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Gerardo Rubio · Raul S. Lavado  
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# The Soils of Argentina

 Springer

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## Preface

Argentina occupies the eighth position in the list of countries ranked by total area. Its continental territory forms a triangular platform tilted eastward extending from 22° to 55° 10'S. The large extension determines the existence of a wide variety of climates, vegetation, landforms, and soil types. The annual mean precipitation varies from less than 100 mm on the west to more than 2000 mm on the northeast. Most of the territory is subject to temperatures below 0 °C. Land cover varies from semidesert low vegetation to subtropical forests and wetlands, grasslands alternating with dry forests, and wetlands in cold areas, to just mention some examples. The country shows great altitudinal variation. While most of the territory is below 200 m.a.s.l., the western border, corresponding to the Andes Mountain Range and associated mountain systems, possesses several of the highest peaks of the planet. The main factors that determine the geomorphology of Argentina are the Andean orogeny, the opening of the Atlantic Ocean, and the geological and structural behavior of lithologies preexisting to both events. Other relevant aspects affecting local geomorphology are the climatic variability that occurred in the past, the glaciations, the sea-level fluctuations, and the tectonic movements. Not surprisingly, Argentina exhibits a great variety of soils. The whole set of Soils Orders are represented in the country.

Argentina has some of the most fertile soils in the world, especially those located in the Pampean Region. In this sense, soils constitute one of the greatest assets of Argentina and give the country the capacity to produce food for more than ten times its current population.

Across the large area of the country, an intricate pattern of soils converges with a wide array of climates, vegetation types, and landscapes, which in turn intermingle with human activities to configure the current geography. In the different chapters, the specific available information was summarized and grouped into regions. As expected, this regionalization was not necessarily concurrent for each individual component (e.g., climate, parental materials, vegetation).

There are still numerous knowledge gaps and uncertainties in several issues related to Argentinean soils. Anyway, knowledge about our soils has advanced a great deal in the last decades and this book is intended to offer it to the international audience.

The book was organized following a sequential order. The first group of Chaps. (1–4) provides a general perspective of the local history of soil science and the soil-forming factors (geology and geomorphology, climate natural vegetation). The second group of Chaps. (5–15) deals with the features of Argentinean soils. This section starts with a general compilation of the distribution and classification of Argentinean soils, which is followed by specific chapters for each of the different regions (Pampas, Patagonia, Northwestern, Cuyo, Chaco, Mesopotamia, and the claimed Argentine Antarctica). The third group of Chaps. (16–19) discusses aspects of land use, soil erosion, and soil contamination. The book ends with a multi-authored chapter about the future issues for soil science in Argentina.

Chapters reflect the experience and knowledge of each author or group of authors. They are all experts in the subject of each particular chapter and have direct contact with the local soils. The authors have different backgrounds and are affiliated to different organizations, such as the

National Institute of Agricultural Technology (INTA), the National Scientific and Technical Research Council (CONICET), the Geological and Mining Survey of Argentina (SEGEMAR), and several universities. This diversity ensures a transversal view of the Argentinean soils.

Buenos Aires, Argentina

Gerardo Rubio  
Fernando X. Pereyra  
Raul S. Lavado

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