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Author: Sarmiento, Fausto O.

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Gerardo Budowski: A Beacon to Conservation of Tropical Mountains

Regional Editor Fausto Sarmiento pays tribute in the following piece to his mentor and MRD Editorial Advisory Board Member Gerardo Budowski, a pioneer in Latin American mountain ecology. Ed.

In Latin America the name Gerardo Budowski is associated with most conservation initiatives. Don Gerardo, as peers and students know him, has been a driving force in establishing a collective consciousness about nature conservation to promote sustainable development. Focusing on the mountains of tropical America, he has helped to define priorities for mountain studies and the application of conservation science to tropical mountain ecosystems.

Gerardo Budowski's professional career is the epic of a montologist at a time when mountain studies were characterized by the merging of physical geography and geology with the more conventional fields of natural history and cultural studies. It was a time when an integrated model was needed. Some say it was a time for a new geoecological discourse in Latin America and for a breakdown of paradigms.

In his office at the University of the United Nations for Peace, UPaz, tucked away in the rolling hills of Ciudad Colón, Costa Rica, Don Gerardo seems pleased by a visit but a bit uncomfortable. He would have liked to reserve more time to talk, but his duties as Vice Rector of the University and his several academic tasks keep him constantly busy. At times he is interrupted by the telephone, at other times by his assistants, and sometimes by fellow teachers at UPaz. All come to him for the same reason I made the trip: Don Gerardo's advice has always been highly valued, by world organizations, regional and multilateral environmental agencies, local community groups, and students.

Training for success

Born and raised in Venezuela**,** the young Gerardo was intrigued by different aspects of tropical ecology. He began to show promise as a mountain leader early in his career. His university years were marked by events that showed his devotion to tropical forests and a better understanding of the role of people in the conservation of mountain forests in the Americas. He graduated as an "Ingeniero Agrónomo" from the Universidad Central in Caracas in 1948 and pursued a master's degree in Turrialba, Costa Rica, at the newly established Inter-American Institute of Agricultural Sciences (IICA), graduating with honors in 1954. He obtained a doctoral degree in 1962 at the prestigious Yale School of Forestry. His research on succession and forest regeneration integrated forestry issues with social and cultural questions. He realized that nature and culture in the mountains of tropical America were a continuum with very fuzzy limits. He pursued more fieldwork in cloud forests, because of the dearth of information on biology and hydrology on the continent, and espoused the need for specific case studies, given the risk of generalizations and the lack of emphasis on the catchment properties of many tropical peaks.

The international arena

As the first Venezuelan PhD in forest science, Don Gerardo published scholarly work on succession, forest regeneration, and sound use of natural resources in mountains. After serving as Head of Renewable Resources at the IICA, he spent a year in 1967 as a visiting professor at the University of California in Berkeley. He then became Head of Ecology and Conservation at UNESCO in Paris from 1967 to 1970. Next, he went to Switzerland, where he became Director General of the International Union for Conservation of Nature and Natural Resources (IUCN), now known as the World Conservation Union, from 1970 to 1976. In several IUCN Commissions he was instrumental in incorporating mountain issues in specific task forces, subcommittees, and chairs. He is a past president of the World Ecotourism Society and has been a special advisor to the World Wide Fund for Nature (WWF) and the Global Environmental Facility of the World Bank. In his current position as Officer in Charge of the University of the United Nations for Peace (Vice Rector) since 1999, Don Gerardo continues to stand out. Few other Latin Americans have attained such eminent professional distinctions and a position of preeminent influence on conservation worldwide.

North–South practices

As a pioneer in conservation and a facilitator of protected areas, Don Gerardo helped establish the framework in which the FAO and other international organizations considered the application of the National Parks model. His perception of tropical mountains and the differences between tropical and temperate ecosystems prompted him to coauthor, with Kenton Miller, an important paper on North and Latin America, dealing with comparisons and contrasts in the evaluation of land for nature conservation. This paper is still cited as a methodological source for conservation planning. These perceptions were formalized when discussing

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the even more crucial theme of conserving biodiversity outside protected areas, emphasizing the role of traditional agro-ecosystems. This led to the establishment of new landscape stewardship in cultural areas and sacred sites, protected landscapes, and the newest best management practices proposed for mountains.

Sustainable forestry became a battle cry for Don Gerardo. Several issues were important in his views on tropical mountains: appropriate inventories of biodiversity, and the identification and documentation of the different uses of tropical trees (ie, timber, fuelwood, nontraditional forest products). On his advice new programs to incorporate trees on farms became widely popular. In Spanish ecological literature he coined the term "agroforestry" to describe the model of integrated, sustainable tree farms. The technical jargon of *agroforestería* is now used everywhere. Several tropical arboreta and nurseries honor Don Gerardo's legacy in support of tropical agroforestry. One example is the CATIE arboretum in Turrialba.

Sustainability scenarios

Don Gerardo became involved in projects on a regional level. His views on tropical mountain ecology gained respect, and a cadre of professionals familiar with the "Budowski method" came into play, as important researchers applied practical tools and programs developed under his inspiration. This was demonstrated clearly when Don Gerardo explained the arguments for *Eucalyptus* plantations in the mountains of the Americas, defending them against attacks from conservation fundamentalists, who saw exotic tree plantations as an insult to tropical landscapes. He was clear about the need for further research-based decisions in many countries to continue exotic species and introduce them to tropical mountain environments as an alternative to local mountain tree species that are low, stunted, and do not germinate easily.

His vision of the pre-European impact on tropical America served as a turning point in considering the impact of humans in shaping mountain landscapes in the area. Examples based on the "tree of Peru" (*Schinus molle*) or the use of Pampa grass (*Cortadeira* spp) in Mesoamerican sites generated curiosity about the historical ecology of tropical mountains. Another example is the presence of palms (*Parajubea cocoides*) in the Equatorial Andean *haciendas*, following the Inca tradition of planting "royal palms" in imperial settlements. It was soon realized that sustainability questions in America should be tackled from historical and cultural perspectives, not only from biological or agronomical ones. By pinpointing the existence of pre-European trade and the introduction of exotic flora, he pointed out that *capulli* (*Prunus serotina capuli*) was certainly a newcomer in the tropical mountains and was dispersed by people, the same as black walnut (*Juglans neotropica*), *pejevalle* (*Bactris gassipaes*) and *lulo* (*Solanum quitoense*), not to mention other plants considered as staples by ancient peoples. Overall, Don Gerardo remains hopeful that new generations of Latin American farmers and citizens will come to appreciate the value of nature conservation and tropical montane forests so that sustainability will be ensured into the next century.

Environmental ethics

Don Gerardo's exemplary professional career has made him an acute thinker and manager of concepts in the areas of ethics and development. His major concern is to help secure an appropriate setting for conservation in developing nations, in view of increased pressure on natural resources in a growing global market economy. This is of fundamental importance for mountain villages and towns. He defined a simplified world ethic based on a formula equating the quality of life with the summation of biological diversity, cultural diversity, and options for the promotion of sustainability. His view of the ecological 3 "Rs" (reduce, reuse, recycle) enhances the concept of the 5 "Rs" that he considers important to sustainable mountain development. These are (1) recover the value of ancient traditions and nonmarket values; (2) repair the conditions of the landscape so that humanized environments serve to maintain optimum levels of resources; (3) refuse to use environmentally unfriendly products and follow the dictates of propaganda for consumption; and above all, (4) rethink the value of old paradigms or outdated modes of behavior; and (5) reformulate new types of decent and respectful development of mountain societies in the light of the pressing global forces of the market economy.

His fundamental concept of environmental ethics is associated with the notion of peace for progress. This is the main reason why Don Gerardo helped establish the University of the United Nations for Peace. The mountains of Colombia, Bolivia, and Peru remind us that there is no potential for development with the imminent threat of war. Peace is thus a major thrust of development. Don Gerardo argues that peaceful projects and peace activities must be a requirement for funding development activities in Latin America. By looking at the reality of mountain systems he alerts us that mountains have been and continue to be the birthplace of violence, revolts, revolutions, and hostilities. The iconic untamed *montubio* soul reflects only the macroeconomic and social tensions affecting mountain environments in tropical America, where guerilla warfare, paramilitary activities, and drug-ragged violence are on the rise. Peace as an instrument for progress must be sought from

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governments and civil society in the mountains and elsewhere.

Global issues and the future

As a board member of the consultative group of the Global Environmental Facility, Don Gerardo is alert to the risks of relying on multilateral agencies and bilateral agreements between countries as the sole alternative for development in mountain environments. He recognizes the need for local communities to take an assertive proactive approach and become active stakeholders in the process of defining development alternatives from the start. For him a global perspective is important in mountain regions because the lowlanders have traditionally used the economic power of a reliable lowland production system, taking all environmental goods and services coming from the mountains for granted.

Don Gerardo Budowski asks us to imagine global mountain scenery in a way different from the environmentalists' traditional dichotomy, realism versus skepticism. We should focus on a new dichotomy, optimism versus idealism, so that development goals are achieved in the long term, based on premises of quality (better rather than bigger), sound evaluation of carrying capacity (optimization instead of maximization), and sustainability (long-lasting equity and empowerment instead of short-term gains).

Fausto O. Sarmiento
Department of Geography and Center for Latin American and Caribbean Studies, 301 Candler Hall, University of Georgia, Athens, GA 30602-1778, USA.
fsarmien@uga.edu

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