

EDWIN J. CASTELLANOS

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Dean

Research Institute

Universidad del Valle de Guatemala

SUMMARY OF PROFESSIONAL ACHIEVEMENTS

20 years of continuous work in research and education in Guatemala and Mesoamerica in the topic of natural resource management and environmental sanitation, particularly in the area of climate change where he participated as Lead Author of the 5th Assessment Report by the Intergovernmental Panel on Climate Change, IPCC, and Coordinating Lead Author in the 6th Report in the chapter on vulnerability and adaptation for Central and South America. He also participated in COP 21 in Paris in December 2015 as the National Commissioner on Climate Change.

He is a member of the Scientific Advisory Committee of the Inter American Institute for Global Change Research, IAI; member of the Science Leadership Council for the Mountain Research Initiative, MRI; member of the External Advisory Council for WWF Latin America; and member of the Alliance for Climatic Resilience in Rural Latin America. He is the university representative before the National Council for Climate Change, the highest decision body on climate change issues for Guatemala.

He has been the Principal Investigator in multiple projects at the national and regional level on the topic of adaptation to climate change by rural and small farmer communities. He has also lead the studies for the past 15 years on monitoring deforestation and studying the causes for that problem in Guatemala, as part of the national REDD+ (Reduced Emissions from Deforestation and Degradation) initiatives and other initiatives to develop carbon-offset projects.

He promoted the creation and served for three years as the Secretary of the Guatemalan System for Climate Change Sciences, a network of research centers that provides scientific advice to decision makers. He received the National Medal for Science and Technology in 2016, and he was a Global Visiting Scholar at RTI International in 2017 (USA) doing research on water modelling.

RECENT PROFESSIONAL POSITIONS:

- 2018-Present Dean, Research Institute, Universidad del Valle de Guatemala.
- Recipient of the *Pantaleón* Endowed Chair on Environmental Sciences.
 - Coordinates the work of eleven research centers.
- 2018-Present Member, External Advisory Council for Latin America, WWF.
- 2016-Present Scientific Advisory Committee, Inter American Institute for Global Change Research, IAI.
- 2017-Present General Coordinator, International Network of Science, Technology and Innovation of Guatemala.
- 2016-Present Member, Science Leadership Council for the Mountain Research Initiative, MRI.
- 2014-Present University Representative to the Guatemalan National Council of Climate Change.
- 1998-2017 Professor of Environmental Science, Universidad del Valle de Guatemala.
- Co-Director of the Research Center for the Environment and Biodiversity.
 - Director of the GIS and Remote Sensing Laboratory.
 - Teaches the course “Climate Change” in the Masters program in Technology and Energy Sustainability and “Environmental Sciences” to undergraduate students.
- 2014-2017 Secretary, Guatemalan System for Climate Change Sciences.

- 2017 Global Visiting Scholar, RTI International, Research Triangle Park, North Carolina, USA.
- 2015 Ministerial Commissioner for Environment and Climate Change, Ministry of Environment and Natural Resources. Participated in the negotiations of the Paris Agreement.
- 2015 Member of the Vice-President Commission for Environment and Climate Change.
- 2012-2015 University representative to the Board of Directors of the Guatemalan National Forest Service.
- 2007-2015 Lecturer, University of Guelph, Canada, Semester Abroad Program in Guatemala. Teaches the course: Environmental Issues and Geography of Guatemala.
- 2010-2014 Lead Author of the Fifth Assessment Report of the Working Group II of the Intergovernmental Panel on Climate Change IPCC.
- 2013 Consultant. UNDP/UNEP Poverty and Environment Initiative.
- Lead a research team for the assessment of environmental services in the Dry Corridor of Guatemala
- 2011-2012 Adjunct Researcher, Lamont-Doherty Earth Observatory, Columbia University, USA. Completed research on historical climatic changes in Guatemala using dendrochronology.
- 1998-2015 Consultant. Climate Change Office, Ministry of Environment of Guatemala
- Member of the Guatemalan delegation to the Conference of Parties of the U.N. Framework Convention on Climate Change, COP 14-17 and 21.
- 2007 Consultant. United Nations Development Program UNDP, Guatemala.
- Co-authored a special publication on the possible impacts of climate change on the human development of the country.

VOLUNTEER PROFESSIONAL WORK

- 2017-Present Board of Directors Mesoamerican Journal on Biodiversity and Climate Change.
- 2012-2017 Guest Editor for the Special Issue on "Climate Change Mitigation and Adaptation with Local Communities and Indigenous Peoples" published by the journal Climatic Change.
- 2010-Present Advisory Board, Private Institute for Climate Change Research, ICC, Guatemala.
- 2000-Present Scientific Advisory Board of Defensores de la Naturaleza, the largest conservation NGO in Guatemala.
- 2009-Present Advisory Board of the scientific journal Population and Environment.
- 2011-2012 Member of the International Panel of Experts for the meeting: Indigenous Peoples, Marginalized Populations and Climate Change (IPMPCC), which resulted in the book: Traditional knowledge for climate change assessment and adaptation.

EDUCATION:

- 2001 Ph.D. Environmental Science. Indiana University, Bloomington, IN
Concentration area: Ecosystems Ecology. GPA: 3.9.
- 1992 M.S. Analytical Chemistry. Michigan State University, E. Lansing, MI
Concentration area: Electronics and Instrumentation. GPA: 3.8
- 1986 B.S. Chemistry. Universidad del Valle de Guatemala. Distinguished student.

Specialized Courses:

2006	Diploma	Land use management. Georg-August Universität, Germany.
2001	Diploma	Market processes. Universidad Francisco Marroquín, Guatemala.
1998	Diploma	Tropical Dendrology. Tropical Scientific Center, Costa Rica.

PARTICIPATION IN RESEARCH NETWORKS AND PROJECTS:

1. **Intergovernmental Panel on Climate Change, IPCC:** Lead Author for the 5th Assessment Report AR5 and Coordinating Lead Author for the 6th Assessment Report AR6 for Climate Change in the chapter on Adaptation and Vulnerability for Central and South America. Participation in multiple workshops on greenhouse gas inventories and climate change scenarios.
2. **Sustainable Economic Observatory.** Funded by USAID, this think tank is based at Universidad del Valle de Guatemala and does research on economic issues related to environmental and agricultural problems in rural Guatemala.
3. **Climate, Nature and Communities in Guatemala.** Our goal was to design and help implement a monitoring system for land use changes and carbon emissions in the country. We also developed a sub-national baseline of carbon emissions to be used for REDD+ projects.
4. **Reconstructing the frequency of droughts in Tropical America using dendrochronology.** Financed by NSF, USA and implemented jointly with University of Arizona and Denver University to reconstruct recent (last 200 years) climatic variation in Guatemala.
5. **International Forestry Resources and Institutions IFRI:** this global network of Collaborating Research Centers (CRC) uses standardized methodology to collect environmental and social data on how communities use and manage their forests. I am currently directing the CRC in Guatemala.
6. **The effects of migration and remittances on land use change in rural Guatemala and Mexico: is there a forest transition?** Implemented jointly with the Centre for Development and the Environment, University of Oslo and Colegio de la Frontera Sur, Mexico. This research aims to document the effect of migration on land use change decisions of small farmers in rural areas.
7. **Small coffee producers and adaptive options for a Changing climate: the risks and challenges of certification for ecosystem services.** I coordinated an international team of researchers in this project funded by the Inter American Institute for Global Change Research (IAI). The project examines the adaptation practices of small coffee growers in four countries in the face of external stressors from economic and climatic factors.
8. **Local Institutions for the Management of Forest and Water Resources in Indigenous Communities.** This project worked with six communities in Guatemala to examine the institutions developed by indigenous groups to manage their natural resources.

HONORS AND DISTINCTIONS

2018	Distinguished Researcher, Universidad del Valle de Guatemala.
2016	National Medal for Science and Technology, Guatemalan Government.
2016	Ricardo Bressani Medal, impact of teaching and research, Universidad del Valle de Guatemala.
2014	Included in the list of Personalities of the Year, Siglo XXI, Guatemalan newspaper.
2011	Member of the Academy of Medical, Physical and Natural Sciences of Guatemala.
2000	Pantaleón Endowed Chair in Environmental Sciences, Universidad del Valle de Guatemala.
1987	Fulbright Scholarship for graduate studies in the United States.
1986	Distinguished Student Award, Universidad del Valle de Guatemala.

RECENT SELECTED PUBLICATIONS:

- Ramos-Castillo, A., **E. Castellanos** and K. McLean. 2017. Indigenous peoples, local communities and climate change mitigation. *Climatic Change* 140:1-4. DOI 10.1007/s10584-016-1873-0
- Hannah, L., C. Donatti, C. Harvey, E. Alfaro, D. Rodríguez, C. Bouroncle, **E. Castellanos**, F. Díaz, E. Fung, H. Hidalgo, P. Imbach, P. Laderach, J. Landrum and A. Solano. 2017. Regional modelling of climate change impacts on smallholder agriculture and ecosystems in Central America. *Climatic Change*. 141:29-45 DOI 10.1007/s10584-016-1867-y.
- Pons, D., M. Taylor, D. Griffin, **E. Castellanos** and K. Anchukaitis. 2017. On the production of climate information in the high mountain forests of Guatemala. *Annals of the American Association of Geographers* 107(2):323-335.
- Taylor, M., M. Aguilar-Stoen, **E. Castellanos**, M. Moran-Taylor and K. Gerkin. 2016. International migration, land use change and the environment in Ixcán, Guatemala. *Land Use Policy* 54: 290-301
- Magrin, G., J. Marengo, J. Boulanger, M. Buckeridge, **E. Castellanos**, G. Poveda, F. Scarano and S. Vicuña. 2014. Central and South America. In: *Climate Change 2014: Impacts, Adaptation and Vulnerability. Part B. Working Group II, IPCC*. Cambridge University Press, USA, pp. 1499-1566.
- Aguilar-Stoen, M., M. Taylor y **E. Castellanos**. 2014. Agriculture, Land Tenure and International Migration in Rural Guatemala. *Journal of Agrarian Change*. DOI: 10.1111/joac.12091
- Castellanos, E.**, C. Tucker, H. Eakin, H. Morales, J. Barrera y R. Díaz. 2013. Assessing the adaptation strategies of farmers facing multiple stressors: Lessons from the Coffee and Global Changes Project in Mesoamerica. *Environmental Science and Policy* 26:19-28.
- Schmitt-Harsh, M., T. Evans, **E. Castellanos** y J.C. Randolph. 2012. Carbon stocks in coffee agroforests and mixed dry tropical forests in the western highlands of Guatemala. *Agroforestry Systems*. DOI 10.1007/s10457-012-9549-x.
- Taylor, M., M. Moran-Taylor, **E. Castellanos** y S. Elías. 2011. Burning for Sustainability: Biomass Energy, International Migration, and the Move to Cleaner Fuels and Cook stoves in Guatemala. *Annals of the Association of American Geographers* 101(4):1-11.
- Tucker, C., H. Eakin, and **E. Castellanos**. 2010. Perceptions of risk an adaptation: Coffee producers, market shocks, and extreme weather in Mexico and Central America. *Global Environmental Change* 20:23-32.

RECENT SELECTED PRESENTATIONS AT CONFERENCES AND SEMINARS

- Castellanos, E. 2017. Cross-cutting issues of AR6: Perspective from lower-income developing countries. IPCC AR6 Scoping Meeting, Addis Ababa, Ethiopia.
- Castellanos, E. 2017. Adaptation. Sao Paulo School of Advance Science on Climate Change: Scientific basis, adaptation, vulnerability and mitigation. Universidad de Sao Paulo, Brazil.
- Castellanos, E. 2016. Combining local and scientific knowledge to increase adaptive capacity to global changes among farmers in Mesoamerica. Eight Meeting of the SBSTA Research Dialogue, UNFCCC meeting, Bonn, Germany.
- Castellanos, E., D. Fernández y G. Fuentes. 2015. Land use changes and emissions from deforestation in Guatemala: advances and challenges to prepare this Central American country for REDD+. Our Common Future under Climate Change, International Scientific Conference. Paris, Francia.
- Castellanos, E. 2014. Adaptation strategies and limitations in rural and indigenous communities in Mesoamerica. Plenary presentation at the 3rd International Climate Change Adaptation Conference Adaptation Futures. Fortaleza, Brasil.