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Editor

Geoethics in Peru

A Pathway for Latin America

 Springer

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To our families, for their support and patience

*To the members of IAPG Peru for a new
future for the Peruvian society*

Foreword by Silvia Peppoloni

In 2014, the International Association for Promoting Geoethics (IAPG) established a section in Peru. Thanks to the activism and enthusiasm of a part of the young and vibrant Peruvian geoscientific community, geoethics has found a fertile place in Peru to take root and develop. The national geoethics community, consolidated around the IAPG-Peru, has increased in number over time and its impact has grown with tangible initiatives addressed to the local scientific community and the whole Peruvian society. For example, MinerLima, the International exhibition on minerals, organized since 2015 by IAPG-Peru, for promoting geoscience knowledge and geoscientific culture, to strengthen the social role of geoscientists which is fostering a more sustainable development of Peruvian society. Today, the IAPG-Peru is a concrete reality of the Peruvian scientific and cultural landscape, an inclusive multidisciplinary meeting point, open to dialogue with local stakeholders.

This is the second book published in the SpringerBriefs in Geoethics and it is significant that it is written by colleagues from Peru, one of the economically emerging Latin American countries.

South and Central Americas are extraordinary socio-cultural and environmental laboratories, in which the contaminations between Western cultural traditions and local millenary cultures find a complex synthesis characterized by lights and shadows.

In Peru, the relationship that binds human communities to their territories is characterized by strong symbolism meanings, arising from the concept of Pachamama (Mother Earth) and materializing in feelings and actions to protect Nature, as well as by elements of contrast typical of contemporary societies, in which Nature is subject to heavy exploitation and destruction of its ecosystems.

In this ambivalence, Latin America lives all its contradictions, increased by strong social inequalities, by the continuous threat to people's fundamental human rights and by the progressive erosion of the living spaces of local indigenous communities. On the other hand, it is evident the potential of this continent for undertaking innovative and inclusive paths to build new models of sustainable economic development and human progress.

From this perspective, geoethics becomes a proposal capable of reconciling different positions and channelling different interests, expectations and perspectives

on important issues such as the defence from natural risks, responsible management of georesources, protection and conservation of the geological heritage and geodiversity, as well as the geological literacy of the population. These are precisely the themes dealt with in the book, accompanied by a reflection from the perspective of geoethical thinking.

For all these reasons, the book constitutes a point of reference in the development of geoethics in Latin America: on the one hand, it aims to be an analysis and a reflection after years of activity of the IAPG-Peru at the service of Peruvian society, on the other hand, it pushes other communities of the continent to undertake a shared path to propose the principles and values of geoethics as a response to the great environmental and social issues of our times.

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Foreword by Roberto Greco

In my view, there are several reasons to read Geoethics in Peru.

This book tells us how geosciences began their development in Peru, as well as describing the current complex reality and the many institutions and initiatives that lead this science field. This content alone should be of interest to many academic specialists from many fields such as the history of science, ethics, geosciences, social sciences, education, or natural heritage.

But the goal of this book has a more practical and direct purpose: to interact and mobilize the geoscience community.

By presenting the history of the Peruvian geoscience community, the institutional partners and the relevance of geoscience for society, contribute to give a whole picture of geosciences in Peru, providing a fundamental framework for every professional and academic geoscientist. For geology students, this book offers a few hours of reading the information that usually people need years to collect by readings, participating in scientific events and talking with senior geoscientists.

That for sure will contribute to strengthening the position within the Peruvian geoscience's community.

The special and innovative perspective of geoethics is used to carry a clear message to the community of geoscientists, the need to "humanize" the practice of geosciences. Many arguments and examples support this statement.

Which are the values that sustain geoscientists in their professionals' activities? This is not a trivial question in a field that brings geoscientists to interact with different stakeholders from urban or rural citizens and public administrators to a multinational private company.

This is a needed reflection that should start from the undergraduate course and accompany the professionals along with their life.

There are many suggestions for innovative science and technology policy along with the book that could be useful for the agenda of public administrators not only in Peru.

It is the ambition that the endeavour to create an integrated picture of the geosciences at a national level will soon be followed by other countries as it prepares

the geosciences sector for rethinking the social role and geosciences culture inside the society.

This is an original contribution from Latin America for a change of perspective inside the global geoscience's community.

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Sandra Paula Villacorta Chambi

Contents

Introduction	1
Sandra Paula Villacorta Chambi, Carlos Toledo Gutierrez, and Luis Araujo Ramos	
Background and Current Situation of Geosciences in Peru	13
Sandra Paula Villacorta Chambi, Carlos Toledo Gutierrez, and Cesar Chacaltana Budiel	
Georisks and Their Implications for the Peruvian Society	31
Pedro Isique Chaname and Sandra Paula Villacorta Chambi	
Geoethics and Mining Activity in Peru	47
Esteban Manrique Zuñiga, Carlos Toledo Gutierrez, and Sandra Paula Villacorta Chambi	
Paleontology and Geoethics in Peru: Evolution and Social Practice	59
Cesar Chacaltana Budiel	
Geoethics and the Promotion of Geoheritage in Peru	73
Julio Cardenas Manzaneda, Sandra Paula Villacorta Chambi, and Carlos Toledo Gutierrez	
Geoscience Education in Peru	87
Roberto Greco, Carlos Toledo Gutierrez, and Sandra Paula Villacorta Chambi	
Conclusions: Future Perspectives of Geoethics in Peru	99
Sandra Paula Villacorta Chambi, Carlos Toledo Gutierrez, and Luis Araujo Ramos	

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Abbreviations and Acronyms

APCSG	Peruvian Deputy for Social Conflict Prevention and Governance
AUTOCOLCA	Autonomous Authority of Colca and Annexes
CCGN	National Geological Chart Commission
CENEPRED	Peruvian Centre for Estimation, Prevention and Reduction of Disaster Risk
CINGEO	Peruvian Geotechnical Research Community
CISMID	Japanese-Peruvian Centre for Seismic Research and Disaster Mitigation
CONCYTEC	National Council for Science, Technology and Innovation
CONI	Ministry and the National Research Council
CONICET	Argentinian Council for Scientific and Technical Research
CVZ	central volcanic zone of the Andes
ENSO	El Niño Southern Oscillation
GEMMA	Group of Standards for Mass Movements
IAPG	International Association for the Promotion of Geoethics
IGP	Geophysical Institute of Peru
INAAC	National Institute of Concessions and Mining Cadastre
INCITEMI	Scientific and Technological Institute in Mining
INGEMMET	Geological Mining and Metallurgical Institute
INGEOMIN	Institute of Geology and Mining
INIFM	National Institute for Mining Research and Development
MEM	Ministry of Energy and Mines
MinerLima	Lima's International Mineral Show
NPO	Non-profit organization
OVI	Volcanological Observatory of INGEMMET
PUCP	Pontifical Catholic University of Peru
SDG	Sustainable Development Goals
SEGCGS	Specialized Section in Geoethics, Geological Culture and Society
SGL	Geographical Society of Lima
SGP	Geological Society of Peru
SUNARP	Superintendency of Public Registry

UN	United Nations
UNAM	National Autonomous University of Mexico
UNAP	National University of the Altiplano
UNC	National University of Cajamarca
UNDAC	Daniel Alcides Carrión National University
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNI	National University of Engineering
UNJBG	Jorge Basadre Grohmann's National University
UNMSM	San Marcos's National University
UNP	National University of Piura
UNSA	National University of San Agustín
UNSAAC	San Antonio Abad del Cusco National University
UPN	Private University of the North

List of Figures

Introduction

Fig. 1	The activities of MinerLima are designed to community in general, including children. Photos Sonia Bermudez (2017)	4
Fig. 2	Some activities of MinerLima. Photos Sonia Bermudez (2017)	5
Fig. 3	Paleontological fossil. Picture credit https://museohn.unmsm.edu.pe/paleover.html	7
Fig. 4	Member of Student Association “Amautas Mineros” instructing children about minerals during MinerLima 2017. Photos Sonia Bermudez (2017)	8

Background and Current Situation of Geosciences in Peru

Fig. 1	Conference Room of the Geographic Society of Lima in 1895, during the Presidency of Luis Carranza. Photo taken from Bulletin IV, Geographical Society of Peru (1895)	16
Fig. 2	Salvador Mendívil Echevarría, promoter of the Geology and Mining Service and supervisor for the Geological Map at a 1: 1,000,000 scale. The First Latin American Congress of Geology took place in 1970. This is the “Golden Age” of the Peruvian Geology. Photos Cesar Chacaltana (1970)	17
Fig. 3	Alfredo Pardo Argüedas, founder and head of the Department of Paleontology of the National Geological Chart Commission. The lower image shows the Paleontological Record Book, which was the first Paleontological Database of Peru in 1965. Photos Cesar Chacaltana (n.d)	18
Fig. 4	The upper photograph is a view of the current building front of INGEMMET. The lower photograph is part of its Paleontological Collection, which has supported the elaboration of the National Geological Chart. Photos Cesar Chacaltana (2020)	20

Fig. 5 Front of the Faculty of Geological Engineering of UNI. The photographs at the bottom show an exhibition room of the UNI’s Museum of Mineralogy and Paleontology (left) and a large fossil vertebrate (right). Photos DePeru.com. (n.d) 22

Fig. 6 View of the UNMSM National History Museum facilities. Below: fossil’s vertebrate showroom. Photos Oviedo (2021) 23

Georisks and Their Implications for the Peruvian Society

Fig. 1 Caral city. Takenfrom: viajes del Perú.com (2017) 32

Fig. 2 Temperature anomalies related to El Niño-Southern Oscillation (ENSO). Technical Bulletin of Geophysical Institute of Peru (IGP) Vol.4, April 2017 34

Fig. 3 Mass movement susceptibility map of Peru (Villacorta et al., 2012). In red colour the areas with higher levels of susceptibility to these processes 37

Fig. 4 Magnitude of Volcanic eruption of the Huaynaputina Volcano in 1600 (INGEMMET), compared with other big volcanic eruptions occurred in historic times 38

Fig. 5 Sismic map of Peru (IGP. 2019) 39

Fig. 6 Aerial view of the 1970 Avalanche, which buried the town of Yungay and caused the death of 25,000 people (taken from: <http://www.actualidadambiental.pe/?p=19482>) 40

Fig. 7 Hydraulic Risk Map produced under the Pilot Project of Andean Multinational Project: Geosciences for Andean communities. INGEMMET 2004 41

Geoethics and Mining Activity in Peru

Fig. 1 A field worker learning to recognize different types of quartz. Photo E Manrique 2011 49

Fig. 2 A sincere dialogue with the owners of the land to be explored is crucial. Photo E Manrique 2011 51

Fig. 3 Teamwork discussing with community members to open trenches and exploratory pits. Photo E Manrique 2011 52

Fig. 4 Ticapampa tailings deposited in the late 1800s on the left bank of the Santa River. Taken from: https://es.wikipedia.org/wiki/Relave_de_Ticapampa 54

Fig. 5 Artisanal mining in the coastal hills of Peru. Photo E Manrique 2011 55

Fig. 6 Environmental pollution generated by artisanal miners. Photo E Manrique 2011 56

Paleontology and Geoethics in Peru: Evolution and Social Practice

- Fig. 1 Quaternary elephant skulls (*Elephas falconeri*) without tusks, from the Natural History Museum of Verona- Italy, mistaken by Greeks of the time of Homer as Polyphemus, as seen in the marble head of Polyphemus, first century or II d. n.e., Museum of Fine Arts, Boston-USA. Photographs taken from <https://archaeopassion.tumblr.com/post/141598070020/cyclops-or-elephants> 61
- Fig. 2 Influential scientists who contributed to Peruvian Geology and Paleontology; see references in the text. Online Photographs https://es.wikipedia.org/wiki/Mariano_Eduardo_de_Rivero_y_Ust%C3%A1riz; <https://www.dggv.de/en/about-dggv/honours/g-steinmann-medal.html>; <https://acecig.wixsite.com/geosciences/post/el-padre-de-la-geolog%C3%ADa-peruana-carlos-ismael-lisson-beingolea> 62
- Fig. 3 Institutional collaboration allowed the II International Paleontology Symposium of Peru. The event was organized by INGEMMET and SGP for the community in general. <https://app.ingemmet.gob.pe/evento/IIsimposio/paleoperu> 63
- Fig. 4 Natural manifestation of fossils (Left photo) and manifestation of human activity, reflecting their cultural character (Right photo). The objective part does not change, but as the value is entered, it changes because it is subjective and conditioned by cultural factors. (Photographs from the author's archive) 65
- Fig. 5 Guide for the recognition of paleontological assets. According to this, nature is culture. Photographs by the author and online <https://ilamdocs.org/documento/3395/>; <https://medium.com/@culturaparalima/huaca-palomino-3bd6d191cc2> 67

Geoethics and the Promotion of Geoheritage in Peru

- Fig. 1 Cover of Bulletin N ° 9—Series I: Heritage and Geotourism. Geodiversity and Geological Heritage in the Colca Valley. Mining and Metallurgical Institute of Peru (INGEMMET, 2019) 75
- Fig. 2 Presentation of the geopark project: Colca and Andagua Volcanoes in the workshop “Geoparks and Geoheritage: Promoting the Geoheritage of Latin America” UNAM, Mexico 2015 76
- Fig. 3 Poster of the 1st geoparks symposium in Peru. Taken from INGEMMET (2015) 77
- Fig. 4 Contest Poster and logo of the Colca and Andagua Volcanoes Geopark, winner of the contest for its design, convened in December 2015 78

Fig. 5	Fifth Argumentation and Debate Contest “Geopark Colca and the Andagua Volcanoes”: Is it a Sustainable Development Proposal for the Arequipa Region? November 2017. Organized by the Regional Direction of Education, Arequipa	79
Fig. 6	Poster of the IV Latin American and Caribbean symposium on geoparks held in May 2017 Arequipa, Perú	80
Fig. 7	Flyer of the anniversary week of the chapter of geological engineering, geophysics and Mines of the South Macro Region, 2020	81
Fig. 8	Photo entitled “Natural and Cultural Heritage fused into a single Landscape” taken in the Colca and Andagua Volcanoes Geopark. It achieved 3rd place in the 1st geophotography contest organized as part of the Chapter’s anniversary week. Photograph by Dante Ojeda (2019)	81

Geoscience Education in Peru

Fig. 1	Paleontologist Luz Tejada teaches a course for high school students as part of MinerLima2016. In such events, pupils have the opportunity to learn by experiencing geosciences. Photo Sonia Bermudez (2016)	91
Fig. 2	Dr. Jose Machare, specialized in mining exploration and also in teaching, sharing his knowledge with young-Earth science students. The image is part of the photo collection of the structural geology course organized by IAPG-Peru in 2018. Photo Sonia Bermudez (2018)	96

Conclusions: Future Perspectives of Geoethics in Peru

Fig. 1	Geologists explain to authorities of the Chosica district, the preventive measures that must be taken in the face of the rising flow of the Rimac River. Photo INGEMMET, 2017 . . .	101
Fig. 2	Young student visualizing mineral structures during MinerLima2019. Events like this allow the continuous promotion of a geoethical approach while educating the population	103
Fig. 3	Volcanologist Jersey Mariño explaining the Ubinas volcano hazard map to the former President of Peru Ollanta Humala. Photo Macedo, 2014	106

List of Tables

Geoscience Education in Peru

Table 1	Skills related to Earth Science for primary school, as expected at the end of each grade (Perú, 2016a)	90
Table 2	Skills related to Earth Science for secondary school, as expected at the end of each grade (Perú, 2016b)	90