

Curriculum Vitae

M.Sc. Yamileth Astorga Espeleta

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Curriculum Vitae

M.Sc. Yamileth Astorga Espeleta

A. PERSONAL DATA

- **Place and date of birth:** San José, Costa Rica, September 10, 1960
- **Nationality:** Costa Rican
- **Certificate number:** 105400192
- **Address:** Miravalles Residential, San Ramón de Tres Ríos, San José, Costa Rica
- **Cellular:** +506-8350-4470
- **E-mail:** yamileth.astorga@ucr.ac.cr or yastorga@ice.co.cr

B. TITLES, ACADEMIC DEGREES

1. Baccalaureate: 1984, Baccalaureate in Biology (emphasis Marine-Limnology), National University, Costa Rica
2. Bachelor: 1989, Bachelor of Marine Biology (emphasis Aquaculture-Limnology), National University, Costa Rica
3. Master: 1991, Master of Sciences in Environmental Sanitation, specializing in Ecotoxicology. Ghent State University

C. AREAS OF WORK

- **Expert in the management and administration of Drinking Water Supply Systems and Wastewater Sanitation Systems**
- **Expert in Integrated Water Resource Management for 37 years.**
- **Integrated Watershed Management for 16 years.**
- **Promoter of participatory management processes for health and the environment, considering health, environment and society.**
- **Expert in management and evaluation of the quality of water resources and environmental management, in the field of academic research, national and international consultancies, water expert and environmental regulations, for 36 years.**
- **Expert in surface water ecology: evaluation of water quality through biological indicator organisms for 12 years.**
- **Design, Assembly and Development of training courses in various topics of Integral Environmental Management of Projects: environmental impact assessments, environmental management systems, territorial environmental management, environmental planning, watershed management.**
- **Environmental expert for surface water pollution with experience in water resources management for 5 years.**
- **Ecotoxicological assessments of surface waters, discharged waters, leachates, agrochemicals, etc.**
- **Expert in Integral Environmental Management of Projects: Environmental Management Systems, Environmental Audits, Pre- and Environmental Feasibility of Projects, Works and Development Activities, Environmental Planning, Environmental Regulations, for 28 years.**
- **Environmental impact assessments of new projects, works or development activities for 20 years.**
- **Environmental Damage Assessment: quality and quantification, corrective measures and prevention of environmental deterioration.**
- **Environmental Risk Assessments of new projects works or development activities.**
- **Assembly of procedures systems for Environmental Management: Manuals, Procedures, Instructions and Records for Quality and Environmental Management.**
- **Environmental Auditor for ISO 14000 Certification Systems, Rainforest Alliance and for Ecological Flag**

- Environmental and social auditor for agricultural production with the "Fairtrade Labelling Organization" certificate
- Social Auditor of "Social Accountability International" (SAI) with the certificate SA8000.
- Environmental Advisor in banana cultivation

D. PROFESSIONAL EXPERIENCE

d.1. Political, administrative, managerial, consulting and academic experience

1. July 2022 to the present: Academic teacher and researcher of the University of Costa Rica for total time and coordinator of the Integral University Water Management Network (GUIAS Network) which brings together 43 researchers from more than 20 Academic and Research Units.
2. January 2021 to July 2022: Part-time academic teacher at the University of Costa Rica.
3. December 2022 to August 2023: Consultancy to establish a collaboration and exchange mechanism that includes national and regional actors and key actors in the drinking water and sanitation sector (AP&S) and disaster risk reduction and sustainable and inclusive adaptation to climate change (DRR-ASICC) of the region that allows its effective participation in the processes of strengthening guides and developing tools of this sector in the RIDASICC Project.
4. December 2021 to May 2022: Technical study on the channels of direct and indirect impacts of climate change on water and sanitation infrastructure and the supply and demand for services provided to the population, with application for public investment projects in the COSEFIN/SICA countries. United Nations Economic Commission for Latin America (ECLAC).
5. August 2021 to May 2022: Project Coordinator Update of the National Water Policy and the National Plan for Integrated Water Resource Management. Recruitment by the GIZ-Ministry of Environment and Energy of Costa Rica.
6. November 2021 to January 2022: Case study on water security of the Nimboyores aquifer and coastal aquifers of Santa Cruz, Guanacaste, Costa Rica, for knowledge management on local experiences. Recruitment of the Central American Commission for Environment and Development (CCAD) and the Central American Integration System (SICA) within the framework of the action lines of the Regional Water Agenda.
7. 8 May 2014 - to 31 December 2020: Executive President of the Costa Rican Institute of Aqueducts and Sewers (AyA) during the Administration 2014 - 2018 of Luis Guillermo Solís and the administration 2018 - 2022 of Carlos Alvarado Quesada.

Leadership: Responsible and political decision-maker for the water and sanitation service throughout the country. Promoter of the National Drinking Water Supply Policy 2017-2030, National Wastewater Sanitation Policy 2017-2045, National Sanitation Plan, Institutional Gender Policy, Institutional Strategic Plan 2016-2021. Creation of the governing body in the AyA's organizational structure with staff in charge. Advice to municipalities with aqueducts.

Development of new regulations: Service Provision Regulations, Reception Regulations for Wastewater Treatment Plants, various Technical Standards.

Promoter of the Decree of Formation of the Commission for the integral management of the coastal aquifers of Santa Cruz and the Nimboyores aquifer (CONIMBOCO).

Promoter of the Decree of Formation of the Commission for the integral management of the Sardinal and Coco aquifer.

Initiator of the Law to authorize the use of water for human consumption and construction of related works in the Natural Heritage of the State.

President Pro-Témpore for 2 periods (2016 and 2020) at the Central American and Dominican Water and Sanitation Forum (FOCARD-APS) attached to the Central American Integration System (SICA).

Member of the Steering Committee of the organization "Sanitation and Water for All" (SWA), as representative of the Government of Costa Rica (for two consecutive terms, 3 years).

Organization and development of the Latin American Sanitation Conference (LATINOSAN) in April 2019, with the participation of 1,300 people from 30 different countries, serving as President of LATINOSAN, organized with various agencies and development banks.

Hosted and supported the organization and development of a meeting of ministers and leaders of water supply and sanitation worldwide in April 2019 with SWA.

Strengthening Community Water Management: Organizational Policy and Strengthening Community Management of Drinking Water and Sanitation Services, ASADAS Regulations, Promoter of the instrument of characterization of the Rural Associations of Drinking Water Supply and Sanitary Sewerage (ASADAS) of the country and implementation of the instrument to about 1500 ASADAS, with digital system of characterization information (SAGA) and ASADAS National Training Plan. Successful processes of fusion/union of ASADAS to strengthen its management: 22 completed and 77 in process.

Associativity: Formation of 14 second level organizations (Federations, Leagues and Unions -FLUs) of ASADAS and 12 in process of formalization.

Associativity: Formation of the third-level organization of ASADAS CONAFLU (National Confederation of ASADAS FLUs)

Operating competence: Responsible for about 4,500 officials, working to supply drinking water to just over 50% of the country's population and sanitation to about 22% of the country's population. During my administration, investment in infrastructure increased by 28.7% compared to the previous 14 years and was committed for the next two years by 19.3% more than in the last 5 years, reaching about US\$1Billion.

Developing and implementing more than 200 aqueduct and wastewater sanitation projects in various regions of the country, including the Extension of the Metropolitan Aqueduct with an amount of US\$ 450 million (from pre-feasibility up to 70% of designs and with the approval of the credit by the Central American Bank and Economic Integration Board), the water reduction project does not count (RANC) for an amount of US\$162 million in execution, The Environmental Improvement project of the cantons of the Greater Metropolitan Area for an amount of US\$320 Million, with US\$202 Million executed and completed and in execution US\$89 Million.

Promoter and accompaniment of the participatory process and public community agreement for the coastal aqueduct of Santa Cruz, which supplies 16 communities and the participatory process for the coastal project Sardinal - El Coco, both in Guanacaste - Costa Rica.

Projects in indigenous territories: 21 completed and 7 under implementation benefiting about 15,000 people (US\$3,5 Million).

8. May 2017 - December 2020: Member of the Executive Committee of the International Platform of "Sanitation and Water for All" (SWA), attached to UNICEF.
9. January 2016 - December 2016: Pro-Témpore President of the Central American Forum and Dominican Republic for Drinking Water and Sanitation (FOCARD), attached to the Central American Integration System (SICA).
10. January 2016 - December 2016: Pro-Témpore President of the Rural Water and Sanitation Information System (SIASAR).
11. May 2013 to February 2018: Coordinator of the Project "Knowledge Dialogue for the Appropriation of Integrated Water Resource Management, as a strategy for water sustainability at the level of the Purires River micro-basin, Cartago, Costa Rica."funded by the CRUSA Foundation and to be executed by the University of Costa Rica.
12. September 2012 - present: Associate Professor of the School of Health Technologies of the University of Costa Rica (UCR).

13. January 2005 - 7 May 2014: Coordinator of the Institutional Program in Integral Environmental Management -ProGAI of the University of Costa Rica-UCR. This program has: 12 permanent officials, 8 temporary officials, the participation of 25 academic units of the UCR and 60 collaborators UCR officials from the different academic units. ProGAI currently has 8 projects managed from the coordination of this program.
14. July 2013 - January 2014: Coordinator of the Project "Integral Water Resource Management Basin Quebrada Víbora, Tobosi, Cartago Costa Rica". Financed by the Commission for the Reventazon River Basin, through the Water Use Fee of the Water Directorate of the Ministry of Environment, Energy, Water and Seas (MINAEM), to be implemented by the UCR ProGAI.
15. June 2005 - 7 May 2014: Representative of the University of Costa Rica in various networks and platforms in the country, including: Global Water Partnership (GWP), Water Alliance, National Environmental Network in Water and Sanitation (RANAS), National Association in Defense of Water (ANDA)Water and Sanitation Commission (CAS) of the National Council of Rectors (CONARE).
16. March - 7 May 2014: Consultant for the State of the Nation, for the elaboration of the Water Resource Management Chapter.
17. March - May 2013: Consultant for GWP-Central America, for the update of the Water Chapter of Costa Rica, for AQUASTAT (Global Information System on Water and Agriculture) of FAO.
18. September 2012 - July 2013: Coordinator of the Project "Proposal of Indicators for the Ecological Monitoring Program in the field of inland water ecosystems". executed as a consultancy with the Center for Environmental Law and Natural Resources (CEDARENA) for the National System of Conservation Areas (SINAC), financed by the Costa Rica Foundation Forever.
19. January - December 2012: Promoter of the formation of the Advisory Commission of the National Council of Rectors (CONARE) to the National Environmental Secretariat (SETENA) and Coordinator of the same Commission.
20. February 2011 - April 2012: Appointed at the request of the Vice President of the Republic in the Commission for the reformulation of the Draft Water Law of Costa Rica. As a representative of the academy.
21. 23. April 2007 - December 2012: Coordinator of the Project "Integral Water Resource Management in the Purires River Micro Basin, Cartago, Costa Rica". Research and Social Action Project of the ProGAI of the University of Costa Rica. During this project, a participatory environmental assessment was carried out with the local actors of the Sub-Basin and a process of grassroots social organization was promoted, culminating in the formation of the Com-Purires. This project includes the assessment and delimitation of groundwater recharge areas, assessment of the physical-chemical and biological quality of water, identification of water pollution sources, introduction of clean technologies, environmental education, training and implementation of Water Safety Plans (PSA), among others.
22. January 2007 - December 2011: Coordinator of the Integral Environmental Management System of the University of Costa Rica -SiGAI. This is a ProGAI project. The purpose of this project is to implement an environmental system in the UCR, type ISO 14001 standard, which considers the environmental aspects and impacts that university work entails and propose goals and commitments to mitigate impacts and comply with national environmental regulations. This project involves the coordination of the work of 4 professionals from different disciplines.
23. August 2007 - December 2011: Coordinator of the Technical Closure Project of the Río Azul Landfill. This project involves the coordination of the work of 8 professionals from different disciplines for 3 months and then of 5 professionals from different disciplines, for 15 more years.

24. August 2007 - December 2011: Fair Trade Labelling Organization -FLO-Cert". Consulting for conducting research, drafting and reviewing manuals, training.
25. 2001 - December 2011: Environmental Regent of Plycem AMANCO Company of Costa Rica and Tubosistemas AMANCO Company of Costa Rica.
26. April 2010 - December 2010: Consultant for the Water Directorate of MINAET, contracted by FONAFIFO with financing from the World Bank. In: Support for the promotion and implementation of the Water Use Canon.
27. March 2010 - September 2010: Consultant for the Central American Commission on Environment and Development (CCAD) and funded by USAID. In the development of training for public officials on "Methodology of Elaboration of Performance Standards in Wastewater Quality", in each of the countries of the Central American region participating in DR-CAFTA.
28. March 2010. Co-organizer of the 5th Analysis Forum: Preservation and Sustainable Uses of Water Resources and 1st Central American Fair of Community Water Management. San José, Costa Rica.
29. April 2007 - June 2010. National Coordinator of Project RLA/1/010 "Improving the management of bodies of water that are contaminated with metals" (ARCAL). Project financed by the International Atomic Energy Agency (IAEA) and involved 11 Latin American countries. This project seeks to harmonize protocols and train human resources for the assessment of water quality and the transport of metals in surface water bodies in countries of the Latin American and Caribbean region.
30. October 2006 - June 2010: Coordinator of the Network of Environmental and Health Quality Laboratories of Costa Rica -RELACORI. This is a ProGAI-UCR project. This network promotes the preparation of laboratories for ISO 17025 certification, organizer of the courses "Laboratory Management of Costa Rica" with the support of PAHO and the Course "Uncertainty and Metrology of Laboratories in Latin America", with the support of CYTED, to be held on August 27, 28 and 29 and September 03 to 17, 2007.
31. December 2008 to February 2010: Coordinator of the Project "Elaboration of Performance Standards in Water Quality in Priority Sectors of the Central American Region". Project financed by the Central American Commission for Environment and Development -CCAD and executed from the University of Costa Rica. Project to harmonize waste water standards and concentrations in four economic sectors for countries: Guatemala, Honduras, El Salvador, Nicaragua and Costa Rica, within the framework of CAFTA.
32. January 2007 - December 2009. Co-coordinator of the Project "Water resource and social transformation in the Arenal basin - Tempisque: The need for political advocacy." Project co-implemented with the Organization for Tropical Studies -OTS and funded by the World Conservation Union -IUCN, within the collaborative framework of the Advocacy and Research Project.
33. October 2008 - March 2009: MINAET Consultant for the Development of the National Environmental Quality Plan. Project financed by the IDB and GTZ.
34. July 2008 - January 2009. Sub-coordinator of the Greater Metropolitan Area (GAM) Environmental Viability Project, the GAM Environmental Impact Study and the GAM Regulatory Plans. This is a project executed by the UCR Geography School and ProGAI. It is part of the process of elaboration of the Urban Regulatory Plan of the GAM -PruGAM, Costa Rica and financed by the European Union to the Ministry of Housing, Urbanism and Human Settlement. FUNDEVI and University of Costa Rica.
35. 2005 - 2008. Member of the National Commission coordinated by MINAET, responsible for drafting the Integrated Water Resource Management Law.

36. September 2008. GWP-Costa Rica consultant. Elaboration of the Workshop Report: IWRM in Costa Rica: post IV World Water Forum, en route to the V World Water Forum.
37. 1997 - September 2008: Environmental Auditor of Environmental Management Systems. Accredited in the Ecological Flag Program of environmental audits of the Ministry of Environment and Energy, Costa Rica. About 20 environmental audits were carried out for this Programme.
38. July - August 2008: FLO-Cert consultant on Fair Trade training and audits in 4 organizations in Papua New Guinea.
39. April - July 2008. FLO-Cert consultant in the preparation of an Audit Manual for Fair Trade.
40. December 2007 - March 2008. Consultant to USAID and CCAD in the Project "Support for the Strengthening of Wastewater Issues in Central America (Costa Rica)". Consultancy contracted by CCAD.
41. March 2007 - February 2008. Coordinator of the Project "Study of Carrying Capacity and Cumulative Effects in the GAM and Environmental Scope of the GAM Plan". This is a ProGAI project. It is part of the process of elaboration of the so-called PRUGAM, Costa Rica and is financed by the European Union. FUNDEVI/University of Costa Rica and SADAI.
42. March 2006 - August 2007: MINAE-IDB consultant in the preparation of the National Integrated Water Resource Management Plan. Financed by the IDB.
43. 1997 to July 2007: Environmental Auditor and Social Auditor of the Fair Trade Labelling Organization: "Fair Trade Labelling Organization -FLO-Cert". For various agricultural crops. FLO- International. Audits executed in Costa Rica, El Salvador, Belize, Dominican Republic, Ecuador and "Windward Islands" (Dominica, Saint Vincent, Saint Lucia and Grenada).
44. August - December 2007: Consultant for the CCAD in Project "Implementation of the Regulation for Wastewater Discharges in Central America in Costa Rica". Consultancy contracted by CCAD as part of the CCAD/USAID/DR-CAFTA cooperation agreement.
45. May and June 2007: GWP-Costa Rica consultant in the organization and preparation of reports of four regional workshops in "National Integrated Water Resource Management Plan", held in Liberia, San Carlos, Limón and Pérez Zeledón of Costa Rica. Organized by the Global Water Partnership and MINAE.
46. April 2005 to December 2006: Coordinator of the Project "Participatory Management of the Jabonal River Sub-Basin, Barranca River Basin, Costa Rica". Research and Social Action Project of the ProGAI of the University of Costa Rica. During this project, a participatory environmental assessment was carried out with the local actors of the Sub-Basin and a process of grassroots social organization was promoted, culminating in the formation of the Pro Jabonal Basin Association.
47. April 2005 to July 2006: Coordinator of the Project "Recovery of the Microcuenca de la Quebrada Los Negritos". Research and Social Action Project of the ProGAI of the University of Costa Rica. This project promoted a participatory process of diagnosis and implementation of environmental recovery projects with the coordination of local actors and state public institutions.
48. 1998 to December 2006. Environmental Regent of the Tuis Hydroelectric Project. Turrialba, Costa Rica.
49. July 2006: Technical support and Facilitator of the Workshop "Implementation of National Integrated Water Resources Management and Efficiency Plans", held in Tegucigalpa, Honduras and Managua, Nicaragua. Organized by DHI Water & Environment and UNEP.

50. 2004 - 2006: Auditor of SA 8000 and Auditor of ISO 14001 with Intertek Labtest.
51. 2006: Auditor of Norma SA 8000 to Chiquita Brands, with Intertek Labtest.
52. 2004 - 2006: Four Code of Conduct Audits to companies: Empresa Sociedad Agrícola Virú in Trujillo, Peru; Nestlé in Santo Domingo, Dominican Republic; Distribuidora Norte Sur de Costa Rica, Sara Lee Division; Medias y Calcetines de Costa Rica, with Intertek Labtest.
53. 2004 - 2006: Development of the Code of Conduct and application of the Code in two companies of the Florida Tomato Growers Association (Asociación de Tomateros de la Florida"), USA, with Intertek Labtest.
54. May 2006: Technical support and Moderator of the UNEP Central America Meeting in support of the 2005 target on National Integrated Water Resources Management Plans. Panama City, Panama.
55. 1997 - 2005: Representative of the Federation of Conservation Organizations (FECON) in the National Commission for Waste Water Discharge and Refuse Regulations. Headed by the Ministry of Health. Costa Rica.
56. March 2002 - July 2005: National Coordinator of the Water Technical Group. Group that has promoted, disseminated and developed a Water Resource Law proposal for Costa Rica.
57. July 2004 - July 2005: Coordinator of the Support Group in the Priority Thematic Area in Water Resources of the Environmental Forum of the National Council of Rectors (CONARE).
58. January to May 2005: Consultant to the Ministry of Environment and Energy (MINAE) and UNDP for the preparation of the Diagnosis of the Contribution of Pollutants to the Coastal Marine Zone of the Costa Rican Caribbean and proposal of Plan of Action.
59. August to December 2004: Consultant of the IDB, for the elaboration of the diagnosis and proposal in the Management of Environmental Quality for Costa Rica, as part of the National Environmental Strategy of the Ministry of Environment and Energy.
60. March 2000 - September 2004: Technical Officer for the Global Water Partnership -GWP of Central America and member of the ToolBox Task Force (ToolBox) for Integrated Water Resource Management, of the Global Water Partnership -GWP at a global level.
61. March 2000 - September 2004: Responsible for reviewing and systematizing experiences in Integrated Water Resource Management, to be published in the ToolBox as case studies for the Global Water Partnership. So far responsible for 9 case studies.
62. October 2003 to May 2004: Consultant for the International Center on Economic Policy (CINPE)-CR-USA for the elaboration of the Environmental Water Agenda in Costa Rica.
63. March 2003 to August 2003: Consultant contracted by the Ministry of Environment and Energy (MINAE) for the elaboration of the proposed Regulation of Classification of Bodies of Surface Water in Costa Rica.
64. May 2002 - April 2004: Co-Coordinator of the Global Research Project "Social Responsibility in Sustainable Agriculture"-SASA (SASA). Research project ISEAL (International Alliance for Accreditation and Social and Environmental Labelling), in conjunction with Fair Trade (Fairtrade Labelling Organization International -FLO); Sustainable Agriculture Network (SAN); International Social Responsibility (SAI); the Organic Agriculture Network (IFOAM).

65. May 2002 - July 2003: Coordinator of three pilot social audits in banana cultivation in Costa Rica, flowers in Colombia and oranges in Brazil, with the participation of auditors from each of the SASA Project organizations: FLO, SAI
66. 1996 - 2000: Representative by FECON to the National Commission for the Recovery of the Rio Grande de Tárcoles Basin.
67. 1996 - 2002: Environmental Expert of the Ecological Prosecutor's Office of the Public Prosecutor's Office. Costa Rica.
68. 1999 - to 2001: Environmental Consultant of Technological Treatments D&A S.A. To develop environmental diagnostics, assembly and implementation of Environmental Management Systems, impact mitigation plans, environmental recovery plans and environmental impact and risk studies.
69. 1998 - 2001: Environmental Consultant of GEOASTEC S.A. To develop environmental impact studies, assessments and monitoring for the control of water resource pollution.
70. January 1999 - July 2000: Consultant to the Foundation for Urban Development (FUDEU). Hired as a national expert consultant on fresh water and pesticides. To implement the Central American Integrated Environmental Management System Project of the Central American Commission for Environment and Development (CCAD).
71. January to May 2000. General Coordinator of the II National Congress on Sustainable Development: Perspectives Towards the 21st Century. National Council of Rectors (CONARE), Sub-Commission on Sustainable Development.
72. June 1996 - May 2000: Representative of the National University of Costa Rica in the Sub-Commission on Sustainable Development of the National Council of Rectors (CONARE).
73. 1999. Professional services to the Friedrich Ebert Stiftung Foundation to develop a prefactibility analysis for the processing of organic bananas in the region of Talamanca - Costa Rica
74. February to September 1999. Named Environmental Auditor by the following companies: Embutidos Zar de Costa Rica, Productores de Leche Monteverde S.A., Diario La Nación, Platanera Sixaola, AMANCO de Costa Rica, ETIPRES de Costa Rica, Beneficio de café Coopelibertad R.L.
75. October 1998. Expert water consultant. Contracted by ABT Associates Inc., North American Consultant responsible for consulting the IDB in Evaluation and Development of Management Proposal of the Rio Grande de Tárcoles Basin, Costa Rica.
76. 1996 - 1998: General Coordinator and Executive Secretary of the International Congress on Pesticide Use in Developing Countries: Impact on Health and the Environment. Organized by Pesticide Program, National University of Costa Rica and funded by Swedish Agency for Cooperation (Sida). Responsible for the organization in general, dissemination, invitations, editions and impressions of memories, search for funds and management of economic funds.
77. 1992 - 1998: Lecturer in General Ecology, School of Environmental Sciences, National University of Costa Rica.
78. 1996 - 1998: Professor course of Environmental Crisis, School of General Studies, National University, Heredia, Costa Rica
79. 1995 - 1997: Coordinator of the Scientific Commission - National Technical, Study on Open Pit Gold Mining in Costa Rica.

80. February 1997: Assistant Solidarity Consultant, Inter-Ecclesiastical Development Organization for Latin America of the Netherlands. For the monitoring and evaluation of environmental criteria in banana production in Costa Rica for fair trade in Europe.
81. 1993 - 1997: Scientific and administrative coordinator of the Bilateral Research Project National University of Costa Rica and University of the State of Ghent, Belgium: "Development and application of effective methods at low cost for biological monitoring of the rivers of Costa Rica". Financed by the European Union. Responsible for all technical definition, implementation and execution of research, management of financial funds, appointment and management of attendees, programming of activities, analysis of the results and preparation of the annual reports and the final report in English.
82. January - July 1996: Scientific and administrative coordinator of the project "Binational Study of Pesticide Contamination in the San Juan River". Responsible for the technical evaluation, analysis of results and preparation of final report.
83. June 1996: Associate Consultant of MAX HAVELAAR Foundation (Switzerland) in Costa Rica. For the definition of environmental criteria in the production of bananas in Costa Rica, intended for fair trade in Europe and inspection in the field of banana farms.
84. April 1996: Organizer and exhibitor of the Workshop Evaluation of the Water Quality of the Rivers. ICAES, Coronado, Costa Rica.
85. 1994 - 1995: Scientific and Administrative Coordinator of the Bilateral Research Project University of Costa Rica-"Florida Agricultural and Mechanical University", Tallahassee, Florida: Development of a Biological Index for monitoring water quality in Central America". Project financed by the AED.
86. April - December 1995: Representative of Civil Society to the Board of Directors of the National Environmental Impact Assessment Commission of Costa Rica, attached to the Ministry of Natural Resources, Energy and Mines (MIRENEM) of Costa Rica.
87. 1991 - 1995: Founder and Member of the Board of Directors (as Secretary, Vice-president and President), Executive Secretariat and Administrative Council of the Costa Rican Ecologist Association (AECO).
88. 1994 - 1995: President of the Federation of Environmental Groups of Costa Rica (FECON).
89. 1993 - 1994: Organizer and speaker of the II and III Cantonal Seminar-Workshop on Habitat and the Environment in the Homeless with the themes: "Solid Waste: Collection, Management and Disposal" and "Urban Border and Protection Areas". Organized by the Costa Rican Ecologist Association (AECO).
90. 1993 - 1998: Advisor and Tutor of Research and Thesis projects of students of Biology of the National University of Costa Rica, and of Civil Engineering and Industrial Engineering of the University of Costa Rica.
91. 1993 - 1994: Professor of Environmental Impact Assessment taught in La Paz, Bolivia and Costa Rica, requested by the Latin American Institute of Agroindustrial Development (IFAIN) and offered to participants from Civil Society and Government.
92. June 1993: Talk given at the "Université Blaise Pascal", Clermon-Ferrand, France: "Condition of surface waters in Costa Rica: biomonitoring and ecotoxicology".
93. 1992 - 1993: Researcher at the Research Center on Environmental Pollution -CICA-, University of Costa Rica, in the research project "Recovery of the River Basin Quebrada Los Negritos".

94. January - February 1993: Coordinator a.i. of the Pesticide Program of the National University of Costa Rica.
95. October - December 1988: Researcher in the Project "Promotion of Aquaculture in Central America", of the Ministry of Agriculture and Livestock (MAG) and Deutsche Gessellschaft fur Technische Zusammenarbeit (GTZ), in Lake Arenal.
96. October 1987 - July 1988: Extensionist and Researcher of the Osa-Golfito Integrated Rural Development Project, of the Government of Costa Rica and the European Union (EEC/NA-85-06). Organizer and trainer of a group of young people from Finca Jalaca, South Zone, for the implementation of Fish Aquaculture Project.
97. 1986 to September 1987: Specialist hired by Camarones del Sur. Research and production of shrimps in ponds in the South Pacific area of Costa Rica.
98. 1985-1986. Literacy trainer for the community of Barrio Las Flores, Colorado, Abangares. Extension Project to Fishing Communities, National University of Costa Rica.

d.2. In higher education

1. January 2020 to present: Professor School of Health Technologies, University of Costa Rica.
2. July to December 2022: Professor of the master's degree in integrated water resource management, University of Costa Rica.
3. August to December 2021: Postgraduate Professor of Environmental Law. Faculty of Law. Systems of Postgraduate Studies, University of Costa Rica.
4. September 2011 - to May 2014: Professor School of Health Technologies, University of Costa Rica.
5. September 2004 - November 2013: Professor of the Master in Watershed Management of the Tropical Agronomic Center for Research and Teaching -CATIE. Professor of Integrated Water Resource Management.
6. January 2003 - November 2013: Professor of the Master of Natural Resource Management, Post Graduate System of the State Distance University -UNED. Professor of Integrated Watershed Management.
7. January 2003 - present: Director and Advisor of Thesis in Biology and Bachelor of Environmental Health of the University of Costa Rica, National University, of CATIE Basin Management Students and UNED Master of Natural Resource Management students.
8. 29 October - 05 November 2007. Participant as Trainer in Course of Auditors of Fair Trade. Bonn, Germany.
9. 16, 17 and 18 July 2007. Professor of the III Ibero-American Conference of the RILCA Network of CYTED, on the theme of "Use of Biological Organisms in the Water Quality Assessment", held in Antigua, Guatemala.
10. 12-15 June 2007. Trainer at the "First Ibero-American Workshop on Quality of Analytical Information in Water Quality Laboratories". Organized by the RILCA Network of CYTED. Panama City, Panama.
11. January 1996 - December 1998: Professor II and Researcher, Regional Institute of Studies on Toxic Substances (IRET) formerly Pesticide Program: Development, Health and Environment (PPUNA), Faculty of Land and Sea, National University, Heredia, Costa Rica.

12. 1992 - 1995: Professor Graduate Instructor and Researcher, School of Environmental Sciences, National University, Heredia, Costa Rica.
13. 1992 - 1995: Professor and Researcher, Research Center on Environmental Pollution (CICA), University of Costa Rica.
14. January - December 1993: Professor, School of Industrial Engineering, University of Costa Rica.
15. 1985 - 1986: Professor Instructor Bachelor, School of Marine Biology, National University, Heredia.
16. 1984 - 1985: Teaching Assistant I, School of Marine Biology, National University, Heredia.
17. January - December 1982: Assistant Extension, School of Marine Biology, National University, Heredia.

d.3. At other levels of education:

1. July - October 2021. CCAD - FLACSO Professor of the "Special Course on Water Governance and Water Security in Central America and Mexico: Territorial Dynamics of the basin to the sea in transboundary spaces." Taught to the Region of Mexico, Central America and the Caribbean.
2. August - September 2021: Consultant Asociación GOAL Internacional de Honduras. Consultancy "Training on Integrated Water Resource Management and Implementation in Water Policies", in coordination with GWP of Central America in Honduras.
3. May 2006: Moderator and Secretary of the UNEP Central American Meeting for Support to Target 2005 on Integrated Water Resources Management Plans.
4. January 2002 - December 2004: Organizer and Trainer of at least twelve Short Courses in Integrated Water Resource Management and ToolBox, at different levels of the Central American countries. With water technicians and professionals, professors and university students, mayors and municipal officials. Two to students and professors of the San Carlos University of Guatemala; one to mayors and technicians of the municipalities of the Choluteca River basin in Honduras; one to mayors and technicians of the municipalities of the Mountainous Basin of El Salvador; one to teachers and students of CATIE and one to technicians of public institutions in Costa Rica.
5. March 2003: Organizer of the Workshops on Water, Food and Environmental Sustainability in Central America and Water and Culture, presented in Kyoto, Japan, at the Third World Water Forum (3WWF).
6. March 2003: Organizer and Coordinator of the Choluteca River Basin Diagnostic Workshop and Project Proposal for Water, Food and Environmental Management, in Tegucigalpa, Honduras., with 45 participants.
7. January 2002 to January 2003: Organizer and Trainer of seven ToolBox Workshops on Integrated Water Resource Management of the Global Water Partnership, one in each of the Central American countries. Aimed at water resource experts and managers.
8. November 2001. Organizer and Coordinator of the Central American Workshop on Groundwater Management, in which 33 experts from the region participated, representing each of the Central American countries.
9. November 2000 - March 2001. Training of managers of workshops of Straightening and Painting, San José and Belén-Heredia of Costa Rica, with the theme Environmental Impacts and Environmental Management Systems.

10. June 1996. Trainer in the Environmental Crisis Workshop, Belén, Heredia, with the theme of Water Pollution in Costa Rica.
11. April 1996: Workshop Evaluation of the Water Quality of the Rivers. Organizer and trainer of teachers of School of the Region of the Basin of the Tárcoles in coordination with "Global River Environmental Education Network", of the United States of America.
12. 1989 - 1999: Trainer and non-formal educator in various courses, workshops and talks in the field of Environmental Education, at the request of national NGOs such as: the Federation of Environmental Groups of Costa Rica (FECON), Asociación Ecologista Costarricense (AECO), Justice for Nature, etc.
13. October - December 1994: Participant in the National Science, Technology, Quality and Innovation Plan of the Ministry of Science and Technology (MICIT). Responsible for the water chapter within the Technology Programme Environmental Sciences and Technologies Program.
14. 1992 - 1993: Researcher and writer of the environmental chapter of the Pesticide Manual: Guide for Central America. Editorial A. 1995.

d.4. Other experiences:

1. Support in the development of project proposals and funds for communities other than those in a river basin to work on integrated river basin management. Such as the Choluteca River Basin in Honduras, communities adjacent to the Río Volcán in the Térraba River Basin in Costa Rica, among others.
2. Support and training for urban and rural communities, such as: Vecinos de Montecillos, Alajuela; La Palmera de Aguas Zarcas, Zona Norte; Los Guido, Desamparados; Canton of Desamparados; Acosta; Caño Negro; Puerto Jiménez, Peninsula de Osa; University students; in the organization, awareness of environmental problems and implementation of environmental control and improvement projects.
3. Technical scientific support to environmental NGOs and Development Groups and Associations in the assessment and control of cases with environmental problems and affecting human and/or environmental health.
4. 1995. Organizer and founder of the Movimiento Ambiental Desamparadeño (MAD).
5. 1995. Organizer of meetings and workshops in the canton of Desamparados for training and discussion of environmental issues of the moment.
6. October 1991- January 1993. Coordinator of the Alternative Habitat Project, Comunidad de Los Guido, Desamparados, of the Costa Rican Ecological Association -AECO.
7. February, 1992. Organizer of the I Encuentro: Youth and environment workshop.
8. June 1989 and June 1992. Organizer of the 1st and 3rd Environment Month (1989) in coordination with the Ministry of Natural Resources, Energy and Mines.
9. 1989 – 1996: Founder and associate of the Costa Rican Ecological Association -AECO- since 1989.

E. OTHER STUDIES

e.1. Training courses and workshops received

1. June and August 2010. Modular Course on Watershed Management and Management: Module II "Water balance and hydrogeology for river basin management". Taught by the University of Costa Rica (UCR), Technological Institute of Costa Rica (ITCR) and the Tropical Agricultural Research and Teaching Center (CATIE).
2. January 2008. Pollutant Dispersion Modeling Course. Taught at the University of Costa Rica. Course funded by the International Atomic Energy Commission.
3. 29 October - 05 November 2007. Participant of the International Inspector Training of FLO-Cert GMBH. Organized by FLO-Cert Certification of Social-Economic Development GMBH. Bonn, Germany.
4. June 2006. Regional Workshop "Strengthening Environmental and Health Laboratories in Latin America and the Caribbean". Organized by the Latin American and Caribbean Environment and Health Laboratory Network, RELAC, the Pan American Health Organization (PAHO) and the International Atomic Energy Agency (IAEA), Lima, Peru.
5. October 2005. "Colloquium on Monitoring and Analysis of Water Quality in Latin America and the Caribbean". Organized by the United States Environmental Protection Agency (USEPA), San Juan, Puerto Rico.
6. June 2005. 2nd International Inspector Training of FLO-Cert GmbH. Organized by FLO-Cert Certification of Social-Economic Development GmbH. Bonn, Germany.
7. May 2005. Euregap Coffee joint Train-the-Trainer and CB Workshop. Includes full references of "Utz Kapeh Certified Responsible Coffee". Organized by "The Global Partnership for Safe and Sustainable Agriculture". San José, Costa Rica.
8. September 2004. I Latin American Seminar on Public Policies in Water Resources.
9. April 2004. Workshop on "Internal Control System" and "Discrimination" organized by the SASA Project at FAO, Rome, Italy.
10. September 2003. Training of Auditors in SA8000 Standard. Sao Paulo, Brazil.
11. July 2003. Course for Advanced Auditors in the Rainforest Alliance Certification of the Sustainable Agriculture Network -SAN, San José, Costa Rica.
12. June 2003. Workshop on "Social Standards". Organized by the SASA Project. Brussels, Belgium.
13. December 2002. Workshop on "Internal Control System" organized by the SASA Project in BioFach, Bonn, Germany.
14. June 2001. Workshop on Environmental Pollution: Institutional and Legal Framework and Technological Options for Prevention and Mitigation. CIEDES, UCR, San José, Costa Rica.
15. November-December 1999. II Regional Course in Environmental Law. Second Module. Central American Commission for Environment and Development (CCAD), Swiss Commission for Development (SDC) and Popular University of Nicaragua (UPONIC). Granada, Nicaragua.
16. September 1999. II Regional Workshop on Integrated Environmental Management Systems. Foundation for Urban Development, Integrated Management Systems and Environmental Quality Project in Central America. Central American Commission on Environment and Development -CCAD- Guatemala, Guatemala.

17. August 1999. Participatory Management of Urban Rivers in Latin American and Caribbean Cities. HABITAT-UNDP, Urban Management Programme (GPU)-Latin America and the Caribbean. Belém, Brazil.
18. August 1999. National workshop on environmental management policies in Costa Rica. Foundation for Urban Development, Integrated Management Systems and Environmental Quality Project. Component Costa Rica. Coronado, Costa Rica.
19. July 1999. Workshop on citizen participation mechanisms: Biodiversity Law and Municipal Code. Costa Rica Sustainable Network and Biodiversity Network. Ciudad Quesada, San Carlos, Costa Rica.
20. June 1999. Workshop on the management of water, air, solid and hazardous waste and pesticides in Costa Rica. Foundation for Urban Development, Integrated Management Systems and Environmental Quality Project. Component Costa Rica. Coronado, Costa Rica.
21. September 1998. Workshop: Social and environmental criteria for the production and alternative marketing of bananas. Friedrich Ebert Foundation Representation Costa Rica. La Catalina, Heredia, Costa Rica.
22. May 1998. Course - Workshop: Indicators of Sustainability. Río Segundo Project, Royal Embassy of the Netherlands, PLAMA-Virilla. La Selva-OET Experimental Station, Sarapiquí, Costa Rica.
23. March 1998: Course Interpretation of the ISO 14000 Series on Environmental Management. LABCAL-Universidad de Costa Rica, SETENA-MINAE, San José, Costa Rica.
24. April 1998: Environmental Audit Course according to ISO 14000. LABCAL-University of Costa Rica, SETENA-MINAE, San José, Costa Rica.
25. October 1996: Workshop on Environmental Impact Assessment and Environmental Impact Strategies, held in Amsterdam, The Netherlands.
26. May 1996: I Workshop for the promotion of healthy environments in Central America. Organized by ACEPESA, PAHO, Environment and Health Program in the Central American Isthmus and Asociación Centro Ejecutor de Proyectos Económicos y de Salud, San José, Costa Rica.
27. March 1995: Training workshop for trainers: Approaches to teaching environmental epidemiology. Organized by the Pan American Health Organization (PAHO); Pan American Center for Human Ecology and Health (PAHO); Pesticide Program of the National University and Office of Global and Integrated Environmental Health (WHO), San José, Costa Rica.
28. December 1994: Seminar-Workshop on the Use and Sustainable Management of Water Resources. Organized by Embassy of the Netherlands and National University, San José, Costa Rica.
29. December 1994: Basic Internet Access Course. Offered by Instituto Tecnológico de Costa Rica. Cartago, Costa Rica.
30. August 1994: Workshop on the management of the water resources of the Central American isthmus. Organized by Central American Parliament, Guatemala, Guatemala.
31. July 1994: Training course in Urban Hydrology and mathematical models of water quality. Taught by Pan American Institute of Highways and University of Costa Rica. San José, Costa Rica.
32. September 1993: Short course in Toxicological Assessment. Taught by Berlin University of Technology and SETAC. Berlin, Germany.

33. July 1993: Course and Workshop on groundwater pollution. Organized by the Costa Rican Association of Water Resources and Environmental Sanitation. San José, Costa Rica.
34. September 1990: First Summer Course in Ecotoxicology, to European countries. Organized by the Ghent State University, Belgium. Ghent, Belgium.
35. 1982: II Workshop on University Extension. Organized by National University. Heredia, Costa Rica.

e.2. Organization or participation as an oral or written speaker in seminars, congresses, workshops or courses.

1. April 2016 to April 2019: President of the V Latin American Conference on Sanitation (Latinosan), held on April 1, 2 and 3, 2019 in San José, Costa Rica.
2. March 2018. 8 World Water Forum. Brasilia, Brazil.
3. September 2017. Participation in World Water Week. SIWI (Stockholm International Water Institute). Stockholm, Sweden.
4. April 2016. Participation and Speaker of the IV Latin American Conference on Sanitation (Latinosan), held in Lima, Peru.
5. 7 March 2014. Visit to the Center for New Water Technologies (CENTA) in Seville, Spain.
6. 5 March 2014. Participant of the Ibero-American Water and Irrigation Forum and the Water Fair in Zaragoza. Zaragoza, Spain.
7. 4 March 2014. Participant in working day with technicians of Zaragoza City Council, Ebro Hydrographic Confederation (CHE).
8. 3 March 2014. Participant and exhibitor at the Multisectoral Meeting Spain/Central America for the intelligent and sustainable management of water. With members of Zinnæ, exposing the "Central American Context in Water Matters and Technological and Innovation Needs". Zaragoza, Spain.
9. November 14, 2013. Speaker of the LXXV National Medical Congress 2013 "Medicine and Integral Health from Popa to Proa, Puntarenas, 20 years later", with the theme "Integrated Watershed Management and its Impact on Health". Puntarenas, Costa Rica.
10. October 17, 2013. Exhibitor of the 2nd Conference on Scientific Technological Research - 2013. "Commentator of master presentations". Alajuela, Costa Rica.
11. 22 and 23 June 2013. Organizer, speaker and facilitator of the "National Meeting of Community Water Management. For a joint effort between civil society and the State." National Technical University, Villa Bonita de Alajuela, Costa Rica.
12. 27 - 28 May 2013. Speaker of the V National Congress of River Basins - II Central American Congress of River Basins, with the theme "Integrated Water Resource Management at the level of the Purires River Micro-basin, Cartago, Costa Rica".
13. 21 to 24 March 2013. Community Water Management and Sanitation Fair. Head of the Thematic Forum on Community Management of Water and Sanitation, speaker in several panels and talks. Granada, Nicaragua.

14. 15 - 16 October 2012. Speaker of the I Congress on Food Security and Nutrition, with the presentation "The Situation of Water Resources and Food Security". University of Costa Rica.
15. 15 February 2011. Talk at the Congress on Aquatic Macroinvertebrates, with the presentation "Impact of leachates produced in a landfill on the aquatic macroinvertebrate community: use of the BWPM-CR index in the water quality assessment of Quebrada Churuca, Costa Rica." University of Costa Rica.
16. August 20, 2010. Speaker at the II National Day of Scientific Culture, in the month of Science and Technology with the theme: "Research and social action in integral environmental management: a strategy for the development of the country." The event was organized by the Ministry of Science and Technology (MICIT), the National Council for Scientific and Technological Research (CONICIT) and the National High Technology Centre (CENAT).
17. 6 to 09 July 2010. Organizer and Coordinator of the Meeting of Local Experiences in Integrated Watershed Management in Central America: Integrating Water, Territories and Communities. Organized by the Institutional Program of Integral Environmental Management of the University of Costa Rica (ProGAI), the Tropical Agronomic Center of Research and Teaching (CATIE) and the International Union for Conservation of Nature (IUCN). Event that lasted 4 days and had the participation of 85 people.
18. March 19-24, 2010. Responsible for the Session on Integrated Management of Water Resources, in the V Analysis Forum "Preservation and Sustainable Use of Water Resources". Organized by the Regional Cooperation Program with Central America in environmental matters of the Spanish Agency for International Cooperation for Development (AECID)- Fondo de España-SICA (FES), the Central American Commission for Environment and Development (CCAD); with the support of the Central American Water Action Network (FANCA), the Indigenous and Peasant Coordinating Association of Central American Community Agroforestry (ACICAFOC) the World Water Association (GWP) the Legislative Assembly of Costa Rica and other national and international entities, including the ProGAI of the University of Costa Rica. Duration: 3 full days.
19. February 2010. 21st Century Watershed Technology Conference. Improving Water Quality and Environment. EARTH, Guácimo, Costa Rica.
20. 15 to 19 October 2009. Organizer of the National Course of Integrated Management of River Basins in Costa Rica: I Module. Organized and taught by the University of Costa Rica (UCR), Technological Institute of Costa Rica (ITCR) and the Tropical Agricultural Research and Teaching Center (CATIE). 90 hours.
21. 25 and 26 June 2009. Participant of the Iberoeka Water Quality Management Forum. San José, Costa Rica.
22. February 2008. Organizer and coordinator of the National Congress of Integral Environmental Management. Organized by the Integral Environmental Management Program, the Vice-Rector of Research, the Vice-Rector of Social Action and the Rector of the University of Costa Rica. A 4-day event with more than 400 participants.
23. March 2006. IV World Water Forum: Youth Parliament for Water in Latin America and the Caribbean. Mexico, D.F.
24. January 2006 to present. Organizer and promoter of 4 workshops with local actors of the Jabonal River Sub-Basin, for the analysis, training, organization of a basin organization, participatory construction and implementation of Basin Management Plans.
25. October 2005 to present. Organizer and promoter of 3 workshops with local actors of the Quebrada Los Negritos Micro Basin, for the analysis, training, organization of a basin organization, participatory construction and implementation of Basin Management Plans.

26. September 2004. Course of the GWP ToolBox, at the I Latin American Seminar on Public Policies in Water Resources. Brasília, Brazil.
27. May 2004. Course on Integrated Water Resource Management. World Bank, Inter-American Development Bank and GWP-CA. San José, Costa Rica.
28. April 2004. III Henry A. Wallace Seminar. Water, Agriculture and Food Security. CATIE, United States Department of Agriculture and GWP-CA. San José, Costa Rica.
29. March 2004. IV International Seminar CYTED-XVII. An integrated approach to sustainable water management. Experiences in water management and valuation. National University, Costa Rica. Presentation of the talk in "Background, Process and Contents of a New Water Law in Costa Rica".
30. December 2003. Inter-American Workshop on Gender and Water. San José, Costa Rica. Presentation of a talk on Integrated Water Resource Management and Gender.
31. October 2003. Teacher of the course "Integrated Management of Water Resources and Introduction to the use of the GWP ToolBox". In Faculty of Engineering and Faculty of Agronomy, Universidad de San Carlos de Guatemala.
32. September 2001. IV Inter-American Dialogue on Water Management. Brazilian Ministry of the Environment, Organization of American States and Inter-American Network of Water Resources. Foz de Iguazú, Paraná, Brazil.
33. April 2001. Talk at the Fair-Trade Labelling Organization (FLO). Fair Trade Labelling Organization. Copenhagen, Denmark.
34. May 2000. General Coordinator of the II National Congress on Sustainable Development, Costa Rica Perspectives Towards the 21st Century. San José, Costa Rica. National Council of Rectors (CONARE), San José, Costa Rica.
35. November 1999. III Regional Symposium on Water Policy, Legislation and Management. Central American Integration System. Central American Commission on Environment and Development. Ocotlán, Nicaragua.
36. November 1999. Talk at the Regional Master's Course in Environmental Law. Central American Integration System. Central American Commission on Environment and Development. Granada, Nicaragua.
37. August 1999. Talk at the First International Seminar on River Management in Latin American and Caribbean Cities. HABITAT-UNDP, Latin America Urban Management Programme. Belém, Brazil.
38. September 1998: Workshop: Social and environmental criteria for the production and alternative marketing of bananas. San José, Costa Rica.
39. July 1998: Seminar-Workshop: Sustainable Consumption. San José, Costa Rica.
40. May 1998: Speaker at the International Banana Conference: "The Environmental Impact of the Banana Industry". Brussels, Belgium
41. December 1997: Project generation seminar on "Water Quality Monitoring of the San Juan River Basin", San José, Costa Rica.
42. June 1997: Exhibitor and participant for the Environmental Sector of Costa Rica at the German Ecumenical Fair. Liebsig, Germany.

43. May 1997: I Encuentro sobre Organismos de Cuenca de Centro América y el Caribe. San José, Costa Rica.
44. August 1995: Speaker at the Third Caribbean International Conference on Entomology and 78th Annual Assembly of the Florida Entomological Society. San José, Costa Rica.
45. February 1995: Speaker at the III Central American and Caribbean Symposium on Environmental and Health Analytical Chemistry. Organized by UCR, UNA and UNED. San José, Costa Rica.
46. November 1994: Speaker at the Seminar - Workshop on the Sustainable Use and Management of Water Resources. Sponsored by the Royal Embassy of the Netherlands and the UNA, within the framework of the Costa Rica-Netherlands Bilateral Agreement on Sustainable Development.
47. October 1994: 3rd Biennial Meeting of the International Society of Green Economy (Down to Earth). Organized by International Society of Ecological Economy, UNA, IICA, Earth Council and UNEP. San José, Costa Rica.
48. May 1994: Exhibitor at the Ecotourism Workshop: Ecological and Legal Aspects of Tourism in Costa Rica. With the presentation of the topic: Environmental Impact Assessment Techniques. Organized by the Ecological Group CEDRELA and the University of San José. San José, Costa Rica.
49. September 1993: Seminar - Workshop Introduction of the Environmental Dimension in University Work. San José, Costa Rica.
50. November 1992: Friends of the Earth Annual Assembly. Organized by the International Organization Friends of the Earth. Bilbao, Spain.
51. July 1992: Speaker at the XI Inter-American Congress on Risk Prevention at Work. Organized by the National Insurance Institute. San José, Costa Rica.
52. 1985: Exhibitor at the First Symposium of Sea Turtles of the Western Pacific. Organized by the University of Costa Rica.
53. 1985: I Environmental Congress of Costa Rica. Organized by University of Costa Rica. As organizer and assistant.

e.3. Seminars, congresses or meetings attended.

1. March 2005. Participation in the Workshop "India's Water Economy: Bracing Up for a Turbulent Future" in Anand, India.
2. August 2004. Global Water Partnership Annual Assembly. Malaysia.
3. December 2003. Global Meeting CAPNET (Capacity Building Network for Integrated Water Resources Management). San José, Costa Rica.
4. November 2003. Water Fair. Panama, Panama.
5. May 2003. Annual Assembly of the Global Water Partnership. Trinidad and Tobago.
6. March 2003. Third World Water Forum. Kyoto, Shiga and Osaka, Japan.
7. December 2002. Water Fair. Panama.
8. August 2002. Annual Assembly of the Global Water Partnership. Ghana, Africa.

9. August 2001. Annual Assembly of the Global Water Partnership. Stockholm, Sweden
10. August 2001. The 11th Stockholm Water Symposium. Stockholm Water Prize and Stockholm Junior Water Prize. Stockholm, Sweden.
11. September 1999. Analytical Seminar for Social Certification in Banana Production in Costa Rica: Interpretation of the SA 8000 and the Code of Conduct Ethical Trade Initiative (ETI). CINPE, Universidad Nacional, San José. Costa Rica.
12. December 1997: Seminar on International Waters with FOCADES. Organizes Regional Water Resources Committee (CRRH). San José, Costa Rica.
13. September 1996: National Meeting of Actions for Clean Production. Ministry of Science and Technology, CEGESTI and Technological Institute of Costa Rica. San José, Costa Rica.
14. September 1995: XIX Central American Congress of Sanitary and Environmental Engineering. V National Congress of Water Resources. Organized by AIDIS and ACREH, San José, Costa Rica.
15. October 1992: First National Symposium on Pesticides: Problems and Solutions. Organized by UNA, GTZ, CATIE, UNED, ITCR, OPS, CSO and INS. San José, Costa Rica.
16. June 1992: Forum Uncontrolled banana expansion in Limón and Sarapiquí. Organized by Association of Defense of Agricultural and Environmental Workers, Diocesan Commission of Social Pastoral of the Apostolic Vicariate of Limón, ABAS, Coordinator of Banana Unions.
17. October-November 1991: First Seminar-Workshop on Beach Cleaning and Solid Waste Treatment in the coastal zone. Organized by German Society for Technical Cooperation (GTZ), National Waste Management Plan Project and Pro-Conservation Aquatic Association (APROCA).
18. June-July 1989: World Youth Congress. Organized by youth organizations of socialist countries. Pyonyang, Korea.
19. 1985: Symposium on Natural Resources and Development in Costa Rica. Organized by CONICIT and UNA.
20. 1985: I Seminar on Fisheries Problems of Costa Rica. Organized by Centro Regional de Occidente of the University of Costa Rica.
21. 1984: First University Seminar on the National Environmental Problem. Organized by Natural Resources Committee (CORENA) and Science, Technology, Planning and Policy Studies Group (CITEPPOL).
22. September 1984: First Environmental Congress of Costa Rica. Organized by the University of Costa Rica. San José, Costa Rica.
23. 1984: I National Seminar of Aquaculture. Organized by Consejo Nacional de Investigaciones en Ciencia y Tecnología (CONICIT), Universidad Nacional, Universidad de Costa Rica, Ministerio de Agricultura y Ganadería, Organización de Estudios Tropicales, Agencia Internacional para el Desarrollo (AID).
24. 1983: Western Atlantic Turtles Symposium (STAO). Organized by IOCARIBE.

F. PRODUCTION

f.1. Publications:

1. Astorga, Y. (2022). Channels of Impact of Climate Change on the Infrastructure of Water and Sanitation Services in the SICA countries. ECLAC, Mexico.
2. Astorga, Y. (2022). Process of change in the development of the national water policy and the action plan for IWRM. CREW+. GIZ project.
3. Gutiérrez Espeleta, E., Murillo Zamora, C., Herrera Balharry, E., Gómez, A., Astorga E. Yamileth and others. (2021). Assessments on the status and forecast of the situation described for each SDG in Costa Rica by 2021. OdD Development Observatory - University of Costa Rica. https://www.amazon.com/dp/B09LGW57YK/ref=nodl_?ref_=pe_3052080_397514860
4. Astorga, Y. and Molina, M.J. (2021). Case Study for Knowledge Management on local experiences in Water Security in Santa Cruz, Guanacaste, Costa Rica. Central American Commission for Environment and Development, Central American Integration Secretariat.
5. Hidalgo, H., Springer, M., Astorga, Y., Gómez, E. y Vargas, I. (2019). Water quality in Costa Rica. Chapter in Water Quality in the Americas. Risk and Opportunities. UNESCO. IANAS. IAP.
6. Astorga, Y. M. Springer, A. Muñoz, E. Loaiza y M. Abarca. (2018). Manual of community monitoring of water quality in rivers and streams. CRUSA Foundation-University of Costa Rica.
7. Astorga, Y. and others. (2017). National Drinking Water Policy of Costa Rica, 2017 – 2030. Instituto Costarricense de Acueductos y Alcantarillados. Ministerio de Ambiente y Energía. Ministerio de Salud. San José, Costa Rica
8. Astorga, Y., Phillips, J., Sáenz, I., Araya, A., Aguilar, N. y Fernández, D. (2016). National Plan of Investments in Sanitation. 2016-2045. Instituto Costarricense de Acueductos y Alcantarillados. San José, Costa Rica.
9. Astorga, Y. and others. (2016). National Wastewater Sanitation Policy. AyA-MINAE-MS Primera edición. San José, Costa Rica 2016. ISBN: 978-9977-62-153-1
10. Astorga, Y. and others. (2015). Policy of organizing and strengthening community management of drinking water and sanitation services. Gobierno de la República, Instituto Costarricense de Acueductos y Alcantarillados y PNUD. San José, Costa Rica.
11. Astorga, Y. (2015). Water resource management in Costa Rica. Revista Ambientico. ISSN 1409-214X. Ambientico 260, Article 3 Pp. 17-24.
12. Astorga, Y., Springer, M. and Reyes, F. (2013). Proposal of Indicators for the Ecological Monitoring Program in the Area of Inland Water Ecosystems. National System of Conservation Areas, San José, Costa Rica.
13. Astorga, Y. (2013). Water Resource Management in Costa Rica. XIX State of the Nation Report on Sustainable Human Development. State of the Nation. CONARE. Costa Rica.
14. Astorga, Y. (2010). Integrated Water Resources Management in a Micro-basin scale. 21st Century Watershed Technology Conference. Improving Water Quality and Environment. EARTH, Guácimo, Costa Rica.

15. Astorga, Y. (2010). Water Resource Situation. XV State of the Nation Report on Sustainable Human Development. State of the Nation, CONARE. Costa Rica.
16. Astorga, Y., Mora, B., Elizondo, K. and Alfaro, G. (2009). Development of water quality performance standards in priority sectors at the Central American level. CCAD/USAID/DR-CAFTA.
17. Astorga, Y. 2009. Water Resource Situation. XIV State of the Nation Report on Sustainable Human Development. State of the Nation, CONARE. Costa Rica.
18. Astorga, Y. 2008. Water Resource Situation. XIII State of the Nation Report on Sustainable Human Development. State of the Nation, CONARE. Costa Rica.
19. Astorga, Y. 2007. Water Resource Situation. XII State of the Nation Report on Sustainable Human Development. State of the Nation, CONARE. Costa Rica.
20. Auquilla, R.; Y. Astorga and F. Jiménez, 2006. Influence of Land Use on Water Quality in the Jabonal River Sub-basin, Costa Rica. *Natural Resources and Environment*. 48:81-92.
21. Ballesteros, M., V. Reyes and Y. Astorga, 2006. Groundwater in Central America: Its Importance, Development and Use, with Particular Reference to its Role in Irrigated Agriculture. In: Giordano, M. and K.G. Willholth, 2007. *The Agricultural Groundwater Revolution: Opportunities and Threats to Development. Comprehensive Assessment of Water Management in Agriculture Series*. British Library, London, UK. 419 p.
22. GWP-Central America and Y. Astorga, 2004. Situation of Water Resources in Central America: Towards Integrated Management. Impresión Gráfica Editorama S.A. 68 p. Segura, O., M. Miranda, Y. Astorga et al., 2004. **Agenda Ambiental del Agua en Costa Rica**. EFUNA. 192 p.
23. Aguilar, A., X. Alvarado, Y. Astorga et al., 2004. Towards a New Water Law. Memory of a participatory construction process. Impresión Gráfica del Este S.A. 85 p.
24. Astorga, Y. Case Studies. December 2003. Integrated Water Resource Management in Central America. Global Water Partnership-Central America. 241 pp.
25. Astorga, Y. Water Governance Crisis in Costa Rica. June 2003. *Revista Ambientales*. Number 25. Revista Semestral de la Escuela de Ciencias Ambientales Universidad Nacional, Costa Rica. 17-25 p.
26. GWP-Central America and Astorga, Y. February 2003. ToolBox for Integrated Water Resources Management. Guide to Policies and Operational Tools. Global Water Partnership. 236 pp.
27. Astorga, Y. The situation of water resources in Costa Rica. July 2001. *Water Lines*. International Journal of Appropriate Technologies for Water Supply and Sanitation. London, United Kingdom. Vol. 20 N° 1 Quarterly.
28. Astorga, Y. December 2000. The Ecological Flag Program of the Ministry of the Environment. *Journal of Environmental Sciences*. National University. Heredia, Costa Rica. N° 20.
29. Astorga, Y. & E. Martínez. May 2000. Monitoring the environmental quality of the aquatic ecosystem of a river used in hydroelectric generation through the use of benthic macroinvertebrates. Poster presented at the II National Congress on Sustainable Development: Costa Rica Perspectives Towards the 21st Century. CONARE.
30. Astorga, A., Y. Astorga and others. March 2000. Integrated Management Systems and Environmental Quality Project -SIGA- Component Costa Rica Phase 1. Foundation for Urban Development -FUDEU-. la. Ed. San José, Costa Rica.

31. Chaverri F., C. Ruepert, Y. Astorga et al. 1999. Pesticide Manual II. Guide for Central America. Regional Institute for Toxic Substances Studies, National University. EUNA.
32. Astorga, Y. 1998. Problems of pollution of surface waters by tannery industrial activity. Justice for Nature Bulletin. San José, Costa Rica.
33. Astorga, Y. The Environmental Impact of the Banana Industry. 1998. International Banana Conference. Brussels, Belgium.
34. Astorga, Y. 1998. How effective are Environmental Impact Studies for Environmental Protection. El Financiero newspaper.
35. Astorga, Y. 1998. International Conference on Pesticide Use in Developing Countries: Impact on Health and Environment. Final Proceedings. San José, Costa Rica.
36. Astorga, Y. 1998. **List of Participants. International Conference on Pesticide Use in Developing Countries: Impact on Health and Environment.** San José, Costa Rica.
37. Astorga, Y. et al. 1998. **International Conference on Pesticide Use in Developing Countries: Impact on Health and Environment. Summary of Abstracts.** San José, Costa Rica.
38. Astorga, Y. and W. Flowers. 1997. "Development of a Biological Index for Central America". Final Report. Environmental Pollution Research Center, University of Costa Rica - University of Florida A&M, Tallahassee, USA.
39. Astorga, Y. 1997. "Binational Study of Pesticide Contamination in the San Juan River - Part of Costa Rica". Final Report. Pesticide Program: Development, Health and Environment, National University, Pan American Health Organization, Costa Rica.
40. Astorga, Y., N. De Pauw and G. Persoone. 1997. **Development and application of cost-effective methods for biological monitoring of rivers in Costa Rica.** Final Report. San José, Costa Rica; Gent, Belgium.
41. Flowers, R.W. y Y. Astorga, 1995. **Aquatic insects and water quality studies in Costa Rica.** Third International Caribbean Conference of Entomology, Florida Entomological Society. San José, Costa Rica, 6-10.
42. Astorga, Y. and J. Coto, 1995. Biological toxicity of industrial effluents in Costa Rica. Conference summary. III Central American and Caribbean Symposium on Environmental and Sanitary Analytical Chemistry. San José, Costa Rica.
43. Astorga, Y.; N. De Pauw; J. Coto; G. Persoone; L. Castillo; J. Solís; B. Beyst; T.M. Van Maele; R. Amparado and T. Van Wichelen. 1995. Development and application of cost-effective methods for biological monitoring of rivers in Costa Rica. Annual report of the status and progress of the Project. European Union. 118 p
44. Astorga, Y. y J. Coto, 1994. Surface water quality in Costa Rica. Reports of the Seminar-Workshop: Utilization and Sustainable Management of Water Resources. San José, Costa Rica.
45. Astorga, Y; J. Coto and J. Solís, 1994. Development of Biological Techniques to determine superficial water quality in rivers of Costa Rica (Tropical Characteristic). Summary of poster presented at the Seminar-Workshop: Sustainable Use and Management of Water Resources. San José, Costa Rica.
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G. KNOWLEDGE OF LANGUAGES

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