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Innovation for Education and Research Management at Universidad de la Costa in the pandemic era

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Abstract. Universidad de la Costa (UNICOSTA) is an institution in the Colombian Caribbean whose main topic of institutional research is sustainable development. UNICOSTA has participated for just one year in the UI Green Metric World University Ranking. In the year 2020, UNICOSTA was ranked 44th at the country level. The aim of this paper is to present the most relevant activities carried out in Universidad de la Costa (UNICOSTA) in the pandemic era by COVID-19, specifically those related to the indicator of Innovation for Education and Research Management. This paper describes in a quantitative way all main research, courses, webinars, and collaboration networks that have been carried out at UNICOSTA from March 2020 to the present. The conclusions show that during the COVID-19 pandemic, the university has strengthened its national and international academic networks ties with several universities, showing as a result an increase in both collaboration and scientific production.

Keyword:

academic collaboration networks; COVID-19; indicators; sustainable development

1. Introduction

For Universidad de la Costa (UNICOSTA), being part of the group of universities that participate in the UI Green Metric World University Ranking has been a significant achievement. One of the main lines of research in UNICOSTA is Sustainable Development. Therefore, the university focuses its efforts on making various contributions that respond to this issue.

Currently, UNICOSTA has 20 undergraduate programs, more than 50 diploma courses, 30 specializations, 16 masters, and 6 doctorates. These programs have structures that are composed of three cycles: basic, professional, and deepening. Considering that one of the main lines of research, as well as academic training, focuses on sustainable development,

students have among their options for several subjects related to this topic.

At the undergraduate level, there is a diploma in Research Production for Sustainable Development. This course is a degree option for all students of UNICOSTA professional programs. At the postgraduate level, there is a master's and a doctorate in Sustainable Development. Both programs collaborate with five departments of the UNICOSTA and respond to the institutional research line. They are inter, multi, and transdisciplinary academic programs. Therefore, any professional who is interested in the graduate profile may enroll. Despite the 122 programs that the university offers today at different levels of education, there are 24 that are particularly relevant due to their emphasis on the component of sustainability. Currently, UNICOSTA has 20 undergraduate programs, more than 50 diploma courses, 30 specializations, 16 masters, and 6 doctorates. These programs have structures that are composed of three cycles: basic, professional, and deepening. Sustainable development is one of the main lines of research, as well as the central element in the educational approach of the university, consequently, the students have at their disposal several subjects related to this relevant topic. Table 1 shows the relationship between the programs that constitute this select set.

Table 1. Master's and doctorates of the university that stands out for their sustainability component.

Doctorate	Master	Specialization	Diploma
1. Sustainable development https://www.UNICOSTA.edu.co/inicio-doctorado-desarrollo-sostenible	2. Sustainable development https://www.UNICOSTA.edu.co/maestria-en-desarrollo-sostenible	3. Sustainable Territorial Management https://www.UNICOSTA.edu.co/especializacion-en-gestion-territorial-sostenible	4. Research Production in Sustainable Development https://www.UNICOSTA.edu.co/component/jem/event/609
5. Innovation	6. Sustainable constructions	7. Environmental management	8. Sustainable Territorial Management
9. Energy	10. Energy Efficiency and Renewable Energy	11. Renewable Energy	12. Renewable Energy
13. Information and communication technology	14. Information and communication Technologies Management.	15. Pollution Control	16. Pollution Control
17. Neurosciences	18. Psychology	19. Sustainable Agribusiness	20. Management and evaluation of natural resources
21. Energy	22. Energy Efficiency and	23. Renewable Energy	24. Management of public

This year 2021 UNICOSTA was positioned in the Times Higher Education Ranking as one of the best Higher Education Institutions in Colombia, highlighting its work on alliances to achieve the objectives [1]. According to the results, UNICOSTA is ranked in the top 10 in Colombia and the top 100 in Latin America [2]. UNICOSTA was also the ninth-best company to work for in Colombia, according to Great Place to Work [3]. Through integration, firmness of purpose, and discipline, the UNICOSTA improves year after year its results in reputation and visibility, this is the result of exceptional efforts performed by the university team and collaboration with national and international peers. Despite the results achieved, the university also has numerous challenges, 1 of them refers to the need to establish a team that assumes the functions of centralizing and managing rankings in an integrated way. Great.

2. Methodological framework

With the overall purpose of identifying how the university's cooperation has been in the pandemic era, it was necessary to carry out a rigorous integration process between the different departments, administrative and academic divisions of the university. The outcomes of the methodological process will be shown below.

2.1. Information gathering

The indicator analyzed in this article is Innovation for Education and Research. For its analysis, the information was collected using an instrument that was sent to the different departments of the university from January to May 2021. In the meantime, virtual meetings were held with the directors of the units using the Microsoft Teams platform. On the other hand, the publication managers and deans were interviewed to collect the contributions of scientific production.

2.2. Study area

Universidad de la Costa was created on November 16th, 1970, is located in the Caribbean region of the Republic of Colombia. Its main campus is specifically located in the city of Barranquilla, capital of the department of Atlántico, (See Figure 1).



Figure 1. Location of Universidad de la Costa. (Source: Designed by authors considering Google Earth)

3. Results and discussion

3.1. Education and training at Universidad de la Costa in the Time of Pandemic

In the first semester of 2020, the COVID-19 pandemic began. However, the university consolidated at the regional level as it was the first institution in the Colombian Caribbean to move from classroom classes to synchronized remote. At that crucial moment, UNICOSTA implemented the Teams platform as a unified communication and collaboration tool, allowing to alternate face-to-face classes with remote access.

In addition, a widely used strategy is based on activating the recording function available in Teams, so that there can be an archive of meetings and classes conducted online. This strategy allows students or professors to observe the meetings asynchronously considering that sometimes they are not available for economic reasons or connectivity limitations.

Moreover, UNICOSTA increased the storage capacity on the platforms used by students and professors. At the same time, the institution has promoted the integration and usage of technological applications such as Zoom, Google Meet, and Moodle.

A department that has stood out in the development of professional and clinical practices under the modality of virtual care for patients using technological platforms and teleworking was the Department of Social Sciences and its Psychology program. Those who also stand out for generating virtual content and for conducting live programs on social media, aimed at the student community, these programs have themes related to the management of emotions and stressful situations during quarantine.

Besides, to guarantee other training modalities, UNICOSTA established an agreement with Coursera, thus not only students but also professors could complete different courses obtaining a free certificate.

Students who took these courses and obtained the certificate had the possibility of homologating credits for optative subjects. In consequence, the Civil and Environmental Department strengthened its national and international collaboration networks by promoting multiple courses, equally important obtaining high incoming and outgoing mobility with an emphasis on postgraduate studies. Hence the department of energy and mechanics stood out for completing courses on the mentioned platform.

Finally, another of the activities related to sustainability that stands out is the Unicosta health and nursing coordination talk "First aid and COVID". It consists of a series of virtual talks about the final disposal of biological waste, and generalities of the covid, this is guided by the Environmental Engineering and Administration program. One of the audiences most reached to the talks were students from schools in the region.

3.2. Scientific production, events, and research management

Since the era of the COVID-19 pandemic began, participation in webinars and virtual or remote events in the UNICOSTA has increased rapidly. For example, graduate programs in sustainable development have had 102 percent over compliance, specifically student and faculty mobility.

Regarding research activities or projects that require data collection in person, it was decided to switch to data collection methods through systematic review or literature review. Consequently, this has promoted the writing of scientific articles in recognized peer-reviewed journals. [4,5,6,7].

Currently, there is a considerable increase in the development of virtual laboratories for the application of the APA standard, as well as the review of psychological test manuals online with agreements established with Modern Manual, PSEA-SAS, TEA y APSICOE. According to reports from the Department of Social Sciences of UNICOSTA, the repository of the library generated a documentary and procedural framework to guarantee the continuity of services and preserve the health of collaborators and users. In this sense, the virtual platform of the library proved to be a decisive element in the access to electronic resources.

Subsequently, it is worth highlighting the increase in scientific production that the university had, both writing books and scientific articles managed by the participation of professors in academic and research collaboration networks. Among the results, the writing of a book in the languages Spanish [8, 9] and Portuguese [10]. The book compiles the criteria of the experts subscribed to the Ibero-American Beach Management and Certification Network (Proplayas bi) in the context of the crisis caused by COVID-19. It involves the analysis of the impact of the pandemic on sun and beach tourism in Latin America. More than 300 members of the network were convened for this project. Proplayas is the largest platform and community for collaborative exchange on beach management and certification issues in Latin America. Its current range involves 15 countries in Latin America and the Iberian Peninsula. It is composed of more than 67 nodes of scientists, clusters, activists, and civil society.

On the other hand, an investigation has as the main objective to analyze how the beach ecosystem changes without tourists during the emergency closure due to COVID-19 [11]. Their results stand out for measuring the effects of human absence on urban beach ecosystems. The research analyzes bioindicators and stressors in 29 urban tourist beaches in 7 Latin American countries (Chile, Ecuador, Puerto Rico, Brazil, Colombia, Cuba, and Panama). The response to the blocking of relevant anthropogenic stressors, such as pollution, noise, human activities, and user density is analyzed. The research used a standardized protocol during confinement conditions. The environmental conditions of each beach were examined before and during the confinement qualitatively and comparatively, using multivariate methods and non-parametric statistics.

In times of pandemic, the university has also excelled in editorial functions of high-impact journals [12]. For the first time, Universidad de la Costa was participating in a special issue convoked by the Ocean & Coastal Management magazine. With the growing need and emergence of research on oceanic and coastal issues in the context of the COVID-19 pandemic, the Special Issue received 43 provisional summaries. 29 manuscripts complete works, 12 of them were accepted.

Alternatively, two investigations were focused on identifying how coastal planning and beach management is carried out in Caribbean Island states during and after the COVID-19 pandemic. The research makes use of the content analysis technique on worldwide representative publications to obtain information on the best management practices. Research works resulting from an international collaboration between research professors from Latin American and American universities [13]. COVID 19 has undoubtedly been the propitious scenario for collaboration and has opened the doors for our university to continue generating quality research. Such as the case of the recent production, where 350 authors from different countries analyze the immediate impacts of changes in human activities on

wildlife and environmental threats during the first months of the confinement in 2020. The result is based on 877 qualitative reports and 332 quantitative evaluations from 89 studies around the world [14].

3.3. Networking

Universidad de la Costa in the time of COVID 19 has made progress in strengthening its networks, positioning itself as a benchmark and leader within the 10 Ibero-American networks with the highest international prestige. For instance, the following stand out: The Ibero-American beach management and certification network (PROPLAYAS) [15], Stephen Olsen Chair [16], the network of young researchers (LASIRC) [17], the Ibero-American network of integrated coastal management (IBERMAR) [18], the Network of Disasters Associated with Hydrometeorological and Climatic Phenomena (REDESCLIM) [19], the international Network of SDG Promoters and the national network of SDG promoters. Within the Colombian education system, it is part of the Network of Colombian universities for sustainable development led by ASCUN [20], coordinating SDG number 14 on underwater life [21]. Figure 2 shows the university collaboration map in the pandemic era.



Figure 2. Map of international collaboration of UNICOSTA in times of COVID-19.

4. Concluding Remarks

Universidad de la Costa has exponentially increased international collaboration in the pandemic era through webinars, events, published research articles, academic and scientific collaboration networks. The Green Metric Universities ranking implies a significant opportunity for UNICOSTA to make its research results visible. On the other hand, even though international collaboration increased extraordinarily, national cooperation should develop as well.

In addition, participation in UI GreenMetric provides an opportunity to share with other international universities with more experience and better position.

Finally, the university must strengthen its organizational chart, to join forces and get better interdepartmental cooperation. Consequently, it will facilitate the presentation of results and the dissemination of knowledge related to the SDGs. In addition, facilitate the data collection to ensure outstanding results in the rankings related to sustainable development.

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