

**Annex 18 Minutes of the Fourth In-Person Meeting of the 4GEON**

**Annex 18 Report on the Fourth In-Person Meeting of the 4GEON 2025**

**IGCP Project number 751: 4GEON: Four Continents Connected through Playful Geoeducation**

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### Summary of the Annual Meeting Activities

The 4GEON project—Four Continents Connected through Playful Geoeducation—held its 2025 annual meeting in Peru’s Colca and Andagua Volcanoes UNESCO Global Geopark from September 13 to 22. This international gathering united delegations from Tanzania, the Philippines, Nicaragua, the Czech Republic, and Peru, advancing an interdisciplinary, transcontinental effort to bolster geoeducation, sustainable geotourism, and geological heritage management. The inaugural session in Arequipa outlined the meeting’s guidelines, itinerary, and technical activities in Caylloma and Castilla provinces. Delegations reviewed project objectives, engaged with volunteers and institutional partners, and underscored international cooperation’s role in enhancing education, institutional capacity, and applied scientific knowledge exchange. Each delegation reported progress on geoeducation and heritage management in their geoparks.

Fieldwork featured technical visits to Colca Canyon, including school-based educational sessions, meetings with specialist teachers, and assessments of strategic geosites. These integrated pedagogical and scientific perspectives into territorial evaluations. Visits to schools in Sibayo and Huambo showcased 4GEON’s geoeducation impact, with students presenting on geodiversity and cultural heritage, fostering intercultural dialogue. The Caylloma Educational Unit meeting strengthened ties between the project and regional education, aiming to expand geo-schools and embed geoscientific content in local curricula. Emblematic geosites—such as Toccra, Callalli Castles, Cruz del Cóndor, Jayaquima, and Mamacocha Lagoon—underwent technical surveys to update the TOURS MAN platform.

From September 17, activities shifted to the Valley of the Volcanoes, featuring meetings with the 4GEON Club at Nuestra Señora de la Asunción School and visits to sites including the Twin Volcanoes, Andagua viewpoint, and Antaymarca Citadel. Events in Chilcaymarca and Chachas linked geoscience with local culture through the “Geomikhuna” geocompetition and community tourism, blending traditional knowledge, sustainable gastronomy, and geoeducation. Certificates were awarded to students in Chachas, Andagua, and Chilcaymarca, as well as to project volunteers and collaborators. The Geopark Management Committee’s closing session evaluated achievements, solidified commitments, and planned future actions to advance 4GEON and the geopark within the UNESCO network.



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summarizes daily activities—such as stakeholder meetings, on-site assessments, workshops, training sessions, and community engagement—while highlighting key objectives achieved and any logistical or contextual factors influencing implementation.

### **Saturday, 13 September: Arrival and Project Framing in Arequipa**

The mission commenced with 4GEON participants' arrival in Arequipa, followed by a joint lunch at Hotel Santa Marta. The Colca y Volcanes de Andagua (CVA) Geopark team presented the UNESCO Global Geopark's history, boundaries, and priorities. The afternoon featured reports on 4GEON project outcomes, beta-version TOURSMAN app instructions for fieldwork, and discussions of mission expectations.

#### **Opening Meeting**

Participants included: Tanzania (Rama Khatibu, Lightness Kyambile); Philippines (Karl Michael Din); Nicaragua (Deymisn Díaz); Czech Republic (Martina Pásková, David Zejda); Peru (Abraham Cáceres Cabanillas, Annie Oliveira, Brazilian Volunteer); Volunteers (Rodrigo Sacasqui); Sponsors (Romina Gonzales, ETERIA Group; Valentín Mallco).

Held on 13 September in Arequipa, this inaugural session marked the strategic launch of the IGCP-751 “4GEON” annual meeting. It presented the work plan, scientific objectives, and shared responsibilities across delegations from Tanzania, the Philippines, Nicaragua, the Czech Republic, and Peru. The Mobile Tourist Guide was introduced for geosite management, tourism monitoring, and geoscience-based education. Local volunteers and sponsors bolstered institutional coordination, with certificates awarded to collaborators to recognize their contributions to territorial implementation. This established the methodological and operational framework for subsequent fieldwork.

#### **Itinerary Overview**

The schedule covered visits in Castilla and Caylloma provinces, emphasizing geosites, communities, geoschools, and cultural elements. Additional activities encompassed 4GEON project explanations, Andagua Geopark presentations, certificate deliveries to volunteers and collaborators, and initial exchanges between international delegations and local stakeholders.

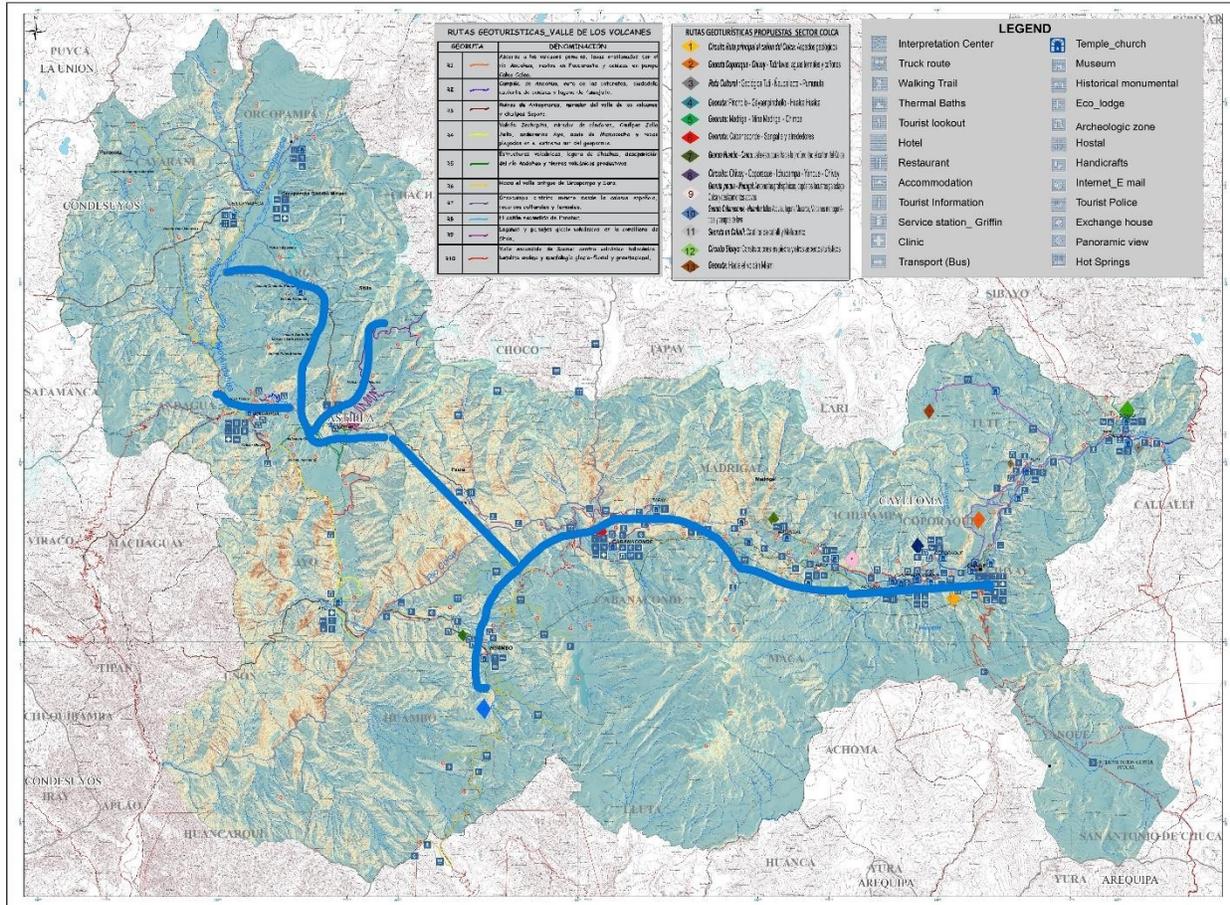


Figure 2 Individual locations where activities took place during the fourth In-Person Meeting of the 4GEON

### Sunday, 14 September: Colca Canyon, Toccra, and Thermal/Archaeological Sites

After departing for Colca Canyon, the group visited the Toccra Interpretation Centre within the Salinas y Aguada Blanca National Reserve, discussing its potential as the first geosite, reviewing educational opportunities, and assessing integration into the tourist app. The centre’s exhibits and viewpoint illustrate high Andean ecosystems, providing a natural introduction to the Colca landscape. Subsequent stops included a volcano viewpoint, accommodation in Cabanaconde, and afternoon visits to Calera hot springs or Uyo citadel. The Callalli Castles—iconic geological formations—enabled direct observation of eroded landscape structures. The Uyo citadel highlights both geodiversity and cultural heritage. The day concluded with reflections on how these sites demonstrate connections between geosciences, tourism, and local livelihoods.

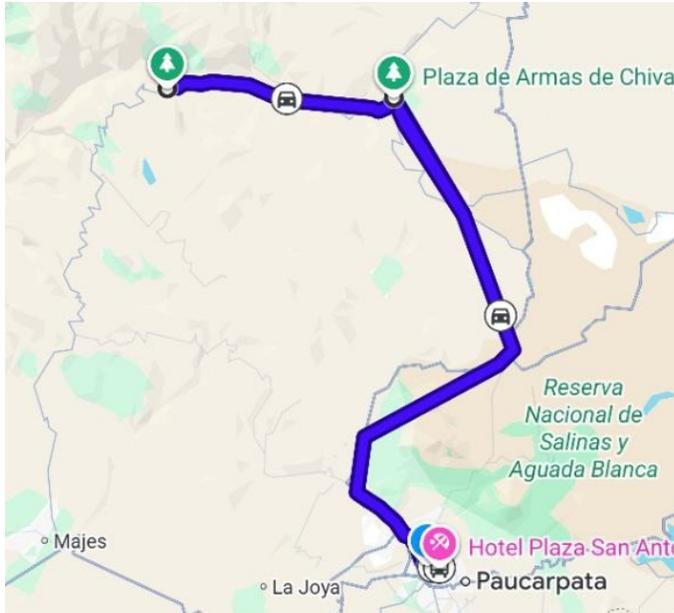


Figure 3 Sunday, 14 September: Colca Canyon, Toccra, and Thermal/Archaeological Sites

### Monday, 15 September: Authorities, Autocolca, and the ‘Stone Town’

The morning began with a meeting with local authorities and Autocolca, where 4GEON and CVA UGGP representatives discussed geolocation, visitor management, and community participation in the geopark. This was followed by a visit to Sibayo, the ‘Stone Village,’ recognized by UNWTO as one of the world’s best tourist villages. Participants experienced experiential tourism activities (hiking, weaving, traditional agriculture) and observed how stone architecture, ichu-roofed houses, and Andean landscapes constitute a geosite combining tangible and intangible heritage. At Sibayo Educational Institution, students delivered thematic presentations on geology, natural, and cultural heritage; international delegates evaluated 4GEON geolocation implementation levels. A pedagogical exchange occurred between local teachers and the international team. In the afternoon, the group traveled to Callalli, visiting the local school, Mullupunko caves, and the Enchanted Castles of Callalli—volcanic rock formations shaped by erosion. Discussions addressed capturing these landscapes in concise narratives and photographs for Mobile Tourist Guide and community benefits from geo-interpretation.



Figure 4 Monday, 15 September: Authorities, Autocolca, and the ‘Stone Town’

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### Tuesday, 16 September: Cruz del Cóndor, Local School, and Puca Qocha

The morning focused on the Cruz del Cóndor viewpoint, a world-renowned panorama of Colca Canyon and Andean condor flights—an iconic geosite. The group discussed visitor flows, optimal observation times, interpretive panels, and safety measures. This was followed by visits to a local Educational Institution in Huambo district and Puca Qocha. School activities included active student-4GEON team meetings and Q&A sessions, where students explained their knowledge and valuation of local geopark elements. International participants shared experiences, drew comparisons, and motivated students. Specialist teachers from UGEL Caylloma participated. The 4GEON Project was presented, outlining its geoeducation scope and international cooperation. Local teachers expressed strong interest in geo-school networks, geoscience curriculum integration, and international activity participation. This strengthened project connections to the regional education sector. The Qocha/Montel Volcano viewpoint enabled observations of geoeducation content integration into school field trips and identification of future 4GEON GeoSchool opportunities in Colca.

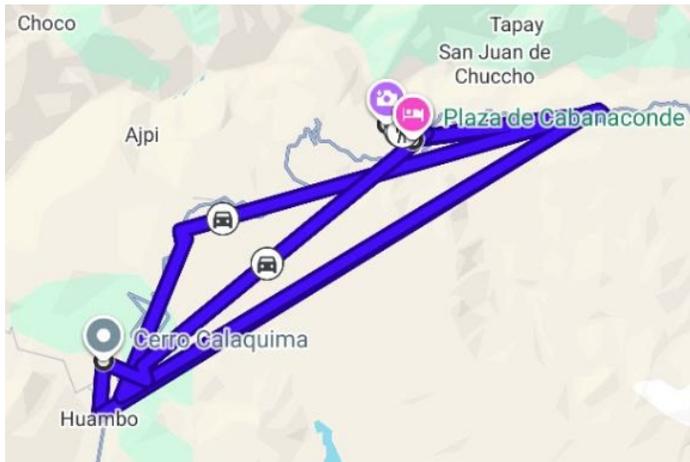


Figure 5 Tuesday, 16 September: Cruz del Cóndor, Local School, and Puca Qocha

### Wednesday, 17 September: To Valley of the Volcanoes and Mamacocho

After early breakfast, the mission departed for Andagua District in the Valley of the Volcanoes, receiving a reception and visiting Ayo's eco-museum of vines and piscos. Local hosts explained traditional production methods and discussed integrated interpretations of gastronomy, agriculture, and geoheritage. Additional activities included educational sessions with elementary school students, exhibitions/explanations of local geoproducts, and demonstrations highlighting the valley's volcanic identity. The group transferred from Caylloma to Castilla province (central Colca Geopark and Volcanoes of Andagua area), arriving and overnighing in Andagua, capital of the Valley of the Volcanoes, as a strategic exploration base. In the afternoon, they visited Laguna Mamacocho—a large spring-fed lagoon amid volcanic landscapes, biodiversity, and Andean scenery. Identified as a prime TOURSMAN candidate, notes covered access, interpretive themes, and visitation risks. Activities encompassed hydrogeological system observation, technical TOURSMAN evaluation (inventory, accessibility, interpretation), and lake ecosystem assessment.



Figure 6 Wednesday, 17 September: To Valley of the Volcanoes and Mamacocha

### Thursday, 18 September: Start of Indigenous Knowledge Research in Andagua

During breakfast at Andagua's El Manzanal, Martina noted this day marked the formal initiation of indigenous knowledge research for the planned article. The morning featured geolocation at Nuestra Señora de Asunción Andagua School, testing 4GEON methods for active learning and student participation. This was followed by an ascent of the Twin Volcanoes (Huanacaure), guided by the Andagua Tourism Association, which shared local stories, practical trail/hiking knowledge, safety protocols, and seasonal variations. In the afternoon, participants visited the Antaymarca viewpoint and archaeological site with the Andagua Tourism Organisation. Discussions examined integrating pre-Hispanic agricultural terraces, stone structures, and volcanic panoramas as a geocultural site, alongside community organization roles in geotourism product development. The day concluded with experiential tourism activities and an informative session on local organizations' geopark role perceptions.



Figure 7 Thursday, 18 September: Start of Indigenous Knowledge Research in Andagua

### Friday, 19 September: Chilcaymarca, Sol Naciente Ecomuseum, and Hybrid Meeting

The morning featured a visit to the Sol Naciente Ecomuseum in Chapacoco (Chilcaymarca), where Don Lino and community members demonstrated ancestral clay-working techniques. Locals explained traditional production processes and the link between ceramic materials and local volcanism. The ceramics ecomuseum exemplified community-led interpretation, blending knowledge preservation, cultural identity, and income generation. A subsequent geolocation session with Chilcaymarca School's 4GEON Club highlighted the Church of Santiago Apóstol de Chilcaymarca—an emblematic temple whose architecture, legends, and spiritual significance

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enhance geopark narratives. Students, teachers, and Indigenous community members shared perspectives on the church's ties to village life and the broader Valley of the Volcanoes.

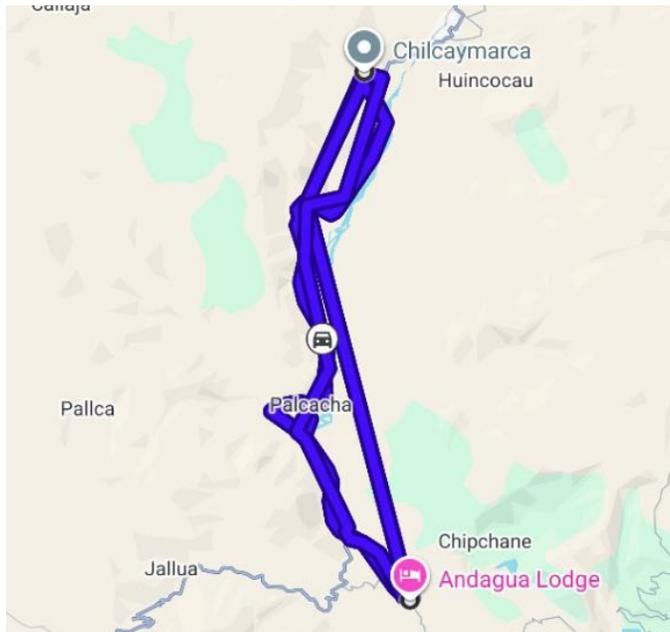


Figure 8 Friday, 19 September: Chilcaymarca, Sol Naciente Ecomuseum, and Hybrid Meeting

### International Virtual Meeting – 19 September, Chilcaymarca

Held at Chilcaymarca Municipality, this virtual meeting served as a pivotal hub for intercontinental coordination. Representatives from all four participating continents joined local authorities, teachers, and students. Professor Josef Zelenka (Czech Republic) delivered insights on landscape interpretation, geotourism, and educational technologies, plus social networks Pinterest and Nightcafe for geotourism promotion. Each geopark reported progress, structural challenges, and geoeducation achievements, facilitating methodological comparisons, gap identification, and shared innovations. Remote participants included Professor Zelenka (online), alongside local stakeholders and 4GEON team members. In the afternoon, the group returned to Andagua for a hybrid 4GEON meeting and workshop on Los Guardianes del Geoparque (The Guardians of the Geopark). Abraham Cáceres presented its use as a narrative tool personalizing geological heritage for students; Martina Pásková led discussions on adapting similar formats across geoparks, with online partners contributing translation and contextualization suggestions.

### Saturday, 20 September: Chachas, Jojoloche Viewpoint, and Chachas Lagoon

The mission traveled from El Manzanal to Chachas for a 4GEON Club session at Chachas College and collaboration with the Chachas Tourism Association, demonstrating youth-tourism synergies. The group visited Jojoloche viewpoint (panoramic village/valley vistas; TOURSMAN evaluation), agricultural terraces, and Laguna de Chachas. Post-lunch, in partnership with the tourism association, agricultural experiences occurred near Chachas Lagoon; Soporo viewpoint and Canallamauras volcano visits reinforced volcanic geomorphology and community landscape

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use. Chachas Lagoon underwent technical inventory (geology, biodiversity, connectivity). The Church of San Pedro de Chachas—featuring 17th-century stone architecture, gold-leaf altars, and historical significance—was evaluated as a TOURSMAN geosite candidate.



Figure 9 Saturday, 20 September: Chachas, Jojoloche Viewpoint, and Chachas Lagoon

### Sunday, 21 September: Return to Arequipa

The mission returned to Arequipa, stopping for lunch in Aplao and arriving afternoon at Hotel San Lázaro, concluding fieldwork and preparing for final coordination with CVA UGGP and academic partners.

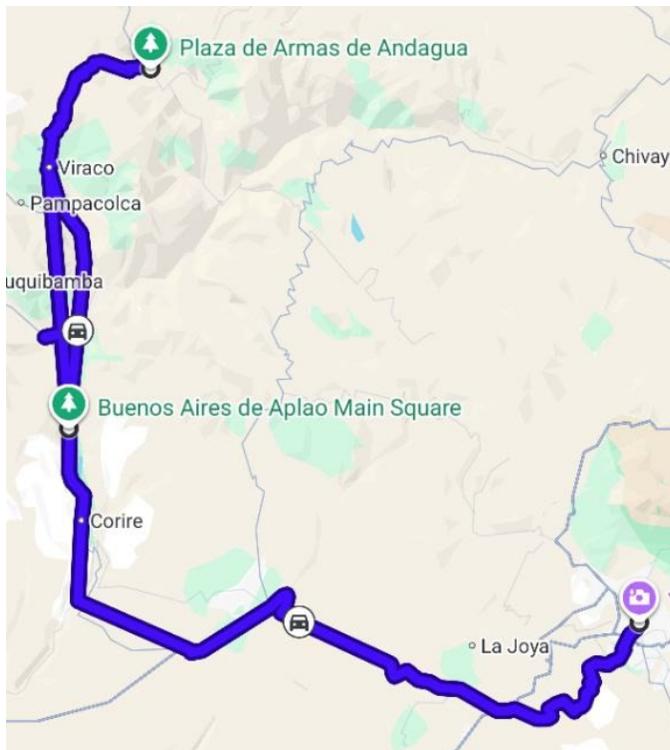


Figure 10 Sunday, 21 September: Return to Arequipa

### Saturday, 22 September: Arequipa - Final Management Committee Meeting

The 4GEON face-to-face annual meeting in Peru convened on Monday, 22 September 2025, at the Mario Vargas Llosa headquarters in Arequipa. This session united representatives from the UNESCO Global Geopark Colca Canyon and Andagua Volcanoes Valley (CVA UGGP), the 4GEON

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core team, associated geoparks, and stakeholders following the joint field mission conducted from 13 to 21 September 2025 in Colca Canyon and the Volcanoes Valley.

### **Attendees**

CVA UGGP: Abraham Cáceres Cabanillas (coordinator/local host), Ana María Gutiérrez (Regional Government of Arequipa), Frans Grup (Catholic University of Santa María), James Posso (GEOLAC), Liz Payahuanca (Scientific Coordinator), Luis Gonzales (UGEL Caylloma).

International Delegations/Volunteers: Martina Pásková (project leader, Czech Republic), Luboš Gardoň (ICT/gamification, Czech Republic), David Zejda (digital tools, Czech Republic), Abraham Cáceres (CVA UGGP, Peru), Karl Michael Din (Bohol Island UGGp, Philippines), Rama Khatibu (Ngorongoro-Lengai UGGp, Tanzania).

Additional: CVA UGGP Board of Directors, technical team, local tourism/community organizations (Sibayo, Andagua, Chilcaymarca, Huambo, Chachas via field sessions), other 4GEON collaborators, local guides, and academic partners from Catholic University Arequipa.

### **Field Mission Overview**

The mission integrated guided geosite visits, meetings with local/Indigenous tourism associations, geoeducation with GeoClubs/schools, and a hybrid 4GEON workshop in Andagua. Objectives encompassed documenting ten model geosites for the TOURSMAN app, co-creating geotourism with Indigenous/local communities, and planning a scientific article on geosites/Indigenous knowledge. It further solidified ties among CVA UGGP, local universities, and the 4GEON network.

### **Closing Session Outcomes**

Held with the Geopark Management Committee and Arequipa Regional Government authorities, this forum synthesized achievements institutionally. Vice Governor Ana María Gutiérrez, academic Frans Grup, geotourism stakeholder James Posso, and technical/educational team members reviewed field visits, 4GEON's pedagogical model relevance, and science-education-development synergies. International delegations reported territorial progress, forging multilateral commitments for geo-schools, interpretive infrastructure, TOURSMAN enhancement, and international research promotion. The session formalized closure, delineating action plans for the next phase.

### **Agenda**

- Review of field mission objectives/structure (13–22 September 2025).
- Summary of visited geosites; selection of ten TOURSMAN model sites.
- Reflections on Indigenous/local tourism association collaboration.
- Geoeducation with CVA UGGP schools/4GEON Clubs.
- Hybrid Andagua meeting and Los Guardianes del Geoparque workshop.

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- Mobile Tourist Guide technical testing/next steps.
- Discussions with CVA UGGP Board/Catholic University.
- Joint scientific article on geosites/Indigenous knowledge.
- 4GEON/CVA UGGP action/follow-up elements.

### **Discussion with CVA UGGP Board of Directors (9:00–11:00)**

The Board meeting at Mario Vargas Llosa headquarters opened with an overview of the field mission's alignment with CVA UGGP management objectives. Board members praised the emphasis on local participation and affirmed geoeducation, Indigenous knowledge, and sustainable tourism as priorities for the next revalidation cycle. Key discussion points included: appreciation for joint work with schools, clubs, and community associations to enhance geopark legitimacy; agreement to integrate the ten selected geosites into official interpretive materials with standardized names, signage, and visual identity; encouragement for continued 4GEON support in training local guides and teachers on TOURSMAN and digital tools; emphasis on producing tangible Spanish-language products (brochures, posters, simplified guides) for municipalities, schools, and tour operators; and confirmation of collaboration on the scientific article, including institutional data provision and draft reviews.

### **Meeting with Catholic University of Arequipa (11:30 a.m.–1:00 p.m.)**

The session with university representatives focused on academic cooperation and research. Abraham Cáceres and Martina Pásková outlined the planned article on geosites and Indigenous knowledge, detailing a qualitative-comparative design integrating field observations, partnership interviews, and student activities. University representatives expressed interest in theses and internships on geoeducation, tourism, gender, and youth participation. Opportunities identified included joint seminars, guest lectures (with remote 4GEON contributions from Czech Republic, Philippines, Tanzania), and piloting short Spanish-language online modules on geoheritage and community tourism via the 4GEON e-learning platform. The meeting concluded with agreements to formalize cooperation through a memorandum of understanding and share data/materials for the article and future research.

### **Conclusion and Closing Session (13:00–15:00)**

During lunch and early afternoon, participants reflected collectively, recording these conclusions: the itinerary successfully integrated scientific, educational, and community dimensions, testing an adaptable model for other geoparks; Indigenous communities and tourism associations are central interpretive/tourism partners, with prominent voices in planned outputs; the ten geosites form a coherent “geosite circuit” showcasing Colca-Andagua landscape diversity for the Mobile Tourist Guide pilot testing; hybrid meetings and school activities validated stories, clubs, and youth leadership for geoeducation; academic partnerships like Catholic University will yield peer-reviewed publications and student training. Martina Pásková and Abraham Cáceres thanked local hosts, associations, schools, students, and international partners for their contributions.

## Summary of the Meeting Outcomes

### **Collaboration with indigenous and local tourism associations**

Abraham summarized a key mission achievement: systematic dialogue with Indigenous communities and tourism associations in Sibayo, Andagua, Chilcaymarca, and Chachas. Rather than observing geosites in isolation, the 4GEON team engaged local associations as co-guides and co-interpreters of the landscape. Key insights included: organizations seek recognition as knowledge holders—offering stories, practices, and interpretations complementing scientific descriptions; interest in co-branding geosites/experiences (experiential agriculture, weaving, clay crafts) under geopark labeling with equitable benefit/responsibility sharing; demand for accessible Spanish educational materials and involvement in TOURSMAN interpretive content/school activities; concerns over overtourism/carrying capacity at viewpoints, necessitating visitor management/safety measures. These inputs will inform the planned scientific article on geosites/Indigenous peoples, emphasizing joint management/co-interpretation at CVA UGGP.

### **Geoeducation Activities and 4GEON Clubs**

The mission enabled observation/support of 4GEON Clubs/school geoeducation in Peru. At Nuestra Señora de Asunción Andagua School, interactive 4GEON methods (group work, storytelling, simple field observations) proved effective for place-based tasks linking geology to daily life. In Chilcaymarca/Chachas, 4GEON Club sessions featured student projects, songs, drawings, and geopark observations; teachers/communities noted fostered pride, leadership, and local identity ties. The hybrid Guardians of the Geopark workshop demonstrated story-based materials (books/comics) for intercultural learning via recognizable locales. Bohol/Ngorongoro-Lengai partners observed parallels (geoclubs, festivals, competitions), enabling future student exchanges/parallel projects.

### **Mobile Tourist Guide Data Collection and Implementation**

David noted the Peru mission prioritized content gathering/analysis for the TOURSMAN app over full testing. The team documented ~10 Colca/Andagua geolocations—photographs, GPS coordinates, brief descriptions—with Abraham/CVA UGGP support, forming the first app portfolio. On-site testing validated tracking/geosite unlocking in real conditions, guiding further development.

## Action Items and Closing

### **CVA UGGP / Peru**

- Consolidate and validate the list of ten geosites selected during the mission, including final names, coordinates, and brief descriptions, and send them to David and Luboš for integration into TOURSMAN and project documentation.

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- Prepare a brief internal report summarising the participation of each indigenous and local tourism association (Sibayo, Andagua, Chilcaymarca, Chachas) and share it with the 4GEON team as reference material for the article.
- Coordinate with the directors of the schools in Andagua, Chilcaymarca, and Chachas to maintain and strengthen the 4GEON Clubs and GeoSchool activities initiated during the mission.

### **4GEON core team (Czech Republic)**

- David: Prepare a technical report on Toursman testing in Peru, listing bugs, usability issues, and content suggestions, and send it to the application developer; coordinate the incorporation of the ten CVA UGGP geosites into the next version of the application.
- Luboš: Explore possibilities for linking Peru's geosites and stories with gamified activities (e.g., escape room-style tasks or quizzes) to be hosted on the Geoportal.
- Josef: Select representative high-resolution photographs from the mission (geosites, clubs, communities) and use them in 4GEON communication channels and future reports.

### **UGGp on the island of Bohol (Philippines)**

- Review Peru's experience and identify which aspects of indigenous and community cooperation (e.g., tourism associations, GeoFood initiatives, school clubs) could be adapted or reflected in Bohol.
- Share internal templates and materials (e.g., school action plans, club activity forms) that can help CVA UGGP structure its own GeoSchool and club networks.

### **Ngorongoro- Lengai UGGp (Tanzania)**

- Reflect on how the museum, clubs, and geobuses in Tanzania can be used in a similar way to the clubs and community visits in Andagua, and prepare a brief note for Martina comparing the approaches in the different geoparks.
- Consider possible student exchanges or online competitions with Peruvian schools and clubs, using geosites as a common theme.

### **Catholic University (Arequipa)**

- Identify potential students and staff interested in collaborating on the article on geosites and indigenous peoples or related theses, and communicate this list to Abraham and Martina.
- Propose a draft calendar of joint seminars or conferences for the next academic year, possibly including remote contributions from 4GEON partners.

The field mission and coordination meeting in Peru were considered a great success by the CVA UGGP and 4GEON partners. The combination of geosite visits, school and club activities, community gatherings and institutional meetings laid the groundwork for future research, teaching and geotourism development. The next steps will focus on turning this experience into

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concrete results: a portfolio of Toursman geosites, a joint scientific article on geosites and indigenous peoples, strengthened Geoclubs and Geoschools in Peru, and shared learning that other geoparks can adapt.

Next meeting: To be determined

Submitted by: Abraham Cáceres Cabanillas

Corrected by: David Zejda

Approved by: Martina Pásková