



# Activity Report 2019-2020

## LAC University Consortium on Sustainable Waste Management

Report prepared by the Regional Office for Latin America and the  
Caribbean region - UNEP

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## I. Background.

In order to articulate responses to regional challenges on the issues related to waste management, the UNEP Latin America and the Caribbean Office, with the support of the International Environmental Technology Center (IETC), facilitated in 2016 the establishment of the **University Consortium for Sustainable Waste management in Latin America and the Caribbean**, which is comprised by 8 universities of the LAC region, in coordination with the Alliance of Ibero American Networks of Universities for Sustainability and the Environment (GUPES/ARIUSA, in Spanish). Following the formal establishment in May 2016 (Montevideo, Uruguay Declaration), the Consortium was reinforced through the agreement signed by the academic representatives in Cartagena de Indias, Colombia, in 2017.

The main objective of this initiative is the development and promotion of an academic programme for the sustainable waste management, to promote the education and the training of new professionals through a holistic approach to address challenges related with waste management.

A key initiative that was initially conducted by the Consortium was the development and publication of a **Post-graduate Academic Programme on Sustainable Waste Management for LAC**, consisting of four (4) modules<sup>1</sup>. A Guide on modalities for the adoption of the Academic Curriculum in LAC universities was also developed.

During 2018, the programme was tested through three (3) certificate courses: 1) Training on sustainable waste management for municipal officers (ULA-CIDIAT. Merida, Venezuela); 2) Training on Municipal Integrated Solid Waste Management Plans (ULA-CIDIAT and UDCA. Merida, Venezuela); 3) 1<sup>st</sup> International Course on Sustainable Waste Management and public Event on Sustainable Waste Management (PUCV. Valparaiso, Chile).

During the same period, UNAM University (Mexico), the largest in Latin America, incorporated into its Diploma on waste management (dependent on the Engineering School) a subject based on the academic proposal designed by the University Consortium. Likewise, ISALUD, from Argentina, launched a Certificate on Waste management incorporating some elements from the academic proposal, and UDCA, Colombia, approved the first Master Degree on Waste Management in the LAC region, as indicated below.

Since the establishment of the LAC University Consortium, a total of **six (6) face-to-face meetings** have been held with UNEP support, in Colombia, Mexico, Chile and Uruguay, back to back with public forums on waste management and dissemination activities, reaching out approximately **400 participants**. UNEP has also convened **28 virtual meetings** of the Consortium members, thus guaranteeing a close follow-up and planning of the activities of the group.

In order to continue the promotion and dissemination of environmentally sound waste management practices and methods in Latin America and the Caribbean, UNEP LAC Office and IETC agreed to continue supporting the LAC University Consortium on Sustainable Waste Management during 2019-2020, as a suitable platform to deliver certificate courses and related activities in the region<sup>2</sup>. This document provides an overview of the activities conducted during this period.

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<sup>1</sup> Module I: Integrated Waste Management and material flows (*Universidad de Ciencias Aplicadas y Ambientales UDCA, Colombia / Universidad ISALUD, Argentina*); Module II: Handling of waste (*Universidad Autonoma del Estado de Morelos UAEM, Mexico*); Module III: Solid waste treatment technologies, towards holistic approaches (*University Of Technology UTECH, Jamaica / Pontificia Universidad Católica de Valparaiso PUCV, Chile / Universidad Nacional Autonoma de Mexico UNAM, Mexico*); Module IV: Policy on solid waste management, Governance and Financing (*Universidad de Los Andes-ULA CIDIAT, Venezuela*).

<sup>2</sup> This is part of UNEP Subprogramme 5 on Chemicals, Waste and Air Quality, contributing to Project 521.1 “Promotion and Delivery of Environmentally Sound Waste Management Technologies and Methods and in-Country Technical and Advisory Support”, Output C: Promotion and dissemination environmentally sound practices and methods, Activity 7: Implement pilot certificate courses on environmentally sound waste management.

## II. Activities developed by the LAC University Consortium 2019-2020.

In order to promote sustainability to the objectives of the University Consortium, a range of specific activities were developed during 2019 and 2020, which are presented below.

### 2.1. Development of the LAC Consortium Workplan 2020

Support was provided to outline the **Work Plan 2020**, which was agreed by all members of the LAC University Consortium. The Workplan was developed and structured according to the four (4) objectives of the Consortium, namely:

- a) Promote the adoption of postgraduate educational programs in higher education institutions in LAC.
- b) Increase knowledge on integrated waste management and solutions tailored to the region, through joint research projects and publication of documents and scientific material.
- c) Promote the exchange of knowledge through the mobility of teachers and students in the region in the field of research and education on waste management, and through the organization of events.
- d) Increase the capacities of current and future waste management practitioners / professionals in LAC, through the development of training activities.

The Workplan includes a description of the specific activities, as well as the estimated timeframe and the universities responsible for its implementation.

### 2.2. Promote and monitor the adoption of academic programs by institutions in the region, according to the academic proposal designed by the University Consortium.

The monitoring of the adoption of the program by the Universities shows that the proposed curriculum has been internalized at least in academic institutions of Mexico, Argentina, Chile, and Colombia, as indicated below:

- ▶ Mexico. UNAM. (Diploma) Specialization on waste management, by the Faculty of Engineering. Versions 2018 and 2019.
- ▶ Argentina. ISALUD. Degree (Certificate) on waste management. Versions 2019 and 2020.
- ▶ Chile. PUCV. (1) Subject introduced within the Master Programme: "Urban-Regional Projects on Human Security and Adaptation to Climate Change in LAC". Version 2019. Establishment of a regular international training on waste management (2018, 2019, 2020).
- ▶ Colombia. UDCA. Master's degree on Integrated Waste management. 2019.

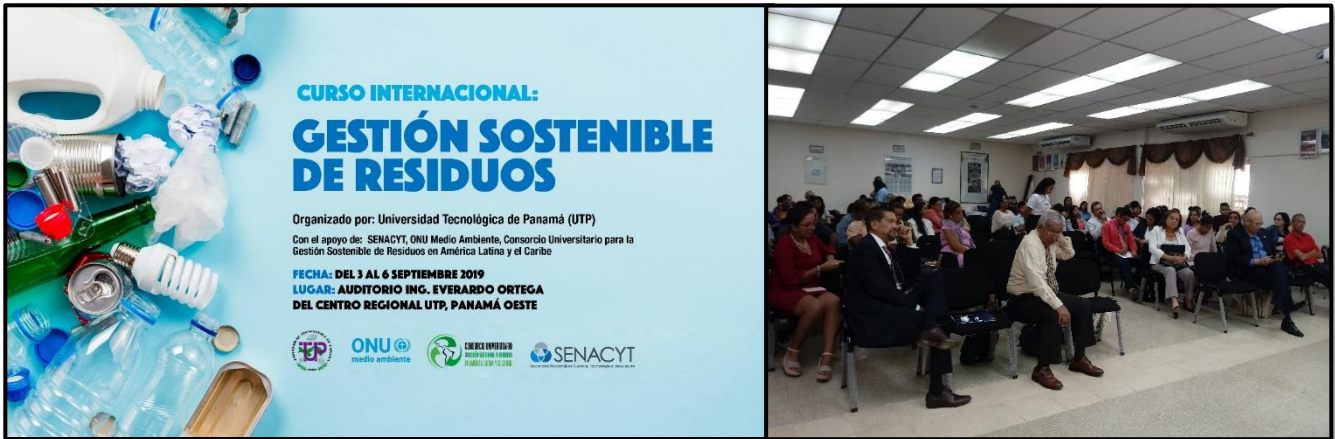
### 2.3. Development of academic programs as certified courses by Universities in LAC.

During this period, **four** (4) additional certified courses were organized by universities with the support of the the LAC Consortium, including in Chile, Panama, and Trinidad and Tobago:

#### ▶ **Course on Sustainable Solid Waste Management. Panama (September, 2019).**

The Course was delivered by the Technical University of Panama (UTP), with the support of SENACYT (National Secretariat of Science, Technology and Innovation), UNEP and the University Consortium. It was preceded by a public **Forum on Integrated Solid Waste Management**, which reached 80 participants from national and local governments, NGO's, and private sector. Regional and national trends on waste management in countries such as Mexico, Cuba and Panama were shared with participants.

Regarding to the course itself, **22 participants** (university students, researchers, private sector and NGO representatives, and recyclers) were trained during four (4) days based on a summary of the modules defined by the academic Consortium proposal. A session on potential modalities to continue the waste education in Panama was also organized.



► **II International Course on Sustainable Solid Waste Management in LAC. Valparaíso, Chile (November, 2019).**

The 2<sup>nd</sup> version of the International Course on Sustainable Waste Management was developed in Valparaíso, Chile, with the support of the Chilean Agency for International Development Cooperation (AGCID), the Pontificia Universidad Católica de Valparaíso (PUCV), through its Institute of Geography, and the UNEP Regional Office. During its development, a Seminar on waste management was also held, with intervention of the Members of the Consortium, as well as the Ministry of Environment of Chile and the Institute of Geography. The total participants on this course was equivalent to 40 students from 18 countries (Argentina, Belize, Bolivia, Brazil, Costa Rica, Colombia, Haiti, Mexico, Paraguay, Peru, Saint Vicent & Granadines and Chile).



► **Short Course on Sustainable Integrated Solid Waste Management in the Caribbean. Trinidad & Tobago (March, 2020).**

The Course was developed by the **Faculty of Engineering at the Saint Augustine Campus of the University of West Indies**, based on the general academic program of the Consortium. It was preceded by a half-day seminar on solid

waste management, with the specific objective of identifying the major problems in the local sector and the role of tertiary institutions, to conduct research and offer training for solving them.

On the fourth day, a fieldtrip hosted by Carib Glassworks limited was organized, a company actively involved in the retrieval of glass products for manufacturing glass containers.

**Thirty-five (35)** participants from 10 Caribbean countries attended the course (academic, public and private sector), which included a summary of the contents defined by the academic Consortium proposal<sup>3</sup>.



<sup>3</sup> Final Report available.

► **III International Course on Sustainable Solid Waste Management in LAC (virtual). Valparaíso, Chile (December, 2020 – January 2021).**

The third edition of the International Course on Sustainable Solid Waste Management is currently being developed for the Latin American and the Caribbean region. It corresponds to the first virtual version due to of the outbreak of the COVID-19 pandemic, which has enabled the participation of a larger number of students (60 participants), from 20 countries in the region.

This initiative is a joint effort between the Chilean Agency for International Development Cooperation (AGCID), the Pontificia Universidad Católica de Valparaíso (PUCV), through its Institute of Geography, and UNEP. As in previous editions, an open virtual Event on Waste management was held on 16<sup>th</sup> December 2020, with a total participation of 110 people connected<sup>4</sup>.



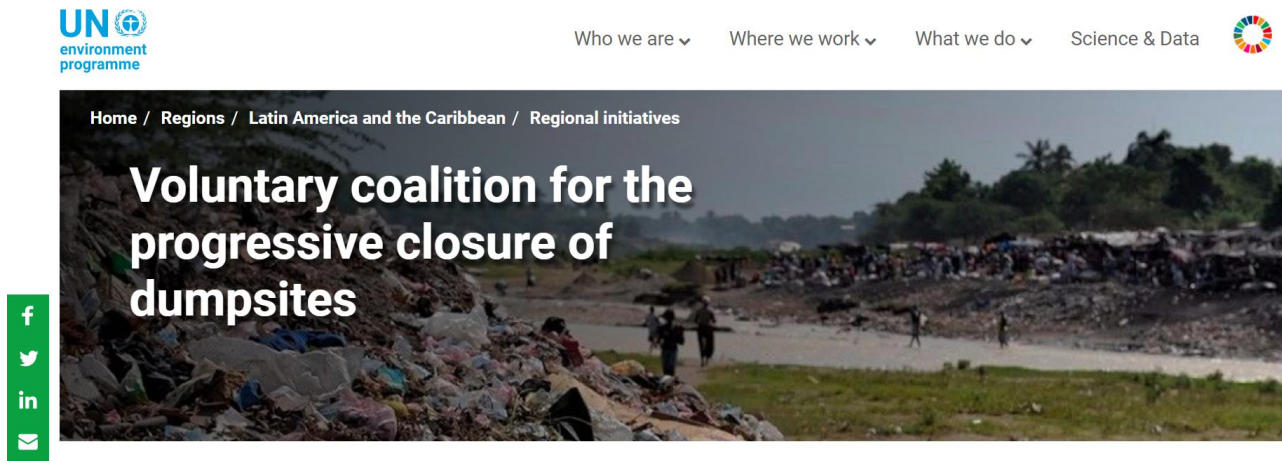
<sup>4</sup> Documentation available.

#### [2.4. Dissemination and outreach activities on priority matters on waste management in the LAC region.](#)

The LAC University Consortium has been actively engaged in numerous educational, dissemination, and awareness raising activities during this period. Some of them are summarized below.

##### ► [Participation in the Voluntary Coalition for the gradual closure of Dumpsites in LAC.](#)

Within the framework of the Voluntary Coalition of governments and relevant organizations for the gradual closure of Dumpsites in Latin America and the Caribbean, the Consortium representatives participated in the activities related to the Subcommittee N°3: “*Capacity building, information exchange and awareness raising*”. The main purpose of the Coalition is to develop a Roadmap for the progressive closure of dumpsites and the effective transition towards integrated waste management in the region, as well as to promote the development of technical guidelines, and facilitate the strengthening of capacities and exchange of information. This work also has included the elaboration of a Baseline, through which the Consortium has participated in virtual meetings, and collaborated with technical advice and review of preliminary documents.



##### ► [Participation in activities of the Environmental Training Network for LAC.](#)

Within the framework of the Environmental Training Network for LAC, which UNEP serves as Secretariat, the University Consortium has been engaged in the cooperation area N°3: “*Sustainable Waste Management and other relevant issues*”. Based on this work, the Consortium has designed an **online course on waste management for LAC**, to be implemented towards 2022, and the initial design of a research on greenhouse gas emissions from the waste sector for LAC<sup>5</sup>.

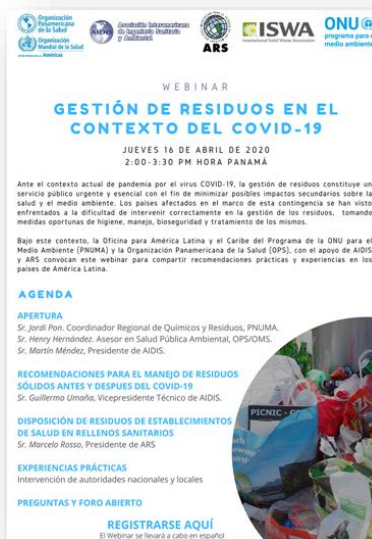
##### ► [Webinars and virtual meetings.](#)

During 2020, the Consortium has participated together with other entities in the organization and delivery of some webinars, virtual events and meetings, which has enabled, through its academic members, the exchange of ideas and knowledge dissemination, as well as the identification of potential solutions and strategies to address emergent challenges in the framework of the COVID-19 pandemic. Some of the events included the following:

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<sup>5</sup> Available documents: 1) Proposal for online Course on waste management, and 2) Workplan for research on GHG and waste.

- Webinar: “Waste management: Towards safe and environmentally appropriate disposal”, organized by CEGRU (Uruguay), ISWA and UNDP, where the work of the LAC Consortium was presented by ISALUD and UNEP.
- Webinar: “Waste management in the context of COVID-19”, focused on the global health situation due to the effects of COVID-19 and the proper waste management. Facilitated by UNEP, PAHO/WHO, AIDIS and ISWA/ARS. This event was joined by 768 participants.



## 2.5. Strengthening of the operation and networking activities of the Consortium

In 2020, a new collaboration agreement for the formalization of the University Consortium for Sustainable Waste Management in LAC was agreed, including a **“Constitutive and Operational Guidelines of the University Consortium”**, which considers the establishment of a permanent Steering Committee, a Secretariat initially supported by UNEP, as well as the procedure to include new universities, among other clauses. The Steering Committee is chaired by a Coordinator, hosted by the Universidad de Ciencias Aplicadas y Ambientales (UDCA), Colombia, and a Secretary, hosted by the Universidad Autónoma del Estado de Morelos (UAEM), Mexico<sup>6</sup>. Currently, the new agreement is in the process of being signed by Member Universities.

The vision is to consolidate the LAC University Consortium as a thematic network to integrating science, technology and experience of its members, projecting itself as a leading platform in the academic field of sustainable waste management in Latin America and the Caribbean, contributing to the achievement of the related Sustainable Development Goals (SDG) and the 2030 Agenda.

Support has also been provided to convene and facilitate the virtual meetings of the Consortium that took place during the period 2019-2020.

<sup>6</sup> Document available as: *“Collaboration agreement for the formalization of the University Consortium for Solid Waste Management in LAC”*. At this moment, the agreement is in the process of being signed by Member Universities. It includes in the annex the “Constitutive and operational guidelines”, and it has been elaborated in Spanish and English.



### **III. Planned Activities for 2021-2022.**

Some of the activities that have already been identified for the next biennium, or are already underway, include the following:

- ▶ An academic proposal has been designed to train 90 regional government officials in Chile during 2020, to be delivered at the first quarter of 2021.
- ▶ An academic proposal on Circular Economy is being designed to be presented at the Ministry of Environment in Chile.
- ▶ An academic proposal on technical elements for the closure of dumpsites and georeferencing has been discussed by the Consortium to be promoted during 2021.
- ▶ A regional webinar on the closure and rehabilitation of dumpsites to the LAC region is being discussed for the first quarter of 2021 with the University Consortium and other specialized entities.
- ▶ A proposal for the development of a Publication based on “The waste of the 21<sup>st</sup> Century” started during 2020 between the members of the Consortium, which will be developed during 2021.
- ▶ A report on the analysis of the greenhouse gas emissions in the waste sector for Latin American and Caribbean countries is expected to be released by the end of 2021.