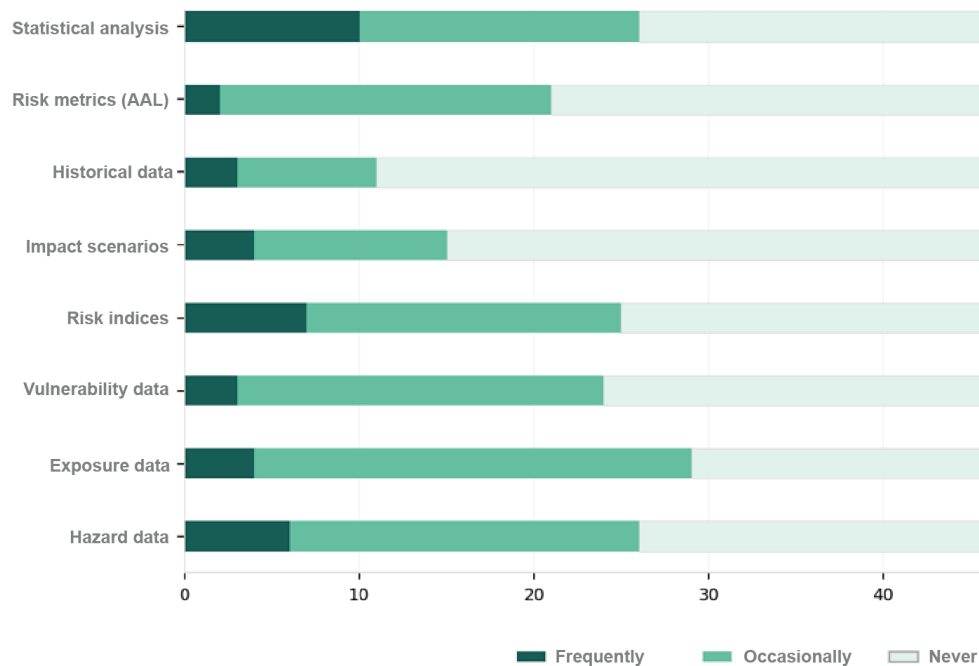


Figure 5. Frequency of access to risk data. Initial self-assessment.

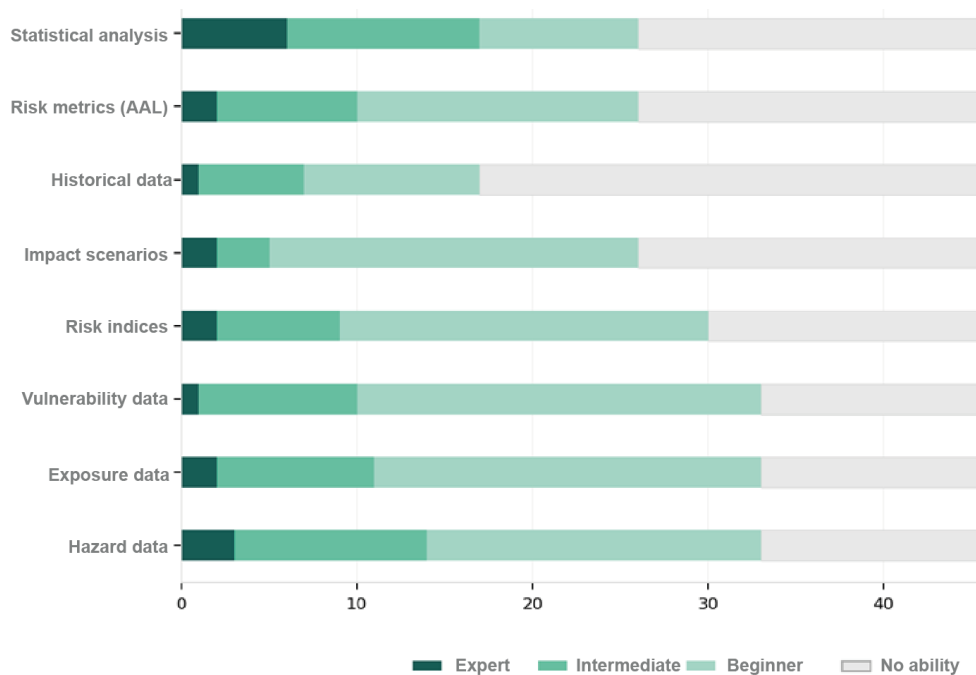


Figure 6. Data and tool use skills. Initial self-assessment.

2.4.4 Needs and Expectations

The areas of greatest interest to participants were hazard, exposure, and vulnerability assessments, impact scenario modelling, risk metrics, and statistical analysis methods — covering virtually the entire course curriculum. The main barriers identified for accessing and using risk data were lack of data (74% of participants), limited access to tools (65%), and lack of training (65%). A smaller number also cited lack of time as a barrier.

These results confirm the relevance of the approach adopted in the training component, and constitute the baseline against which progress will be evaluated at project closure through the final feedback questionnaire.

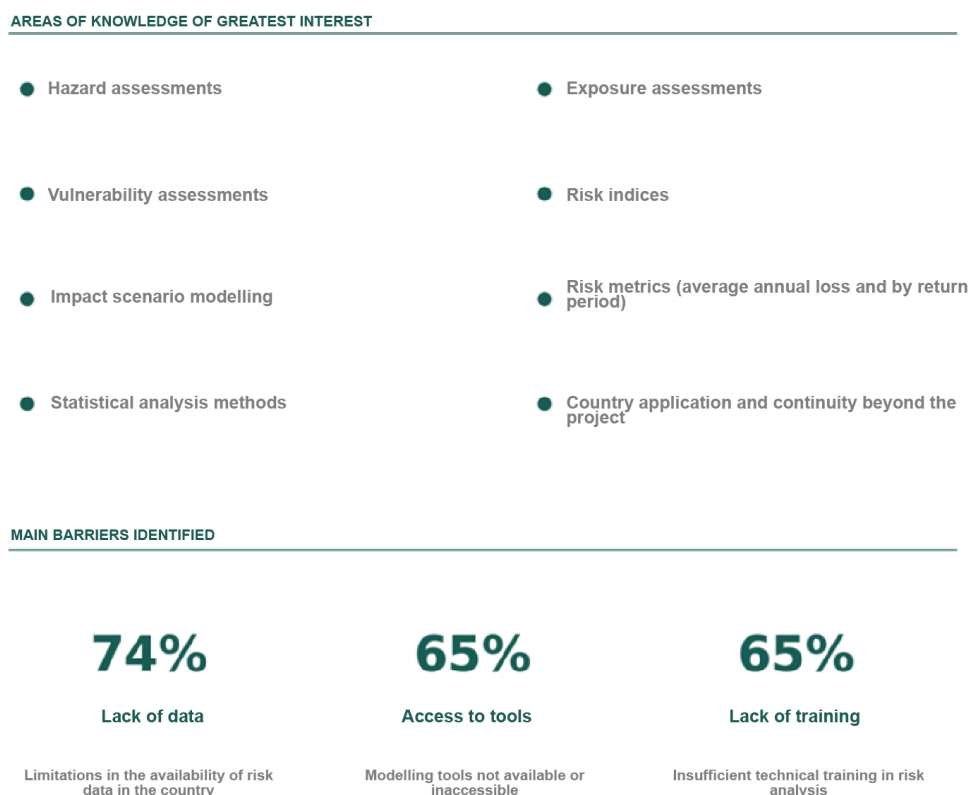


Figure 7. Areas of interest and identified barriers. Initial self-assessment.

2.5 Final Participant Self-Assessment

At project closure, 21 participants completed the final evaluation questionnaire with the objective of measuring the impact of the training process and the level of uptake of the content covered throughout the course. The results of this instrument are compared against those of the initial self-assessment to document progress in capacity development during project implementation.

2.5.1 Participant Profile

The final questionnaire was completed by 21 participants. Of these, 15 identified as male (71%) and 6 as female (29%), with ages ranging from 28 to 70 years, concentrated primarily in the 36 to 43 age range. The most represented organizations were SUGESE (5 participants), Municipalidad de Heredia (4), Lanamme-UCR (3), and CNE (3), followed by IMN (2) and other institutions with one participant each.

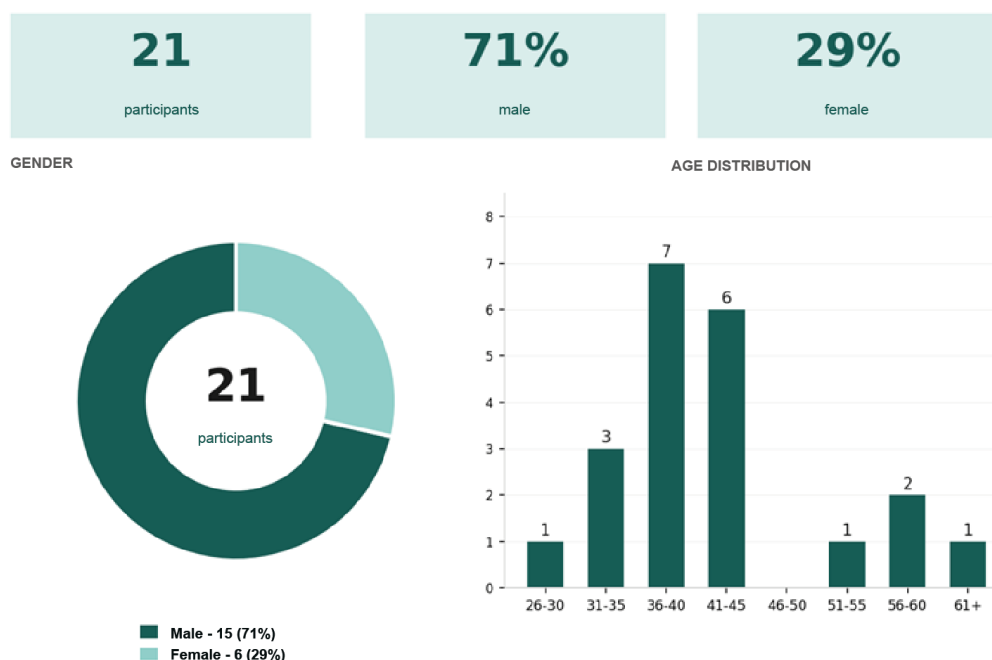


Figure 8. Participant distribution by gender and age. Final self-assessment.

2.5.2 Learning Self-Assessment

Regarding familiarity with the key metrics of probabilistic risk assessment — the Loss Exceedance Curve (LEC), Average Annual Loss (AAL), and Probable Maximum Loss (PML) — 66% of participants reported a general understanding or above at course closure: 33% indicated a general understanding and knowledge of when to apply them, 19% feel comfortable using them with guidance, and 14% can explain and apply them confidently. 29% partially understand them, and one participant (5%) indicated not yet understanding them.

Regarding participants' perception of the importance of tools such as CAPRA ROBOT in risk management, 95% rated it as important or very important, with 62% selecting the highest rating. Only one participant considered it moderately important.

As for the open-ended questions, 95% of respondents indicated that their skills in using risk modelling tools improved as a result of the course, and the majority identified at least one concrete application scenario within their professional context, including road infrastructure risk analysis, stress testing in the

insurance sector, municipal risk management, and agricultural and livestock climate risk assessment, among others.

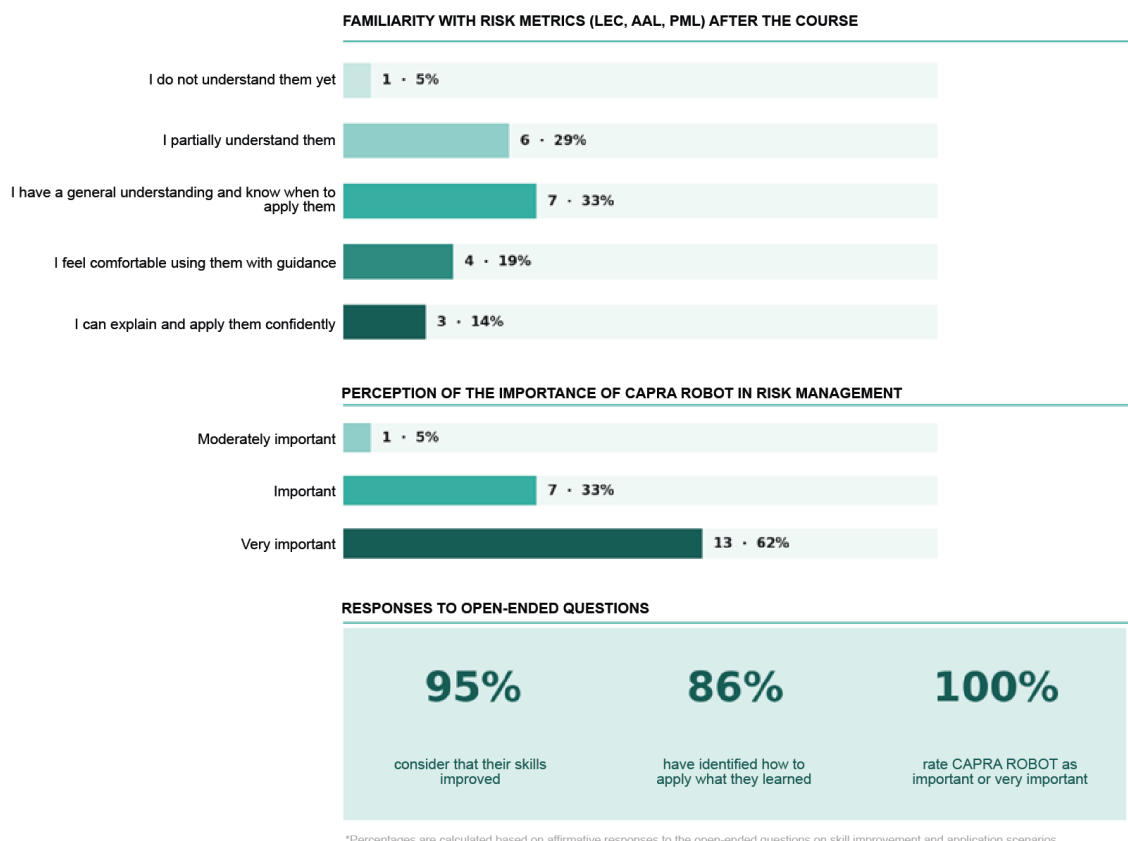


Figure 9. Consolidated results. Final self-assessment

2.5.3 Technical Knowledge Results

The four single-answer questions designed to assess understanding of technical concepts yielded an average accuracy rate of 88%. The main function of CAPRA ROBOT and the probabilistic approach to risk calculation were the concepts with the highest proportion of correct answers, with a 90% accuracy rate in both cases (19 out of 21 participants). The process for generating the Loss Exceedance Curve and the handling of loss aggregation in multi-hazard scenarios achieved an 86% accuracy rate (18 out of 21). These results demonstrate solid mastery of the fundamental concepts of probabilistic risk modelling among participants at the close of the training process.

UNDERSTANDING OF KEY CONCEPTS - SINGLE ANSWER QUESTIONS

Main function of CAPRA Robot

Correct answer:

✓ Correct

19 • 90%

Estimate risk based on loss calculation from hazards, using a probabilistic approach

✗ Incorrect

2 • 10%

Probabilistic approach of CAPRA Robot

Correct answer:

✓ Correct

19 • 90%

Calculate expected losses on the frequency and severity of possible events

✗ Incorrect

2 • 10%

Process for generating the Loss Exceedance Curve

Correct answer:

✓ Correct

18 • 86%

Integrate hazard, vulnerability, and exposure data to calculate losses under multiple scenarios

✗ Incorrect

3 • 14%

Loss aggregation in a multi-hazard scenario

Correct answer:

✓ Correct

18 • 86%

Aggregate losses considering possible interactions between hazards to estimate a consolidated risk

✗ Incorrect

3 • 14%

88%

average correct response rate in technical knowledge questions

Figure 10. Consolidated results in concept understanding. Final self-assessment.

The results of the final questionnaire demonstrate significant progress in the capacity development of the participating group. In contrast to the baseline, where the majority reported limited or no knowledge in the topics assessed and limited access to and use of risk modelling tools, by the close of the training process most participants demonstrated a general understanding or above of the key metrics of probabilistic risk assessment and a positive assessment of the tools used throughout the course. The results of the technical knowledge questions confirm that the fundamental concepts of probabilistic risk modelling were solidly mastered by the majority of the group. Furthermore, the ability to identify concrete application scenarios within their own institutional context indicates that the training process went beyond theoretical understanding and generated skills with practical application potential beyond the project.

2.6 Consolidated Participation Summary

Throughout the project, capacity development activities brought together representatives from a broad range of public, academic, financial, and insurance sector institutions in Costa Rica. Table 5 presents a summary of participation by activity.

Table 5. Participation Summary

Activity	Date	Modality	Participants
Workshop 1 — Project Launch Workshop	March 18–21, 2025	In-Person	40
Workshop 2 — Hazard Modelling Practical Session	September 2, 2025	In-Person	52
Workshop 3 — Risk Modelling Practice and Results Review	January 28, 2026	In-Person	37
Workshop 4 — Project Closure, Presentation of Final Results, and Project Sustainability	April 27-30, 2026	In-Person	53
Asynchronous course — Module 1	March 2025 – April 2026	Asynchronous virtual	43 successfully completed
Asynchronous course — Module 2	March 2025 – April 2026	Asynchronous virtual	17 successfully completed at least one submodule
Asynchronous course — Module 3	March 2025 – April 2026	Asynchronous virtual	24 successfully completed
Initial self-assessment	March 2025	Virtual	46
Final self-assessment	April 2026	Virtual	21

The participating institutions across the various activities included SUGESE, CNE, Lanamme-UCR, the UCR School of Geology, IMN, MAG-SEPSA, SBD, the Municipalidad de Heredia, the Banco Central de Costa Rica, the Ministerio de Hacienda, DCC-MINAE, GIZ, ICT, the Instituto Nacional de Seguros, and various insurance companies, among others.

A.1. STAKEHOLDERS WORKSHOP AGENDAS

Workshop 1

Date: March 18-21, 2025

Type: In-Person

Participant Institutions: Superintendencia General de Seguros (SUGESE), Municipalidad de Heredia, GIZ, Fu-turismo, Sistema de Banca para el Desarrollo (SBD), Ministerio de Agricultura y Ganadería (MAG), Universidad de Costa Rica (UCR), Comisión Nacional de Prevención de Riesgos y Atención de Emergencias (CNE), Laboratorio Nacional de Materiales y Modelos Estructurales – Universidad de Costa Rica (Lanamme), Instituto Meteorológico Nacional de Costa Rica (IMN), Instituto Costarricense de Turismo (ICT), Escuela Centroamericana de Geología – Universidad de Costa Rica (ECG), Aseguradora del Istmo S.A. (ADISA).

Day 1 (March 18) – Hotel Parque del Lago

Objective: General project session, including scope and timeline of the work plan, methodological approach, and launch of the training program.

Time	Session	Lead
9:00 AM – 9:30 AM	Welcome	SUGESE, GRMA
9:30 AM – 10:30 AM	General work plan, objectives, and schedule	INGENIAR-CIMNE
10:30 AM – 11:00 AM	Coffee break	
11:00 AM – 12:30 PM	General methodological approach	INGENIAR-CIMNE
12:30 PM – 2:00 PM	Lunch	
2:00 PM – 3:15 PM	Training program launch	INGENIAR-CIMNE
3:15 PM – 3:45 PM	Coffee break	
3:45 PM – 4:45 PM	Foundations and introduction to risk modelling	INGENIAR-CIMNE
4:45 PM – 5:00 PM	Closing	SUGESE, GRMA

Day 2 (March 19) – Hotel Parque del Lago

Objective: Specific session for *Operational Project 1 – Climate and disaster risk assessment for road infrastructure*, including scope and timeline of the work plan, methodological approach, and progress status on modelling and data collection.

Time	Session	Lead
9:00 AM – 9:30 AM	Welcome	SUGESE, GRMA
9:30 AM – 10:30 AM	Project work plan, objectives, and schedule	INGENIAR-CIMNE
10:30 AM – 11:00 AM	Coffee break	
11:00 AM – 12:30 PM	Project-specific methodology and progress	INGENIAR-CIMNE
12:30 PM – 2:00 PM	Lunch	
2:00 PM – 3:15 PM	Technical information on modelling – earthquake / volcano	INGENIAR-CIMNE
3:15 PM – 3:45 PM	Coffee break	
3:45 PM – 4:45 PM	Technical information on modelling – landslides	INGENIAR-CIMNE
4:45 PM – 5:00 PM	Closing	SUGESE, GRMA

Day 3 – Morning Session (Marc 20) – Hotel Parque del Lago

Objective: Specific session for *Operational Project 2 — Flood and drought risk for small and medium-sized agricultural and livestock producers*, including scope and timeline of the work plan, methodological approach, and progress status on modelling and data collection.

Time	Session	Lead
9:00 AM – 9:15 AM	Welcome	SUGESE, GRMA
9:15 AM – 10:30 AM	Project work plan, objectives, and schedule	INGENIAR-CIMNE
10:30 AM – 11:00 AM	<i>Coffee break</i>	
11:00 AM – 11:30 AM	Project-specific methodological approach	INGENIAR-CIMNE
11:30 AM – 12:00 PM	Progress status (data, modelling)	INGENIAR-CIMNE

Day 3 – Afternoon Session (March 20) – Hotel Parque del Lago

Objective: Specific session for *Operational Project 3 — Exposure and risk assessment for small and medium-sized hotels and hostels for Fu-turismo*, including scope and timeline of the work plan, methodological approach, and progress status on modelling and data collection.

Time	Session	Lead
02:00 p.m. – 02:15 p.m.	Welcome	SUGESE-GRMA
02:45 p.m. – 03:30 p.m.	Project work plan, objective and schedule	INGENIAR-CIMNE
03:30 p.m. – 04:00 p.m.	<i>Coffee Break</i>	
04:00 p.m. – 04:30 p.m.	Project-specific methodological approach	INGENIAR-CIMNE
04:30 p.m. – 05:00 p.m.	Project status (data, modelling)	INGENIAR-CIMNE

Day 4 (March 21) – Hotel Parque del Lago

Objective: Specific session for the *Strategic Project — Demonstration of risk assessment methods for critical infrastructure in Heredia*, including scope and timeline of the work plan, methodological approach, and progress status on modelling and data collection.

Time	Session	Lean
09:00 a.m. – 09:15 a.m.	Welcome	SUGESE-GRMA
09:15 a.m. – 10:30 a.m.	Project work plan, objective and schedule	INGENIAR-CIMNE
10:30 a.m. – 11:00 a.m.	<i>Coffee Break</i>	
11:00 a.m. – 11:30 a.m.	Project-specific methodological approach	INGENIAR-CIMNE
11:30 a.m. – 12:00 p.m.	Project status (data, modelling)	INGENIAR-CIMNE

Workshop 2

Date: September 2-5, 2025

Type: In-Person

Participant Institutions: Superintendencia General de Seguros (SUGESE), Municipalidad de Heredia, GIZ, Fu-turismo, Sistema de Banca para el Desarrollo (SBD), Ministerio de Agricultura y Ganadería (MAG), Universidad de Costa Rica (UCR), Comisión Nacional de Prevención de Riesgos y Atención de Emergencias (CNE), Laboratorio Nacional de Materiales y Modelos Estructurales – Universidad de Costa Rica (Lanamme), Instituto Meteorológico Nacional de Costa Rica (IMN), Instituto Costarricense de Turismo (ICT), Escuela Centroamericana de Geología – Universidad de Costa Rica (ECG), Aseguradora del Istmo S.A. (ADISA).

Day 1 (September 2) – Hotel Parque del Lago

Objective: General project session, including review of work plan progress, description of ongoing activities, reports submitted, and training session.

Time	Session	Lead
09:00 a.m. – 09:30 a.m.	Welcome	SUGESE, GRMA
09:30 a.m. – 10:30 a.m.	General work plan progress status	INGENIAR-CIMNE
10:30 a.m. – 11:00 a.m.	<i>Coffee Break</i>	
11:00 a.m. – 12:30 p.m.	Ongoing activities and submitted reports	INGENIAR-CIMNE
12:30 p.m. – 02:00 p.m.	<i>Lunch</i>	
02:00 p.m. – 03:15 p.m.	Progress review and general training session	INGENIAR-CIMNE
03:15 p.m. – 03:45 p.m.	<i>Coffee Break</i>	
03:45 p.m. – 04:45 p.m.	Hands-on hazard modelling session	INGENIAR-CIMNE
04:45 p.m. – 05:00 p.m.	Closing	SUGESE, GRMA

Day 2 – Morning Session (September 3) – Hotel Parque del Lago

Objective: Specific session for *Operational Project 1 – Climate and disaster risk assessment for road infrastructure*, including work plan progress, completed and ongoing activities, and modelling progress and data used.

Time	Session	Lead
09:00 a.m. – 09:15 a.m.	Welcome	SUGESE-GRMA
09:15 a.m. – 10:30 a.m.	Project work plan progress status	INGENIAR-CIMNE
10:30 a.m. – 11:00 a.m.	<i>Coffee Break</i>	
11:00 a.m. – 11:30 a.m.	Progress status on data and modelling	INGENIAR-CIMNE
11:30 a.m. – 12:00 p.m.	Hazard training session	INGENIAR-CIMNE

Day 2 – Afternoon Session (September 3) – Hotel Parque del Lago

Objective: Specific session for *Operational Project 2 – Flood and drought risk for small and medium-sized agricultural and livestock producers*, including work plan progress, completed and ongoing activities, and modelling progress and data used.

Time	Session	Lead
02:00 p.m. – 02:15 p.m.	Welcome	SUGESE-GRMA
02:45 p.m. – 03:30 p.m.	Project work plan progress status	INGENIAR-CIMNE
03:30 p.m. – 04:00 p.m.	<i>Coffee Break</i>	
04:00 p.m. – 04:30 p.m.	Progress status on data and modelling	INGENIAR-CIMNE
04:30 p.m. – 05:00 p.m.	Hazard training session	INGENIAR-CIMNE

Day 3 – Morning Session (September 4) – Hotel Parque del Lago

Objective: Specific session for the *Strategic Project – Demonstration of risk assessment methods for critical infrastructure in Heredia*, including work plan progress, completed and ongoing activities, and modelling progress and data used.

Time	Session	Lead
09:00 a.m. – 09:15 a.m.	Welcome	SUGESE-GRMA
09:15 a.m. – 10:30 a.m.	Project work plan progress status	INGENIAR-CIMNE
10:30 a.m. – 11:00 a.m.	<i>Coffee Break</i>	
11:00 a.m. – 11:30 a.m.	Progress status on data and modelling	INGENIAR-CIMNE
11:30 a.m. – 12:00 p.m.	Hazard training session	INGENIAR-CIMNE

Day 3 – Afternoon Session (September 4) – Hotel Parque del Lago

Objective: Specific session for *Operational Project 3 – Exposure and risk assessment for small and medium-sized hotels and hostels for Fu-turismo*, including work plan progress, completed and ongoing activities, and modelling progress and data used.

Time	Session	Lead
02:00 p.m. – 02:15 p.m.	Welcome	SUGESE-GRMA
02:45 p.m. – 03:30 p.m.	Project work plan progress status	INGENIAR-CIMNE
03:30 p.m. – 04:00 p.m.	<i>Coffee Break</i>	
04:00 p.m. – 04:30 p.m.	Progress status on data and modelling	INGENIAR-CIMNE
04:30 p.m. – 05:00 p.m.	Hazard training session	INGENIAR-CIMNE

Day 3 – Afternoon Session (September 4) – Hotel Parque del Lago

INGENIAR-CIMNE and SUGESE meeting for project progress review and feedback. To be held following the conclusion of the workshop.

Workshop 3

Date: January 27-30, 2026

Type: In-Person

Participant Institutions: Superintendencia General de Seguros (SUGESE), Municipalidad de Heredia, GIZ, Fu-turismo, Sistema de Banca para el Desarrollo (SBD), Ministerio de Agricultura y Ganadería (MAG), Universidad de Costa Rica (UCR), Comisión Nacional de Prevención de Riesgos y Atención de Emergencias (CNE), Laboratorio Nacional de Materiales y Modelos Estructurales – Universidad de Costa Rica (Lanamme), Instituto Meteorológico Nacional de Costa Rica (IMN), Instituto Costarricense de Turismo (ICT), Escuela Centroamericana de Geología – Universidad de Costa Rica (ECG), Aseguradora del Istmo S.A. (ADISA).

Day 1 (January 27) – Hotel Parque del Lago

Objective: General project session, including review of work plan progress, description of completed activities, reports submitted, and training session with experts.

Time	Session	Lead
09:00 a.m. – 09:30 a.m.	Welcome	SUGESE, GRMA
09:30 a.m. – 10:30 a.m.	Progress status, work plan, and submitted reports	INGENIAR-CIMNE
10:30 a.m. – 11:00 a.m.	<i>Coffee Break</i>	
11:00 a.m. – 12:30 p.m.	Summary of risk results for each project	INGENIAR-CIMNE
12:30 p.m. – 02:00 p.m.	<i>Lunch</i>	
02:00 p.m. – 03:15 p.m.	Workshop on project replicability and post-project sustainability	GRMA, SUGESE
03:15 p.m. – 03:45 p.m.	<i>Coffee Break</i>	
03:45 p.m. – 04:45 p.m.	Workshop on project replicability and post-project sustainability	GRMA, SUGESE
04:45 p.m. – 05:00 p.m.	Closing	SUGESE, GRMA

Day 2 (January 28) – Hotel Parque del Lago

Objectives:

1. Present the required variables and parameters, applicable techniques, and best practices for the identification, cleaning, and preparation of data needed to model exposure, vulnerability, and hazards.
2. Conduct a hands-on general risk modelling activity covering hazard models, the software used, and risk assessment.

Time	Session	Lead
09:00 a.m. – 09:30 a.m.	Welcome	SUGESE, GRMA
09:30 a.m. – 10:30 a.m.	Data management for risk modelling	INGENIAR-CIMNE
10:30 a.m. – 11:00 a.m.	<i>Coffee Break</i>	
11:00 a.m. – 12:30 p.m.	Hands-on general risk modelling activity	INGENIAR-CIMNE
12:30 p.m. – 02:00 p.m.	<i>Lunch</i>	
02:00 p.m. – 03:15 p.m.	Hands-on general risk modelling activity	INGENIAR-CIMNE
03:15 p.m. – 03:45 p.m.	<i>Coffee Break</i>	
03:45 p.m. – 04:45 p.m.	Hands-on general risk modelling activity	INGENIAR-CIMNE

04:45 p.m. – 05:00 p.m.	Closing	SUGESE, GRMA
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Day 3 – Morning Session (January 29) – Hotel Parque del Lago

Objective: Specific session for *Operational Project 1 – Climate and disaster risk assessment for road infrastructure*, including work plan progress, completed activities, hazard, exposure, and vulnerability data used, and risk modelling results.

Time	Session	Lead
09:00 a.m. – 09:15 a.m.	Welcome	SUGESE-GRMA
09:15 a.m. – 10:30 a.m.	Project-specific risk results and details	INGENIAR-CIMNE
10:30 a.m. – 11:00 a.m.	<i>Coffee Break</i>	
11:00 a.m. – 12:00 a.m.	Capacity development: risk assessment knowledge exchange	INGENIAR-CIMNE

Day 3 – Afternoon Session (January 29) – Hotel Parque del Lago

Objective: Specific session for *Operational Project 2 – Flood and drought risk for small and medium-sized agricultural and livestock producers*, including work plan progress, completed activities, hazard, exposure, and vulnerability data, and risk modelling results.

Time	Session	Lead
02:00 p.m. – 02:15 p.m.	Welcome	SUGESE-GRMA
02:15 p.m. – 03:30 p.m.	Project-specific risk results and details	INGENIAR-CIMNE
03:30 p.m. – 04:00 p.m.	<i>Coffee Break</i>	
04:00 p.m. – 05:00 p.m.	Capacity development: risk assessment knowledge exchange	INGENIAR-CIMNE

Day 4 – Morning Session (January 30) – Hotel Parque del Lago

Objective: Specific session for the *Strategic Project – Demonstration of risk assessment methods for critical infrastructure in Heredia*, including work plan progress, completed activities, hazard, exposure, and vulnerability data used, and risk modelling results.

Time	Session	Lead
09:00 a.m. – 09:15 a.m.	Welcome	SUGESE-GRMA
09:15 a.m. – 10:30 a.m.	Project-specific risk results and details	INGENIAR-CIMNE
10:30 a.m. – 11:00 a.m.	<i>Coffee Break</i>	
11:00 a.m. – 12:00 a.m.	Capacity development: risk assessment knowledge exchange	INGENIAR-CIMNE

Day 4 – Afternoon Session (January 30) – Hotel Parque del Lago

Objective: Specific session for *Operational Project 3 – Exposure and risk assessment for small and medium-sized hotels and hostels, Fu-turismo*, including work plan progress, completed activities, hazard, exposure, vulnerability, and risk data, and inputs for the web platform.

Time	Session	Lead
02:00 p.m. – 02:15 p.m.	Welcome	SUGESE-GRMA
02:15 p.m. – 03:30 p.m.	Risk results, indices, and data for the web platform	INGENIAR-CIMNE

Time	Session	Lead
03:30 p.m. – 04:00 p.m.	<i>Coffee Break</i>	
04:00 p.m. – 05:00 p.m.	Capacity development: risk assessment knowledge exchange	INGENIAR-CIMNE

Workshop 4

Date: April 27-30, 2026

Type: In-Person

Participant Institutions: Superintendencia General de Seguros (SUGESE), Municipalidad de Heredia, GIZ, Fu-turismo, Sistema de Banca para el Desarrollo (SBD), Ministerio de Agricultura y Ganadería (MAG), Universidad de Costa Rica (UCR), Comisión Nacional de Prevención de Riesgos y Atención de Emergencias (CNE), Laboratorio Nacional de Materiales y Modelos Estructurales – Universidad de Costa Rica (Lanamme), Instituto Meteorológico Nacional de Costa Rica (IMN), Instituto Costarricense de Turismo (ICT), Escuela Centroamericana de Geología – Universidad de Costa Rica (ECG), Aseguradora del Istmo S.A. (ADISA).

The workshop will be held in an in-person format over four consecutive days, with sessions focused on specific interaction with each working group, technical training, and the presentation of results to senior officials and stakeholders.

Day 1 – Morning Session (April 27) – Hotel Parque del Lago

Objective: Project sustainability workshop. This session will focus on the sustainability strategies developed by each working team, which will be presented on Thursday during the executive results briefing for senior officials.

Time	Session	Lead
09:00 a.m. – 09:15 a.m.	Welcome	SUGESE-GRMA
09:15 a.m. – 10:30 a.m.	Sustainability of results obtained through the project	SUGESE-GRMA
10:30 a.m. – 11:00 a.m.	<i>Coffee Break</i>	
11:00 a.m. – 12:00 a.m.	Sustainability of results obtained through the project	SUGESE-GRMA

Day 1 – Afternoon Session (April 27) – Hotel Parque del Lago

Objective: Capacity development session. This session will review the key concepts, tools, and content of the training process, linking these elements to the final GRMA outputs and their institutional applicability. This session will also mark the formal closure of the asynchronous virtual course

Time	Session	Lead
02:00 p.m. – 02:15 p.m.	Welcome	SUGESE-GRMA
02:15 p.m. – 03:30 p.m.	Hands-on practice in advanced post-processing tools	INGENIAR-CIMNE
03:30 p.m. – 04:00 p.m.	<i>Coffee Break</i>	
04:00 p.m. – 05:00 p.m.	Hands-on practice in advanced post-processing tools	INGENIAR-CIMNE

Day 2 – Morning Session (April 28) – Hotel Parque del Lago

Objective: Specific session for *Operational Project 1 – Climate and disaster risk assessment for road infrastructure*, including a detailed presentation of the technical products, added-value outputs, and tools

generated for this subproject, as well as a review of the methodological scope and potential for application in the institution's operational processes.

Time	Session	Lead
09:00 a.m. – 09:15 a.m.	Welcome	SUGESE-GRMA
09:15 a.m. – 10:30 a.m.	Results and added-value outputs: Risk control engineering; Resilience index	INGENIAR-CIMNE
10:30 a.m. – 11:00 a.m.	<i>Coffee Break</i>	
11:00 a.m. – 12:00 a.m.	Capacity development: advanced risk modelling applications.	INGENIAR-CIMNE

Day 2 – Afternoon Session (April 28) – Hotel Parque del Lago

Objective: Specific session for *Operational Project 2 – Flood and drought risk for small and medium-sized agricultural and livestock producers*, including the presentation of probabilistic results and indicators generated for the agricultural sector, along with the analysis tools designed to support sectoral risk management.

Time	Session	Lead
02:00 p.m. – 02:15 p.m.	Welcome	SUGESE-GRMA
02:15 p.m. – 03:30 p.m.	Results and added-value outputs: Risk control engineering; Catastrophic Agricultural Insurance.	INGENIAR-CIMNE
03:30 p.m. – 04:00 p.m.	<i>Coffee Break</i>	
04:00 p.m. – 05:00 p.m.	Capacity development: advanced risk modelling applications.	INGENIAR-CIMNE

Day 3 – Morning Session (April 29) – Hotel Parque del Lago

Objective: Specific session for the *Strategic Project – Demonstration of risk assessment methods for critical infrastructure in Heredia*, including added-value outputs, advanced analyses, and tools designed to support strategic risk management planning at the local level.

Time	Session	Lead
09:00 a.m. – 09:15 a.m.	Welcome	SUGESE-GRMA
09:15 a.m. – 10:30 a.m.	Results and added-value outputs: Risk control engineering; Resilience index.	INGENIAR-CIMNE
10:30 a.m. – 11:00 a.m.	<i>Coffee Break</i>	
11:00 a.m. – 12:00 a.m.	Capacity development: advanced risk modelling applications.	INGENIAR-CIMNE

Day 3 – Afternoon Session (April 29) – Hotel Parque del Lago

Objective: Specific session for *Operational Project 3 – Exposure and risk assessment for small and medium-sized hotels and hostels, Fu-turismo*, including the presentation of indicators offered as added-value outputs and their potential incorporation into the Fu-turismo platform, as well as a technical review of the full set of results generated for this subproject.

Time	Session	Lead
02:00 p.m. – 02:15 p.m.	Welcome	SUGESE-GRMA

02:15 p.m. – 03:30 p.m.	Results and added-value outputs: Risk control engineering; Resilience index.	INGENIAR-CIMNE
03:30 p.m. – 04:00 p.m.	<i>Coffee Break</i>	
04:00 p.m. – 05:00 p.m.	Capacity development: advanced risk modelling applications.	INGENIAR-CIMNE

Day 4 – Morning Session – (April 30) – Hotel Parque del Lago

Objective: Session with senior officials of project stakeholders and cooperating partners. Formal executive results briefing for senior officials of stakeholder and cooperating partner institutions to present the project results and their long-term sustainability.

Time	Session	Lead
02:00 p.m. – 02:15 p.m.	Welcome	SUGESE-GRMA
02:15 p.m. – 03:30 p.m.	Executive presentation of the results of the GRMA – Costa Rica	INGENIAR-CIMNE
03:30 p.m. – 04:00 p.m.	<i>Coffee Break</i>	
04:00 p.m. – 05:00 p.m.	Executive presentation of the results of the GRMA – Costa Rica	INGENIAR-CIMNE

Day 4 – Afternoon Session (April 30) – Auditorio de las Superintendencias (BCCR-ODMs Building)

Objective: Expanded results dissemination session. The session will be devoted to the general dissemination of results to a broader audience.

Time	Session	Lead
02:00 p.m. – 02:15 p.m.	Welcome	SUGESE-GRMA
02:15 p.m. – 03:30 p.m.	General dissemination of the results of the GRMA – Costa Rica	INGENIAR-CIMNE
03:30 p.m. – 04:00 p.m.	<i>Coffee Break</i>	
04:00 p.m. – 05:00 p.m.	Discussion panel on the results of the GRMA – Costa Rica program	SUGESE-GRMA

A.2. WORKSHOP ATTENDANCE LIST

WORKSHOP 1 ATTENDANCE

TOTAL ATTENDEES: 40

FEMALE: 14

MALE: 26

March 18, 2025 – Morning Session

Name	Institution	Project
Jorge Alfaro Figueroa	SUGESE	Operativo 2 - Agro
María Cambronero Arías	SUGESE	Estratégico - Heredia
Alejandro Rodríguez Solís	SUGESE	Estratégico - Heredia
Ana Cecilia Castro	SUGESE	Estratégico - Heredia
Celia González Haug	SUGESE	
Rodolfo Rothe Cordero	Municipalidad Heredia	Estratégico - Heredia
Loirely Marín Mena	Municipalidad Heredia	Estratégico - Heredia
Cheiling Venegas Villalobos	Municipalidad Heredia	Estratégico - Heredia
Yesenia Brenes Paniagua	Ministerio de Hacienda	
Rosy Trigueros Elzondo	Ministerio de Hacienda	
Ariel Barrantes	Ministerio de Hacienda	
Rosario Ureña M	MAG - SEPSA	Operativo 2 - Agro
Christian Salazar Chacón	MAG - SEPSA	Operativo 2 - Agro
Julián Trejos Villalobos	Lanamme UCR	Operativo 1 - Red vial
Roy Barrantes Jimenez	Lanamme UCR	Operativo 1 - Red vial
Alonso Ulate Castillo	Lanamme UCR	Estratégico - Heredia
Ana Lucía Elizondo Salas	Lanamme UCR	Estratégico - Heredia
José Alberto Retana	Instituto Meteorológico	
Sergio Mora Castro	Ingeniar	Grupo Consultor
Omar Darío Cardona	Ingeniar	Grupo Consultor
Mabel Marulanda	Ingeniar	Grupo Consultor
Paula Marulanda	Ingeniar	Grupo Consultor
Alonso Brenes	Ingeniar	Grupo Consultor
Jorge Esteban Masis Aguilar	GIZ	Operativo 3 - Fu-turismo
Mauricio Mora Fernández	Escuela de Geología	Estratégico - Heredia
Ricardo Cascante Flores	Escuela de Geología	
Catalina Artavia Pereira	CNE	Estratégico - Heredia
Carlos Picado Rojas	CNE	
Liliana Carreño	CIMNE	Grupo Consultor

March 18, 2025 – Afternoon Session

Name	Institution	Project
Liliana Carreño	CIMNE	Grupo Consultor
Jorge Esteban Masis Aguilar	GIZ	Operativo 3 - Fu-turismo
Sergio Mora Castro	Ingeniar	Grupo Consultor
Omar Darío Cardona	Ingeniar	Grupo Consultor
Mabel Marulanda	Ingeniar	Grupo Consultor
Paula Marulanda	Ingeniar	Grupo Consultor
Alonso Brenes	Ingeniar	Grupo Consultor
Julián Trejos Villalobos	Lanamme UCR	Operativo 1 - Red vial
Alonso Ulate Castillo	Lanamme UCR	Estratégico - Heredia
Roy Barrantes Jimenez	Lanamme UCR	Operativo 1 - Red vial
Mario Jimenez Chacón	MNK Seguros	
Rodolfo Rothe Cordero	Municipalidad Heredia	Estratégico - Heredia
Lorelly Marín Mena	Municipalidad Heredia	Estratégico - Heredia
Cheiling Venegas Villalobos	Municipalidad Heredia	Estratégico - Heredia
Bryan Rodríguez Gómez	Municipalidad Heredia	Estratégico - Heredia
Victor Salazar García	Sagicor	
Edwin Vega Flores	Seguros LAFISE	
María Cambronero Arías	SUGESE	Estratégico - Heredia
Yemerith Alpizar Segura		

March 19, 2025

Name	Institution	Project
Liliana Carreño	CIMNE	Grupo Consultor
Sergio Mora Castro	Ingeniar	Grupo Consultor
Omar Darío Cardona	Ingeniar	Grupo Consultor
Mabel Marulanda	Ingeniar	Grupo Consultor
Paula Marulanda	Ingeniar	Grupo Consultor
Alonso Brenes	Ingeniar	Grupo Consultor
Roy Barrantes Jimenez	Lanamme UCR	Operativo 1 - Red vial
Sergio Álvarez González	Lanamme UCR	Estratégico - Heredia
Alejandro Rodríguez S.	SUGESE	Operativo 1 - Red vial
Mauricio Mora Fernández	Escuela de Geología	Estratégico - Heredia; Operativo 1 - Red vial
Ricardo Cascante Flores	Escuela de Geología	Estratégico - Heredia; Operativo 1 - Red vial
Celia González Haug	SUGESE	
Carlos Picado Rojas	CNE	Estratégico - Heredia
Julián Trejos Villalobos	Lanamme UCR	Operativo 1 - Red vial
Enrique Jiménez	Banco Central CR	Operativo 1 - Red vial

March 20, 2025 – Morning Session

Name	Institution	Project
Liliana Carreño	CIMNE	Grupo Consultor
Ricardo Cascante Flores	Escuela de Geología	Estratégico - Heredia; Operativo 1 - Red vial
Sergio Mora Castro	Ingeniar	Grupo Consultor
Omar Darío Cardona	Ingeniar	Grupo Consultor
Mabel Marulanda	Ingeniar	Grupo Consultor
Paula Marulanda	Ingeniar	Grupo Consultor
Alonso Brenes	Ingeniar	Grupo Consultor
Christian Salazar Chacón	MAG - SEPSA	Operativo 2 - Agro
Rosario Ureña M	MAG - SEPSA	Operativo 2 - Agro
Luis Ramírez	SBD	Operativo 2 - Agro
Jorge Alfaro Figueroa	SUGESE	Operativo 2 - Agro

March 20, 2025 – Afternoon Session

Name	Institution	Project
Jorge Esteban Masis Aguilar	GIZ	Operativo 3 - Fu-turismo
Nicolás Morales Miranda	GIZ	Operativo 3 - Fu-turismo
Ricardo Cascante Flores	Escuela de Geología	Estratégico - Heredia; Operativo 1 - Red vial
Celia González Haug	SUGESE	
Germán Rodríguez Aguilar	SUGESE	Operativo 3 - Fu-turismo
Liliana Carreño	CIMNE	Grupo Consultor
Sergio Mora Castro	Ingeniar	Grupo Consultor
Omar Darío Cardona	Ingeniar	Grupo Consultor
Mabel Marulanda	Ingeniar	Grupo Consultor
Paula Marulanda	Ingeniar	Grupo Consultor
Alonso Brenes	Ingeniar	Grupo Consultor

March 21, 2025

Name	Institution	Project
María Cambronero Arías	SUGESE	Estratégico - Heredia
Ana Cecilia Castro	SUGESE	Estratégico - Heredia
Carlos Picado Rojas	CNE	
Mauricio Mora Fernández	Escuela de Geología	Estratégico - Heredia
Ricardo Cascante Flores	Escuela de Geología	Estratégico - Heredia; Operativo 1 - Red vial
Sergio Álvarez G.	Lanamme UCR	Estratégico - Heredia
Cheiling Venegas Villalobos	Municipalidad Heredia	Estratégico - Heredia
Ana Lucía Elizondo Salas	Lanamme UCR	Estratégico - Heredia

Name	Institution	Project
Rodolfo Rothe Cordero	Municipalidad Heredia	Estratégico - Heredia
Lorelly Marín Mena	Municipalidad Heredia	Estratégico - Heredia
Alonso Ulate Castillo	Lanamme UCR	Estratégico - Heredia
Sergio Mora Castro	Ingeniar	Grupo Consultor
Omar Darío Cardona	Ingeniar	Grupo Consultor
Mabel Marulanda	Ingeniar	Grupo Consultor
Paula Marulanda	Ingeniar	Grupo Consultor
Alonso Brenes	Ingeniar	Grupo Consultor
Rolando Castro	Ingeniar	Grupo Consultor

WORKSHOP 2 ATTENDANCE

TOTAL ATTENDEES: 52

FEMALE: 19

MALE: 33

September 2, 2025 – Morning Session

Name	Institution	Project
Nicolás Morales	GIZ	FUTURISMO
Celia González Huang	SUGESE	GRMA
Roberto Villalobos	UCR	GRMA
Roy Barrantes Jiménez	Lanamme UCR	Operativo 1
Pablo Agüero Barrantes	Lanamme UCR	Operativo 1 Ruta 2
Sergio Álvarez González	Lanamme UCR	Cantón Heredia
Víctor Salazar García	Sagikor	Futurismo
Jorge Masís Aguilar	GIZ	Futurismo
Alejandro Rodríguez S.	SUGESE	GRMA - Ruta Nac. 2
Alonso Ulate Castillo	Lanamme UCR	Heredia
Christian Salazar Ch.	MAG - SEPSA	GP Agricultura
Jorge Alfaro Figueroa	SUGESE	Agricultura
Silvia Bolaños Castro	Consultora Independ.	Heredia
Catalina Méndez Herrera	Davivienda Seguros	Futurismo
German Brenes Cerdas	SBD	Agricultura
Lorelly Marín Mena	Municipalidad Heredia	Estratégico - Eva Riesgo
Rodolfo Rothe Cordero	Municipalidad Heredia	GRMA
María Cambroner Arias	Sugese	Estratégico
Stuart Fraser	GRMA	Todo
Paulo Ruiz Cubillo	Escuela de Geología - UCR	Ruta 2 - Heredia
Carlos Picado Rojas	CNE	Todo
Catalina Artavia Pereira	CNE	Estratégico
José Alberto Retana	IMN	—

Name	Institution	Project
Liliana Carreño	CIMNE	Eq. Consultor
Mauricio Chacón	MAG	
J. Valerín Román	MAG	
Omar D. Cardona	Ingeniar - CIMNE	Eq. Consultor
Gabriel Bernal	Ingeniar - CIMNE	Consultor
Ana Lucia Elizondo S.	Lanamme UCR	Ruta 2 y Heredia
Johnny Aguilar Madrigal	BCCR	—
Julián Trejos V.	Lanamme	RN 2
Susan Mora Castro	Internacional de Seguros	Turismo
Ana Laura Ruiz J.	SBD	Agropecuario
Adriana Sequeira Granados	Mideplan	N/A (Cooperación Int)
Ana Cecilia Castro	Sugese	Estratégico

September 2, 2025 – Afternoon Session

Name	Institution	Project
Alonso Ulate Castillo	Lanamme UCR	Heredia
Silvia Bolaños C.	Consultora Independiente	Heredia
Víctor Salazar García	Sagicor	Futurismo
Marco Antonio Mejía Elizondo	INS	—
Isaac López Rodríguez	Sugese	GRMA
Ignacio Bustamante	SUGESE	GRMA
Rodolfo Rothe Cordero	Municipalidad de Heredia	GRMA
Karol Fallas Corrales	Municipalidad de Heredia	GRMA
Paulo Ruiz Cubillo	UCR	Ruta 2 - Heredia
Roy Barrantes Jiménez	Lanamme UCR	Ruta 2
Sergio Alvarez G.	Lanamme UCR	Cantón Heredia
Roberto Villalobos Herrera	UCR	RN 2
Celia González Huang	SUGESE	GRMA
José Alberto Retana	IMN	—
Marilyn Calvo Méndez	IMN	—
Katia Carvajal Tobar	IMN	—
Jorge Masís	GIZ	Futurismo
Nicolás Morales	GIZ	FUTURISMO
Christian Salazar Chaves	MAG - SEPSA	Agricultura
Julián Trejos Villalobos	Lanamme	RN 2

Name	Institution	Project
Alejandro Rodríguez S.	SUGESE	RN 2
Johnny Aguilar Madrigal	BCCR	—
Siviany Araya Vargas	SUGESE	—
Alonso Brenes Torres	INGENIAR	—
Ana Cecilia Castro	Sugese	Estratégico
Jorge Alfaro Figueroa	SUGESE	Agricultura
Liliana Carreño	CIMNE	Eq. Consultor
Alonso Alvarado Oviedo	Municipalidad Heredia	GRMA
Andrés Madrigal Ramírez	CNE	—
Rolando Castro T.	Ingeniar	—

September 3, 2025 – Morning Session

Name	Institution	Project
Alejandro Rodríguez S.	SUGESE	Seguimiento RN 2
Celia González Huang	SUGESE	GRMA
Roy Barrantes Jimenez	Lanamme UCR	Operativo #1 Ruta 2
Paulo Ruiz Cubillo	Universidad de Costa Rica	Ruta 2
Pablo Agüero Barrantes	Lanamme UCR	Op. #1 (Ruta 2)
Roberto Villalobos Herrera	UCR	RN 2
Omar Darío Cardona A.	Eq. consultor	RN 2
Mabel C. Marulanda F.	Equipo consultor	—
Julián Trejos V.	Lanamme	RN 2

September 3, 2025 – Afternoon Session

Name	Institution	Project
Jorge Segura Guzmán	MAG	—
Mauricio Chacón N.	MAG	—
Rosario Ureña Mora	SEPSA	Agropecuario
Mabel Marulanda	Eq. Consultor	—
Ana Laura Ruiz Sánchez	SBD	Agropecuario
German Brenes Cerdas	SBD	Agropecuario
Alonso Brenes Torres	INGENIAR	—
Erika Gómez Alfaro	MAG	—
Jorge Alfaro Figueroa	SUGESE	Agricultura
Liliana Carreño	CIMNE	Eq. Consultor
Stuart Fraser	GRMA	—

Name	Institution	Project
Rolando Castro F.	Ingeniar	—
Fabián Bonilla V.	SBD	Agricultura
Luis Ramírez	SBD	Agricultura

September 4, 2025 – Morning Session

Name	Institution	Project
M. Cambronerio Arias	Sugese	Estratégico
Ana Cecilia Castro	Sugese	Estratégico
Gabriel Bernal	Ingeniar - CIMNE	Consultor
Alonso Brenes Torres	INGENIAR	—
Sergio Alvarez González	Lanamme UCR	Estratégico
Alonso Ulate Castillo	Lanamme UCR	Estratégico Heredia
Rolando Castro F.	Ingeniar	—
Rodolfo Rothe Cordero	Municipalidad Heredia	Estratégico Heredia
Karol Fallas Corrales	Municipalidad de Heredia	Heredia
Lorelly Marín Mena	Municipalidad de Heredia	Heredia
Silvia Bolaños Castro	Consultora Independiente	Heredia
Catalina Artavia Pereira	CNE	Heredia

September 4, 2025 – Afternoon Session

Name	Institution	Project
Jorge Esteban Masis Aguilar	GIZ	Operativo 3 - Futurismo
Nicolás Morales Miranda	GIZ	Operativo 3 - Futurismo
Celia González Haug	SUGESE	
Liliana Carreño	CIMNE	Grupo Consultor
Omar Darío Cardona	Ingeniar	Grupo Consultor
Mabel Marulanda	Ingeniar	Grupo Consultor
Paula Marulanda	Ingeniar	Grupo Consultor
Alonso Brenes	Ingeniar	Grupo Consultor

WORKSHOP 3 ATTENDANCE

TOTAL ATTENDEES: 37

FEMALE: 16

MALE: 21

January 27, 2026 – Morning Session

Name	Institution	Project
María Cambronero Arias	SUGESE	Estratégico
Celia González Huang	SUGESE	GRMA
Alejandro Rodríguez S.	SUGESE	Operativo 1 - RN 2
Ana Cecilia Castro	SUGESE	Estratégico
Jorge Alfaro Figueroa	SUGESE	Agricultura
Cheiling Venegas Villalobos	Municipalidad Heredia	Estratégico
Rodolfo Rothe Cordero	Municipalidad Heredia	Estratégico
José Valerín Román	MAG	Operativo 2 - Agricultura
Paulo Ruiz Cubillo	Escuela de Geología - UCR	Estratégico & Operativo 1 - RN 2
Pablo Agüero Barrantes	Lanamme UCR	Operativo 1 - RN 2
Roy Barrantes Jiménez	Lanamme UCR	Operativo 1 - RN 2
Julián Trejos Villalobos	Lanamme UCR	Operativo 1 - RN 2
Ana Lucia Elizondo S.	Lanamme UCR	Estratégico & Operativo 1 - RN 2
Ana Laura Ruiz Sánchez	SBD	Operativo 2 - Agropecuario
Susan Mora Castro	Internacional de Seguros	Operativo 3 - Futurismo
Christian Salazar Chacón	MAG - SEPSA	Operativo 2 - Agropecuario
Rossy Trigueros Elizondo	Ministerio de Hacienda	
Ariel Barrantes Soto	Ministerio de Hacienda	Operativo 1 - RN 2 & Estratégico
Nicolás Morales	GIZ	Operativo 3 - Futurismo
Alvaro Montero Sánchez	UCR - FCE	
Catalina Artavia Pereira	DCC - MINAE	Estratégico
Omar D. Cardona	Ingeniar	Grupo consultor
Gabriel Bernal	Ingeniar	Grupo consultor
Mabel Marulanda	Ingeniar	Grupo consultor
David Felipe Rincón	Ingeniar	Grupo consultor
Sthefania Grajales N	CIMNE	Grupo consultor
Liliana Carreño	CIMNE	Grupo consultor
Alonso Brenes Torres	Ingeniar	Grupo consultor
Rolando Castro Torres	Ingeniar	Grupo consultor
Andrés Real	GRMA	GRMA

January 27, 2026 – Afternoon Session

Name	Institution	Project
Alejandro Rodríguez S.	SUGESE	Operativo 1 - RN 2
Celia González Huang	SUGESE	GRMA
María Cambronero Arias	SUGESE	Estratégico
Ana Cecilia Castro	SUGESE	Estratégico

Name	Institution	Project
Jorge Alfaro Figueroa	SUGESE	Agricultura
Ana Lucia Elizondo S.	Lanamme UCR	Estratégico & Operativo 1 - RN 2
Paulo Ruiz Cubillo	Escuela de Geología - UCR	Estratégico & Operativo 1 - RN 2
Pablo Agüero Barrantes	Lanamme UCR	Operativo 1 - RN 2
Roy Barrantes Jiménez	Lanamme UCR	Operativo 1 - RN 2
Julián Trejos Villalobos	Lanamme UCR	Operativo 1 - RN 2
Christian Salazar Chacón	MAG - SEPSA	Operativo 2 - Agropecuario
José Valerín Román	MAG	Operativo 2 - Agricultura
Rossy Trigueros Elizondo	Ministerio de Hacienda	
Nicolás Morales	GIZ	Operativo 3 - Futurismo
Carlos Picado Rojas	CNE	—
Catalina Artavia Pereira	DCC - MINAE	Estratégico
Cheiling Venegas Villalobos	Municipalidad Heredia	Estratégico
Ana Laura Ruiz Sánchez	SBD	Operativo 2 - Agropecuario
Omar D. Cardona	Ingeniar	Grupo consultor
Gabriel Bernal	Ingeniar	Grupo consultor
Mabel Marulanda	Ingeniar	Grupo consultor
David Felipe Rincón	Ingeniar	Grupo consultor
Sthefania Grajales N	CIMNE	Grupo consultor
Liliana Carreño	CIMNE	Grupo consultor
Alonso Brenes Torres	Ingeniar	Grupo consultor
Rolando Castro Torres	Ingeniar	Grupo consultor
Andrés Real	GRMA	GRMA

January 28, 2026 – Morning Session

Name	Institution	Project
Jorge Alfaro Figueroa	SUGESE	Agricultura
Alejandro Rodríguez S.	SUGESE	Operativo 1 - RN 2
Ana Cecilia Castro	SUGESE	Estratégico
Ignacio Bustamante	SUGESE	
Siviany Araya Vargas	SUGESE	
Isaac López Rodríguez	SUGESE	
María Cambronero Arias	SUGESE	Estratégico
Celia González Huang	SUGESE	GRMA
Paulo Ruiz Cubillo	Escuela de Geología - UCR	Estratégico & Operativo 1 - RN 2
Pablo Agüero Barrantes	Lanamme UCR	Operativo 1 - RN 2
Roy Barrantes Jiménez	Lanamme UCR	Operativo 1 - RN 2
Alonso Ulate Castillo	Lanamme UCR	Operativo 1 - RN 2

Name	Institution	Project
Christian Salazar Chacón	MAG - SEPSA	Operativo 2 - Agropecuario
José Valerín Román	MAG	Operativo 2 - Agricultura
Cheiling Venegas Villalobos	Municipalidad Heredia	Estratégico
Alonso Alvarado Oviedo	Municipalidad Heredia	Estratégico
Ana Laura Ruiz Sánchez	SBD	Operativo 2 - Agropecuario
Marilyn Calvo Méndez	IMN - MINAE	
Katia Carvajal Tobar	IMN - MINAE	
Silvia Bolaños Castro	SLONTIX	Estratégico
Omar D. Cardona	Ingeniar	Grupo consultor
Gabriel Bernal	Ingeniar	Grupo consultor
Mabel Marulanda	Ingeniar	Grupo consultor
David Felipe Rincón	Ingeniar	Grupo consultor
Sthefania Grajales N	CIMNE	Grupo consultor
Liliana Carreño	CIMNE	Grupo consultor
Alonso Brenes Torres	Ingeniar	Grupo consultor
Rolando Castro Torres	Ingeniar	Grupo consultor
Andrés Real	GRMA	GRMA

January 29, 2026 – Morning Session

Name	Institution	Project
María Cambronero Arias	SUGESE	Estratégico
Alejandro Rodríguez S.	SUGESE	Operativo 1 - RN 2
Celia González Huang	SUGESE	GRMA
Paulo Ruiz Cubillo	Escuela de Geología - UCR	Estratégico & Operativo 1 - RN 2
Pablo Agüero Barrantes	Lanamme UCR	Operativo 1 - RN 2
Roy Barrantes Jiménez	Lanamme UCR	Operativo 1 - RN 2
Omar D. Cardona	Ingeniar	Grupo consultor
Gabriel Bernal	Ingeniar	Grupo consultor
Mabel Marulanda	Ingeniar	Grupo consultor
David Felipe Rincón	Ingeniar	Grupo consultor
Sthefania Grajales N	CIMNE	Grupo consultor
Liliana Carreño	CIMNE	Grupo consultor
Alonso Brenes Torres	Ingeniar	Grupo consultor
Rolando Castro Torres	Ingeniar	Grupo consultor
Andrés Real	GRMA	GRMA

January 29, 2026 – Afternoon Session

Name	Institution	Project
Ana Cecilia Castro	SUGESE	Estratégico
María Cambronero Arias	SUGESE	Estratégico
Christian Salazar Chacón	MAG - SEPSA	Operativo 2 - Agropecuario
José Valerín Román	MAG	Operativo 2 - Agricultura
Ana Laura Ruiz Sánchez	SBD	Operativo 2 - Agropecuario
Omar D. Cardona	Ingeniar	Grupo consultor
Gabriel Bernal	Ingeniar	Grupo consultor
Mabel Marulanda	Ingeniar	Grupo consultor
David Felipe Rincón	Ingeniar	Grupo consultor
Sthefania Grajales N	CIMNE	Grupo consultor
Liliana Carreño	CIMNE	Grupo consultor
Alonso Brenes Torres	Ingeniar	Grupo consultor
Rolando Castro Torres	Ingeniar	Grupo consultor
Andrés Real	GRMA	GRMA

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Name	Institution	Project
Ana Cecilia Castro	SUGESE	Estratégico
María Cambronero Arias	SUGESE	Estratégico
Celia González Huang	SUGESE	GRMA
Paulo Ruiz Cubillo	Escuela de Geología - UCR	Estratégico & Operativo 1 - RN 2
Alonso Ulate Castillo	Lanamme UCR	Estratégico & Operativo 1 - RN 2
Sergio Alvarez González	Lanamme UCR	Estratégico
Catalina Artavia Pereira	DCC - MINAE	Estratégico
Cheiling Venegas Villalobos	Municipalidad Heredia	Estratégico
Rodolfo Rothe Cordero	Municipalidad Heredia	Estratégico
Karol Fallas Corrales	Municipalidad Heredia	Estratégico
Alonso Alvarado Oviedo	Municipalidad Heredia	Estratégico
Lorelly Marín Mena	Municipalidad Heredia	Estratégico
Silvia Bolaños Castro	SLONTIX	Estratégico
Omar D. Cardona	Ingeniar	Grupo consultor
Gabriel Bernal	Ingeniar	Grupo consultor
Mabel Marulanda	Ingeniar	Grupo consultor
David Felipe Rincón	Ingeniar	Grupo consultor
Sthefania Grajales N	CIMNE	Grupo consultor
Liliana Carreño	CIMNE	Grupo consultor
Alonso Brenes Torres	Ingeniar	Grupo consultor

Name	Institution	Project
Rolando Castro Torres	Ingeniar	Grupo consultor
Andrés Real	GRMA	GRMA

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Name	Institution	Project
Celia González Huang	SUGESE	GRMA
María Cambronero Arias	SUGESE	Estratégico
Germán Rodríguez	SUGESE	Operativo 3 - Futurismo
Jorge Masis Aguilar	GIZ	Operativo 3 - Futurismo
Mariana Garita F	ICT	Operativo 3 - Futurismo
Susan Mora Castro	Internacional de Seguros	Operativo 3 - Futurismo
David Villalobos Chacón	BN Seguros	Operativo 3 - Futurismo
Omar D. Cardona	Ingeniar	Grupo consultor
Gabriel Bernal	Ingeniar	Grupo consultor
Mabel Marulanda	Ingeniar	Grupo consultor
David Felipe Rincón	Ingeniar	Grupo consultor
Sthefania Grajales N	CIMNE	Grupo consultor
Liliana Carreño	CIMNE	Grupo consultor
Alonso Brenes Torres	Ingeniar	Grupo consultor
Rolando Castro Torres	Ingeniar	Grupo consultor
Andrés Real	GRMA	GRMA

WORKSHOP 4 ATTENDANCE

TOTAL ATTENDEES: 53

FEMALE: 17

MALE: 36

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Name	Institution	Project
Ana Cecilia Castro	SUGESE	Estratégico
María Cambronero Arias	SUGESE	Turismo
German Rodríguez	SUGESE	Estratégico
Jorge Alfaro Figueroa	SUGESE	Agricultura
Celia González Huang	SUGESE	GRMA
Alejandro Rodríguez S.	SUGESE	Operativo 1 - RN 2
Pablo Agüero Barrantes	Lanamme UCR	Operativo 1 - RN 2
Roy Barrantes Jiménez	Lanamme UCR	Operativo 1 - RN 2

Name	Institution	Project
Julián Trejos Villalobos	Lanamme UCR	Operativo 1 - RN 2
Sergio Alvarez González	Lanamme UCR	Operativo 1 - RN 2
Alonso Ulate Castillo	Lanamme UCR	Operativo 1 - RN2
Karol Fallas C	Municipalidad Heredia	Estratégico
Bryan Rodríguez G	Municipalidad Heredia	Estratégico
Alonso Alvarado Oviedo	Municipalidad Heredia	Estratégico
Rodolfo Rothe Cordero	Municipalidad Heredia	Estratégico
Christian Salazar Chacón	MAG - SEPSA	Operativo 2 - Agropecuario
Ana Laura Ruiz Sánchez	SBD	Operativo 2 - Agropecuario
Carlos Picado R	CNE	
Silvia Bolaños	SLONTIX	Estratégico
Omar D. Cardona	Ingeniar	Grupo consultor
Gabriel Bernal	Ingeniar	Grupo consultor
Mabel Marulanda	Ingeniar	Grupo consultor
Sergio Herrera	Ingeniar	Grupo consultor
Liliana Carreño	CIMNE	Grupo consultor
Andrés Real	GRMA	GRMA

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Name	Institution	Project
Alejandro Rodríguez S.	SUGESE	Operativo 1 - RN 2
Siviany Araya Vargas	SUGESE	Operativo 1 - RN 2
Isaac López Rodríguez	SUGESE	
Celia González Huang	SUGESE	GRMA
Jorge Alfaro Figueroa	SUGESE	Agricultura
Ana Cecilia Castro	SUGESE	Estratégico
Alonso Ulate Castillo	Lanamme UCR	Operativo 1 - RN2
Pablo Agüero Barrantes	Lanamme UCR	Operativo 1 - RN 2
Roy Barrantes Jiménez	Lanamme UCR	Operativo 1 - RN 2
Sergio Alvarez González	Lanamme UCR	Operativo 1 - RN 2
Karol Fallas C	Municipalidad Heredia	Estratégico
Bryan Rodríguez G	Municipalidad Heredia	Estratégico
Alonso Alvarado Oviedo	Municipalidad Heredia	Estratégico
Cheiling Venegas Villalobos	Municipalidad Heredia	Estratégico
Rodolfo Rothe Cordero	Municipalidad Heredia	Estratégico
Christian Salazar Chacón	MAG - SEPSA	Operativo 2 - Agropecuario

Name	Institution	Project
Ana Laura Ruiz Sánchez	SBD	Operativo 2 - Agropecuario
Silvia Bolaños	SLONTIX	Estratégico
Marilyn Calvo Méndez	IMN	
Sergio Mora C	ARX	Consultor
Omar D. Cardona	Ingeniar	Grupo consultor
Gabriel Bernal	Ingeniar	Grupo consultor
Mabel Marulanda	Ingeniar	Grupo consultor
Sergio Herrera	Ingeniar	Grupo consultor
Liliana Carreño	CIMNE	Grupo consultor
Andrés Real	GRMA	GRMA
Nick Moody	GRMA	GRMA
Alonso Brenes Torres	Ingeniar	Grupo consultor
Rolando Castro Torres	Ingeniar	Grupo consultor

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Name	Institution	Project
Alejandro Rodríguez S.	SUGESE	Operativo 1 - RN 2
Celia González Huang	SUGESE	GRMA
Pablo Agüero Barrantes	Lanamme UCR	Operativo 1 - RN 2
Roy Barrantes Jiménez	Lanamme UCR	Operativo 1 - RN 2
Roberto Villalobos Herrera	UCR	Operativo 1 - RN 2
Sergio Mora C	ARX	Consultor
Omar D. Cardona	Ingeniar	Grupo consultor
Gabriel Bernal	Ingeniar	Grupo consultor
Mabel Marulanda	Ingeniar	Grupo consultor
Sergio Herrera	Ingeniar	Grupo consultor
Liliana Carreño	CIMNE	Grupo consultor
Nick Moody	GRMA	GRMA
Alonso Brenes Torres	Ingeniar	Grupo consultor
Rolando Castro Torres	Ingeniar	Grupo consultor

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Name	Institution	Project
Celia González Huang	SUGESE	GRMA
Jorge Alfaro Figueroa	SUGESE	Agricultura

Name	Institution	Project
Christian Salazar Chacón	MAG - SEPSA	Operativo 2 - Agropecuario
Ana Laura Ruiz Sánchez	SBD	Operativo 2 - Agropecuario
Marlene Villanuevas	SBD	
Luis Ramírez	SBD	Operativo 2 - Agropecuario
Sergio Mora C	ARX	Consultor
Omar D. Cardona	Ingeniar	Grupo consultor
Gabriel Bernal	Ingeniar	Grupo consultor
Mabel Marulanda	Ingeniar	Grupo consultor
Sergio Herrera	Ingeniar	Grupo consultor
Liliana Carreño	CIMNE	Grupo consultor
Andrés Real	GRMA	GRMA
Nick Moody	GRMA	GRMA
Alonso Brenes Torres	Ingeniar	Grupo consultor

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Name	Institution	Project
Ana Cecilia Castro	SUGESE	Estratégico
María Cambronero Arias	SUGESE	Estratégico
Celia González Huang	SUGESE	GRMA
Sergio Alvarez González	Lanamme UCR	Operativo 1 - RN 2
Alonso Ulate Castillo	Lanamme UCR	Operativo 1 - RN2
Alonso Alvarado Oviedo	Municipalidad Heredia	Estratégico
Rodolfo Rothe Cordero	Municipalidad Heredia	Estratégico
Karol Fallas C	Municipalidad Heredia	Estratégico
Lorelly Marin Mena	Municipalidad Heredia	Estratégico
Huberth Méndez Hernández	ONU-HABITAT	Código de adaptación
Vladimir Naranjo Castillo	ONU-HABITAT	Código de adaptación
José Luis Martínez	ONU-HABITAT	Código de adaptación
Silvia Bolaños	SLONTIX	Estratégico
Omar D. Cardona	Ingeniar	Grupo consultor
Gabriel Bernal	Ingeniar	Grupo consultor
Mabel Marulanda	Ingeniar	Grupo consultor
Sergio Herrera	Ingeniar	Grupo consultor
Liliana Carreño	CIMNE	Grupo consultor
Andrés Real	GRMA	GRMA
Nick Moody	GRMA	GRMA
Alonso Brenes Torres	Ingeniar	Grupo consultor

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Name	Institution	Project
Celia González Huang	SUGESE	GRMA
María Cambronero Arias	SUGESE	Turismo
German Rodríguez	SUGESE	Estratégico
Tomás Soley	SUGESE	
Nicolás Morales	GIZ	Operativo 3 - Futurismo
Susan Mora Castro	Internacional de Seguros	Operativo 3 - Futurismo
Victor Salazar	Sagicor	Operativo 3 - Futurismo
Andrea da Cruz Albertazzi	ICT	Operativo 3 - Futurismo
Omar D. Cardona	Ingeniar	Grupo consultor
Gabriel Bernal	Ingeniar	Grupo consultor
Mabel Marulanda	Ingeniar	Grupo consultor
Sergio Herrera	Ingeniar	Grupo consultor
Liliana Carreño	CIMNE	Grupo consultor
Andrés Real	GRMA	GRMA
Nick Moody	GRMA	GRMA
Alonso Brenes Torres	Ingeniar	Grupo consultor

April 30, 2026 – Morning Session

Name	Institution	Project
María Cambronero Arias	SUGESE	Estratégico
Jorge Alfaro Figueroa	SUGESE	Agricultura
Celia González Huang	SUGESE	GRMA
Tomás Soley	SUGESE	
Julián Trejos Villalobos	Lanamme UCR	Operativo 1 - RN 2
Víctor Sánchez González	Municipalidad Heredia	Estratégico
Karol Fallas C	Municipalidad Heredia	Estratégico
Cheiling Venegas Villalobos	Municipalidad Heredia	Estratégico
Kenneth Arguedas Navarro	Municipalidad Heredia	Estratégico
Ariel Barrantes Soto	Municipalidad Heredia	Estratégico
Andrea da Cruz Albertazzi	ICT	Operativo 3 - Futurismo
Antonio Farah Matarrita	ICT	Operativo 3 - Futurismo
Sabrina Geppert	GIZ	
Luis Ramírez	SBD	Operativo 2 - Agropecuario
Erika Gómez Alfaro	MAG - SEPSA	Operativo 2 - Agropecuario
Erick	MAG - SEPSA	

Name	Institution	Project
Mauricio Chacón Navarro	MAG - SEPSA	
Carlos Picado R	CNE	
María José Molina Montero	BCCR	
Johny Aguilar Madrigal	BCCR	
Nazareth Rojas Morales	DCC - MINAE	
Susan Mora Castro	Internacional de Seguros	Operativo 3 - Futurismo
Mauricio Castro Borbón	Bomberos	
Héctor Guerrero Gómez	Fuerza Pública Heredia	
Cristian Quesada Alfaro	Cruz Roja Costarricense	
Johann Montero Araya	ESPH	Estratégico
Laura Castro	ESPH	
Fernando J. Vique Pacheco	Sagícor	Operativo 3 - Futurismo
Omar D. Cardona	Ingeniar	Grupo consultor
Gabriel Bernal	Ingeniar	Grupo consultor
Mabel Marulanda	Ingeniar	Grupo consultor
Sergio Herrera	Ingeniar	Grupo consultor
Liliana Carreño	CIMNE	Grupo consultor
Andrés Real	GRMA	GRMA
Nick Moody	GRMA	GRMA
Alonso Brenes Torres	Ingeniar	Grupo consultor