Ecosystems for future generations

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The special issue contains 14 research articles that are focused on ecosystems and its process. The articles are selected from the presentations made at the 4th International Conference of Environmental Network Researchers Group of IPN (Red de Medio Ambiente (REMA), Instituto Politécnico Nacional (IPN), México, CIMA 2021, that was held in hybrid mode in the city of Cuernavaca, State of Morelos from 6 to 8 October, 2021. The main theme of the conference was “Ecosystems for Future Generations.” The articles were selected through 3 days of presentations by 132 delegates overall in CIMA 2021. The main focus of CIMA 2021 was on six different themes affecting the ecosystem: (1) natural resource and biodiversity, (2) society, economy, and sustainable development, (3) climate change, (4) environmental pollution and bioremediation, (5) new technologies, energy, and environment, and (6) health, COVID-19, pandemic, and their global effects.

The first chapter by Isis Baró-Camarasa et al. aimed to determine and compare the concentrations of seven essential trace elements (Fe, Zn, Se, Cu, Mn, Cr, Co) and six non-essential trace elements (As, Cd, V, Tl, Ag) in the muscle and liver of a Munk’s pygmy devil ray pregnant female, Mobula munkiana, and its embryo. The second chapter authored by José Luis Uc-Castillo et al. is focused to know the morphological analysis in copepods inhabiting the water body with arsenic concentrations. Atmospheric pollution assessment in the Metropolitan Zone of Mexican valley was analyzed and presented in detail in the third article authored by Itzel Ibarra-Meza et al., which is also close to the Protected Natural Area with high diversity of birds visiting the region. The fourth article was by Alejandra Reyes-Márquez et al., focused on temporal distribution pattern of metals in water, sediment, and components of tropical structure in a coastal lagoon of the Gulf of Mexico. The fifth article is authored by Jacinto Elías Sedeño-Díaz et al., reported on using different multivariate approaches to assess the water quality in arid zones of Southern central Mexico. Pollution record in sediment cores from the transitional environment of Marquelia coast, Guerrero, Mexico, was authored by Godwyn-Paulson Pitchaimani et al., to comprehend the origin and pollutant phases of geochemical elements. In the seventh article, Rana Roy et al. focused on coal mining activities that are responsible for significant land degradation and the effects of ecosystem functioning. Manob Das et al. have written on the nexus between indigenous ecological knowledge and ecosystem services, which also analyzed the socio-ecological aspect for sustainable ecosystem management. In the ninth article, Devendra Kumar et al. have reported on the distributional shift of Rhizocarpon geographicum (L.) DC in Indian Himalayan Region under future climate scenarios. The tenth article by Felipe Silerio-Vázquez et al. reported on the photocatalysis for arsenic removal from water using solar photocatalytic reactors. Jonathan Gabriel Escobar-Flores et al. reported on the use of unmanned aerial vehicle images learning for agave plantations. The twelfth article authored by Diana Medina-Contreras et al. focused on the trophic structure of fish communities in mangrove systems subject to different levels of anthropogenic intervention from the eastern Pacific region of Colombia. Laura María Pantoja-Echevarría et al.
had reported on the role how sharks that play an important role in the regulation of marine ecosystems at lower trophic position in Baja California Sur, Mexico region. The final article authored by Mariana Negrete-Cardoso is focused on the descriptive analysis of nearly 416 documents which was done using bibliometric techniques in order to get the knowledge in circular economy focusing on waste management (2007–2020).

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has been given three times. In addition, she has also coordinated nearly five times the Integral Management of Chemical Residues course taught at CeProBi. She has been participating in academic postgraduate program (seminars, specified courses) and is also the present General Coordinator of the Doctorate program in Conservation of Landscape Heritage. She is also a member in the Masters program in Biotic Product Development for the past 23 years. Under her leadership, nearly six bachelors, 16 masters, and 6 doctorate students have graduated from Mexico as well as from the Universities of Toulouse and Montpellier, France. She is also serving as coordinator of the Environmental Committee of CEPROBI since December 2019 focusing on ecological conservation.

**Dra. Ana Judith Marmolejo-Rodríguez** is a full-time Professor in the Department of Oceanology from Interdisciplinary Center of Marine Science (CICIMAR) of the National Polytechnic Institute (IPN) in La Paz, México. Her main interest is focused on “Biogeochemistry of major and trace elements in diverse matrices of coastal systems.” She has participated in 53 scientific articles in indexed journals, and has 560 citations (SCOPUS), in 457 documents, which classifies her in a h-index = 13. Focusing on scientific projects, she has directed research projects related to her main theme and is also director of multidisciplinary and multinational project 2022 entitled: “Ecogeochemical modeling of coastal systems towards one health.” She has participated in numerous oceanographic scientific cruise programs since 1986 till date. Presently, she is working with trace elements in sediments in different coastal systems with a natural input (baselines) and/or anthropogenic influences. Recently, she is collaborating with researchers in CICIMAR focusing on diverse contamination aspects (potentially toxic elements, hydrocarbons, pesticides, and microplastics) of the sea and different tissues as well as maternal transfer of metals in some elasmobranchs. She is also a reviewer of numerous articles in indexed journals such as Science of the Total Environment, Marine Pollution Bulletin, Estuarine Coastal and Shelf Science of Elsevier Publication, and many others. Her doctorate and master’s degree was focused on “Environmental and food sciences, analytical and toxicological aspects” from the University of Vigo, Spain. She also has master’s degree in aquaculture and bachelor’s degree in chemical oceanography from the University of Colima in Mexico. She has been director/codirector of thesis for five doctorate and five master’s degree students and presently there are three postgraduate students pursuing their research. She also teaches marine geochemistry, chemical oceanography, environmental impact, and oceanography courses. During her early career, she has been working as academic technician in Marine Physicochemistry Laboratory at the Institute of Marine Sciences and Limnology (ICMyl), National Autonomous University of Mexico (UNAM). She has also served as research associate in Marine and Chemical Geology/oceanography laboratory in the Mexican military at the Marine Secretariat of Mexican Navy during 1986–1994 in Manzanillo city, Colima, Mexico.

**Dra. Eugenia López López** has a PhD in Ecology from the National School of Biological Sciences (ENCB) of the National Polytechnic Institute (IPN, México). She has carried out four external research collaborations: Chapala Ecological Station (in collaboration with Baylor University-Experimental Limnology Station); EARTH University, on biomonitoring with benthic macroinvertebrates; University of Oviedo, Spain, on Environmental DNA Evaluation; Instituto Gorgas, Panama, on leaf litter and its relationship with aquatic macroinvertebrate communities. She is a research professor at the ENCB, IPN, for 33 years and she is a member of the teaching staff in the Bachelor Degree Program related to Biology and she is also the member of Core Basic Professors of the Postgraduate program in Chemical & Biological Sciences (master’s and doctorate). She has 78 publications in indexed journals and 17 book chapters. Her basic research interest is on aquatic ecosystems health assessment. She has been as director of projects with different funding sources like CONACyT, Secretary of the Environment, Mexico City, and Secretory of the Environment, Guanajuato. She has several distinctions to her credits: (1) She is a member of the National System of Researchers Level 2; (2) Recognition of the Ramsar International Convention; and (3) Secretariat of Environment and Natural Resources of Mexico which was for the research project in the Laguna de Yuriria wetland. She has also been as Instructor in the Workshop “Calibration and Validation of the BMWP/PAN (Biological Monitoring Working Party for Superficial Tributaries of Panama)” where she was invited by the Ministry of Environment and the Gorgas Commemorative Institute of Health Studies, Panama, in 2016. She is a member in the following associations: member in Network of Environmental Researchers in IPN representing ENCB; member in Macrولاتinos Network; member in Hydrological Basins Network; member in REDMORA and REFAMA. She has been editor of several books and special volumes on Aquatic Ecology (Frontiers in Environmental Sciences). She is a reviewer for different indexed journals from Elsevier, Springer, and Wiley among others. She is an acting member board of the Journal Frontiers in Environmental Sciences (Freshwater Sciences).