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Moving towards Sustainability: Environmental Management Strategies and Sustainable Infrastructures Development at Universidad Catolica de Córdoba (UCC)

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Abstract. This study focuses on the "Setting and Infrastructure" indicator of the UI GreenMetric World University Rankings, exploring the case of the Universidad Católica de Córdoba (UCC). In an environment where sustainability becomes a transversal axis for university management, the UCC has implemented an environmental conservation strategy of natural resources and management of sustainable infrastructure, demonstrating a firm commitment to caring for the world we live in. Combining the estimation of the institutional carbon footprint, the conservation of the native forest, the promotion of safe, sustainable and accessible infrastructures, and the care of human health, the UCC moves towards sustainability from a comprehensive approach. Its projects linked to environmental care seek a triple impact: 1) Environmental, through the displacement of carbon dioxide (CO2). 2) Academic, instances of training, awareness and research. 3) Social, activities, projects or programs linked to University Social Responsibility. This approach aligns with the spirit of the Encyclical Letter Laudato Si', emphasizing the interconnection between human and social dimensions and environmental conservation. This model involves combining the significant capture of CO2 from our native forest, the execution of the clean energy infrastructure project with low CO2 emissions to mitigate up to 70% of the environmental impact of our carbon footprint. This study contributes to the global dialogue on sustainable practices in the university environment, proposing a replicable framework for other institutions committed to sustainability.

Keywords

sustainability, university, comprehensive model, environmental management, IU GreenMetric, mitigation, adaptation, infrastructure, environment, carbon footprint, well-being, health.

1. Introduction

The recognition of climate change impacts in the alterations of rainfall patterns, increasing higher temperatures, water scarcity, soil degradation, the consequent change

in natural ecosystems and the proliferation of pests and diseases, just to mention some, bring about the urgency of addressing these issues. Previous studies have noted the importance of universities as agents of change in promoting sustainable practices, highlighting the role of internal environmental management, education, research and development, as well as community outreach and collaboration; and the defense of environmental policies.

By integrating environmental care into all their functions and activities, educational institutions contribute significantly to the protection and preservation of the planet through:

a) **Internal Environmental Management:** they have the responsibility to responsibly manage their own operations and activities to minimize environmental impact; such as, waste management, energy and water conservation, sustainable transportation, responsible purchasing, among others.
b) **Education and Awareness:** academic centers integrate sustainability into their curricula to prepare the next generation of leaders with a deep understanding of environmental problems and the development of skills to address them (Aznar Minguet et al., 2013).
c) **Research and Development:** the academic ecosystem generates fundamental knowledge to understand environmental processes, their implications, human impact on the environment and possible solutions. In this way, it promotes the development of innovations and the transfer of technologies to the socio-productive sector.
d) **Community Extension and Collaboration:** Universities collaborate with local communities, governments, businesses, and nonprofit organizations on projects and programs aimed at addressing environmental challenges at local and regional levels. This may include volunteer actions, participation on environmental conservation and restoration initiatives, among others.
e) **Defense of Environmental Policies:** academic institutions act as centers for resource management, facilitating dialogue and coordination of actions among stakeholders for the promotion of local and regional environmental policies.

The Catholic University of Córdoba, faithful to its vision and mission, integrates environmental management strategies and the promotion of sustainable infrastructure in its 2021-2026 Institutional Development Plan. Considering the spirit of the Encyclical Letter Laudato Sí on “Care of the Common House”, the international commitments of the 2030 Agenda, SDG, and other agreements around the United Nations Framework Convention on Climate Change, UNFCCC. The university seeks to become a leading institution of good environmental practices. In this way, it moves towards the construction of its own triple impact sustainability model, with focus on: 1) the **environment**, to align the institution's practices with a vision of respect and responsibility towards the present and future environment, 2) the **academy**, to promote the creation of an ecosystem of local knowledge permeable to environmental education, research and innovation and 3)the **community**, to generate projects and activities of shared value with the environment aimed at transforming the development matrix into a sustainable one.

Aware of the social role, the university becomes a high-level training center for production and life. Research, teaching and university extension must be framed by the desire to contribute significantly to sustainable social development, that is, towards the construction of an environmentally, socially and economically viable society (Luis Arriaga Valenzuela et al., n.d.).

This paradigm is based on the principles of integral ecology promoted by the Encyclical Laudato Si': a) Interconnection among all forms of life and natural systems. b)

Social justice to promote equity and inclusion in the protection of the environment and the fair distribution of resources. c) Care of creation, respect and responsibility towards the Earth and future generations. d) Dialogue and collaboration between different sectors of society to find solutions to socio-environmental challenges. e) Promotion of the common good, recognizing the value of caring for the environment as a basis for the health and well-being of all humanity (Usanos, 2019).

Guided by the UI GreenMetric World University Rankings evaluation framework, UCC achieves significant steps in internal environmental management by assembling the sustainability of infrastructure and addressing the environment. The study of the campus carbon footprint and participation in the "Newman Framework for Evaluation of University Social Responsibility" promoted by the International Federation of Catholic Universities, FIUC, has made possible to identify key areas of intervention for the design of strategic action plans based on:

a) **The design and planning of the campus** to add sustainable urban design principles to the planning and development of the university campus, including the use of native vegetation, the conservation of green spaces, stormwater management and the creation of pedestrian areas and accessible public spaces. Added to this is the concept of "accessibility" of spaces (Blanco et al., n.d.).
b) **Solid waste management**, including separation at source, recycling and reusing of materials such as paper, plastic, wood, glass, among others, as well as awareness campaigns to promote responsible consumption practices.

This study contributes to the development of existing literature by providing a deep understanding of the intersection between university infrastructure, environmental management, and commitment to sustainability from a comprehensive approach that incorporates social and human dimensions, in line with the care of the "Common House", offering a replicable model for other educational institutions committed to the well-being of present and future generations.

In the following sections, this article will delve deeper into the specific strategies and initiatives undertaken by Universidad Católica de Córdoba (UCC) to promote sustainability through comprehensive environmental management and infrastructure development. By examining UCC's implementation of these measures, this study aims to provide a detailed analysis of their effectiveness and replicability. The purpose of this article is to highlight the university's innovative approaches and their multifaceted impacts, offering valuable insights and a potential framework for other institutions committed to sustainability. Through this exploration, we aim to contribute to the broader dialogue on sustainable practices in higher education and their vital role in fostering a more sustainable future.

2. Theoretical and Methodological Approach

Educational institutions play a crucial role in society as trainers of future professionals and leaders, being significant social actors and references, impacting economic, social and political development, underlining the importance of integrating environmental sustainability into their ethos and practices. In this sense, analyzing the characteristics of universities involves contextualizing them in time and space, contributing to their development, and integrating them with the society that they compose and are a part of. By doing so, universities can better align their goals with societal needs and expectations. University management policies that are built in response to the needs of the context in which they operate, redefine links and commitments in society, in order to respond with quality and relevance to the demands imposed by the advancement of knowledge and

environmental needs (Perfumo, 2022).

This study focuses on a case analysis based on the Catholic University of Córdoba, an institution founded in 1956, the first privately managed university in Argentina, and also the only one entrusted to the Society of Jesus in the country. Currently, UCC has an academic community of 10,000 students and more than 2,000 teachers and collaborators. At the same time, it is part of the Association of Universities entrusted to the Society of Jesus in Latin America, AUSJAL, which brings together 30 higher education institutions and they host over 250,000 students. Globally, there are 193 Jesuit universities with more than one million students. All of these educational institutions share an ideal inspired by the principle of Ignatian Magis, dedicating themselves specially to offering quality education from a comprehensive person-centered perspective (Compilation & Gargantini, 2022).

UCC establishes five-year institutional development plans. The current one, which covers the period 2021-2026 considers environmental impact as strategic. The main objective of this line is: "To deepen the knowledge of the academic community on the most relevant socio-environmental problems of the region in order to develop strategies for action, commitment and advocacy for the care of the Common Home" (UCC,2021).

Two priority lines of actions were defined around this objective. The first one, is the formulation of the UCC's environmental policy and establishment of mechanisms for its implementation and monitoring. The second, is to continue with the design of an indicative plan to improve the institutional infrastructure from an ecologically responsible perspective with emphasis on the optimisation of energy, water, forestry and agricultural resources, and the reduction of pollutants.

Implementing an action within an environmental program at a university has the potential to generate significant impacts across various domains. Academically, it fosters a culture of sustainability within the institution, enriching the curriculum and research opportunities, and preparing students to become environmentally conscious leaders. Environmental impacts are evident through the reduction of the university's carbon footprint, conservation of natural resources, and promotion of biodiversity. Socially, such programs enhance community engagement and awareness, encouraging collaborations with local organizations and fostering a sense of responsibility towards the environment. Additionally, these initiatives can promote green employment opportunities, supporting the development of jobs that contribute to preserving or restoring environmental quality. This holistic approach ensures that the university not only advances in its sustainability goals but also contributes positively to the broader societal and environmental context.

The first line of action mentioned before deals with the importance of establishing monitoring mechanisms. Measuring instruments to monitor environmental impact are tools that support this purpose. For that reason, the university estimates its carbon footprint and participates in the UI Green Metric Ranking to strengthen and monitor its environmental framework. These monitoring efforts enable the institution to identify key areas for improvement and implement targeted strategies for reducing its environmental impact. Additionally, regular assessments and rankings provide valuable feedback that helps guide the university’s ongoing sustainability initiatives and ensures continuous progress toward its environmental goals.

This work contributes both theoretically and methodologically to the field of study, by highlighting the importance of the analysis of the results of the IU GreenMetric and the Campus Carbon Footprint Study for the formulation and execution of environmental policies along with their respective action plans. The methodology used is characterized by

being a qualitative action research with a practical design approach, which includes an exhaustive diagnosis of the problem and an intervention project accompanied by a guide for decision-making. This approach combines a comprehensive technical-scientific perspective (Hernández Sampieri & Mendoza Torres, 2018).

These resources offer detailed analysis that facilitates the prioritization of interventions, the establishment of realistic and measurable goals, as well as the formulation of effective strategies to mitigate environmental impact. These tools not only help identify critical areas for sustainable improvements, but also facilitate the alignment of institutional objectives with global sustainability challenges, ensuring a meaningful long-term commitment to environmental care. In this way, the establishment of policies for sustainability becomes crucial for the organization, since it demonstrates and formalizes a commitment to the issue, offering greater clarity and transparency on how environmental risks are addressed (COSO, 2023).

One of the main diagnostic tools, the calculation of the carbon footprint, identifies the amount of Greenhouse Gas, GHG, that is released into the atmosphere as a consequence of the development of any activity and allows recognizing all sources of GHG emissions to define from it, effective reduction measures (Ministry of Ecological Transition and Demographic Challenge, 2024). This is the first step towards decarbonization and is key information for the design of the emissions reduction strategy in order to combat climate change, since it allows, among other things, to identify all sources of GHG carbon emissions (Argentine Network of the United Nations Global Compact, 2022). Deepening awareness of environmental problems will allow the development of an institutional policy on environmental matters that, in line with the principles of integral ecology, promotes and facilitates the ecological conversion of the university community, and influences awareness of the local environment (Imhof, et al., 2023).

The standards and protocols on which the carbon footprint is calculated at the UCC Campus are: 1) Greenhouse Gas Protocol Corporate Standard, GHG Protocol: developed by World Resources Institute and World Business Council for Sustainable Development. Section 14064-1 of the ISO standard was applied to calculate the organizational carbon footprint (UNE-EN ISO 14064-1), 2) UNE-ISO/TR 14069: 2015: GHG quantification and reporting for organizations. It constitutes the guide for the application of ISO 14064-1, 3)the 2006 IPCC Guide, Intergovernmental Panel on Climate Change. Guidelines for National Greenhouse Gas Inventories.

The delimitation of operational boundaries, also known as scope, is determined based on the control limits of the organization's facilities. This involves identifying the emissions associated with operations and classifying them as direct or indirect, selecting those that will be analyzed. The calculation of the carbon footprint organizes the emission sources into different scopes, which are defined according to the degree of control that the entity has over them: a) scope 1: Includes direct greenhouse gas, GHG, emissions from sources owned or controlled by the organization, b) scope 2: Includes indirect GHG emissions associated with the generation of electricity acquired and consumed by the organization ant 3) scope 3: Considers other indirect GHG emissions, as consequence of the organization's activities, but that occur in sources that are owned or controlled by another organization.

The estimation of the carbon footprint was carried out at Catholic University of Córdoba Campus, an 80-hectare establishment located at 3555 Armada Argentina Avenue, in Córdoba city, Argentina. The measurement covered the period from January 1st to December 31st, 2022. The factors, scope and types of emissions that were measured for

the calculation of the case under study are detailed on the table below:

Table 1: Variables evaluated for each of the scopes and emissions for the calculation of the estimated CO2 emissions of UCC campus. Source: Carbon Footprint Report by UCC Campus (Imho, 2023).

Emission	Scope	Factors
Direct	1	Movement of own vehicles.
		Fossil fuel consumption (gas).
		Leaks from air conditioning and/or refrigeration equipment.
		Existing livestock on the experimental field.
Indirect	2	Electrical consumption.
	3	Movement of students, teachers and collaborators.
		Permanence at work and delivering of teaching lessons.
		Sewage water.
		Solid waste and recycled material.

GHG emissions are typically expressed in units of carbon dioxide equivalent, CO_2e, which is a standard measure that allows emissions of different greenhouse gases to be compared in terms of their global warming potential. Regarding carbon fixation, that is, the carbon annually captured, we know that the existing trees at the University Campus reduce the amount of CO_2 in the atmosphere by absorbing carbon during their annual growth. The amount of carbon captured annually increases with the size and health of trees. To estimate the fixation of carbon by the Campus vegetation, two calculation tools were used, one verifies the other: the iTree Canopy 2019 program, and Equations proposed by De Villers. Et al. (2014). To reduce the carbon footprint, institutional actions can be implemented both for mitigation, such as the one mentioned above regarding the existence of trees, and for adaptation, which will be described in the results section for each of the scopes.

Related to quality management at universities is the UI GreenMetric World University Rankings, which aims to measure the sustainability efforts of university campuses worldwide. This ranking adopts a comprehensive approach based on the conceptual framework of Environment, Economy and Equity, with the intention of reflecting the sustainability policies and programs implemented by universities around the world. In this way, it seeks to promote social change led by higher education institutions towards sustainability objectives. In the 2023 edition, 1,183 universities participated in its evaluation (UI GreenMetric, 2023).

The objectives of the UI GreenMetric ranking cover several key aspects: to contribute to the academic discourse on sustainability in education and campus assessment, drive university-led social change towards sustainability goals, serve as a self-assessment tool to higher educational institutions and provide information to governments, environmental agencies and society about sustainability programs on university campuses.

Universities participating can anticipate a number of benefits, including internationalization and recognition of their sustainability efforts, increased awareness of sustainability issues, promotion of social change and action, as well as opportunities to network through of membership in the UI GreenMetric World University Rankings Network, UIGWURN. This network encourages the exchange of best practices in sustainability programs (UI GreenMetric, 2023). By collaborating with other institutions,

universities can learn from each other's experiences and implement more effective sustainability strategies. Furthermore, participation in such rankings and networks can enhance the institution's reputation and attract environmentally conscious students, faculty, and partners.

The UI GreenMetric ranking evaluates the policies and performances of universities in terms of sustainability based on six main categories, which reflect different dimensions of environmental management and infrastructure on university campuses: 1- Setting and Infrastructure, SI (15%); 2-Energy and Climate Change, EC (21%); 3- Waste, WS (18%); 4- Water, WR (10%); 5- Transportation (TR) (18%); Research and Education, R&E. Each category has an assigned percentage that contributes to the total ranking score, reflecting the relative importance of each area in the evaluation of university sustainability according to the UI GreenMetric.

This study focuses on the analysis of the "Environment & Infrastructure" category, which focuses on the physical environment of the campus and its infrastructure, with the objective of promoting green spaces and environmental conservation. This assessment considers the proportion of open area in relation to total area, vegetation cover, water absorption capacity, and the university's investment in sustainability efforts. Through the estimation of the carbon footprint, the aim is to identify guidelines that contribute to the development of an institutional environmental policy. To understand the interrelation and synergy of all the dimensions that make up the ranking, an analytical approach is used based on analysis in Cartesian terms (separate to understand, thing by thing). This perspective allows us to approach the analysis of the identified object of study (Massé, 2027).

The article offers a case study focused on the UCC, using a methodology that can be beneficial for other entities with similar characteristics or adapted as required, it will allow educational institutions to identify fundamental aspects for the strategic design of their environmental policy, as well as for further development, implementation and evaluation. By closely examining the UCC's approach, other universities can gain insights into effective practices and potential challenges in their sustainability journeys. This comparative analysis not only fosters a deeper understanding of environmental management but also promotes the dissemination of innovative solutions and strategies across the academic community.

3. Results, Debates and Application

In the UCC five-year plan 2021-2026, the institutional strategic lines include the formulation of the UCC environmental policy, establishing the mechanisms for its monitoring and implementation. In addition, environmental initiatives were strengthened in the areas of teaching, research and social projection. At the same time, progress was made in the implementation of a new perspective of sustainable infrastructure based on eco-efficiency, designing an ecologically responsible improvement plan, with emphasis on the optimization of energy, water, forestry and agricultural resources, as well as the reduction of contaminants (UCC, 2021). Within this framework, during the year 2023, the UCC calculated its carbon footprint at the University Campus. The summary of total emissions during the analysis period is presented in the following table:

Additionally, the estimate per year CO2 absorption by the trees of the native forest belonging to the Gaspar Xuárez, S.J Botanical Garden (a transition from the Espinal and Chaqueño forest) and the vegetation implanted on the campus, amounts to 218.86 TnCO2.

Table 2: Total annual emissions in Tn CO2 (2022) by source, scope and percentage from the total of each source (Imhof, 2023)

Scope	Emission source	Emission TnCO2 per year, source and scope	% of emissions from the total
1	Fixed combustion (heating)	72.2	5.20%
	Mobile combustion (own vehicles)	12.67	0.91%
	Related to processes (livestock)	26.34	1.90%
	Fugitives (air conditioning equipment leaks)	44.13	3.18%
	TOTAL, SCOPE 1	**155.34**	**11.19%**
2	Electrical consumption	685.06	49.36%
	TOTAL, SCOPE 2	**658.06**	**49.36%**
3	Mobile combustion (third party vehicles)	475.63	34.27%
	Sewage wáter	20.32	1.46%
	Waste	51.51	3.71%
	TOTAL, SCOPE 3	**547.47**	**39.45%**
	TOTAL, SCOPES 1+2+3	**1387.87**	**100%**

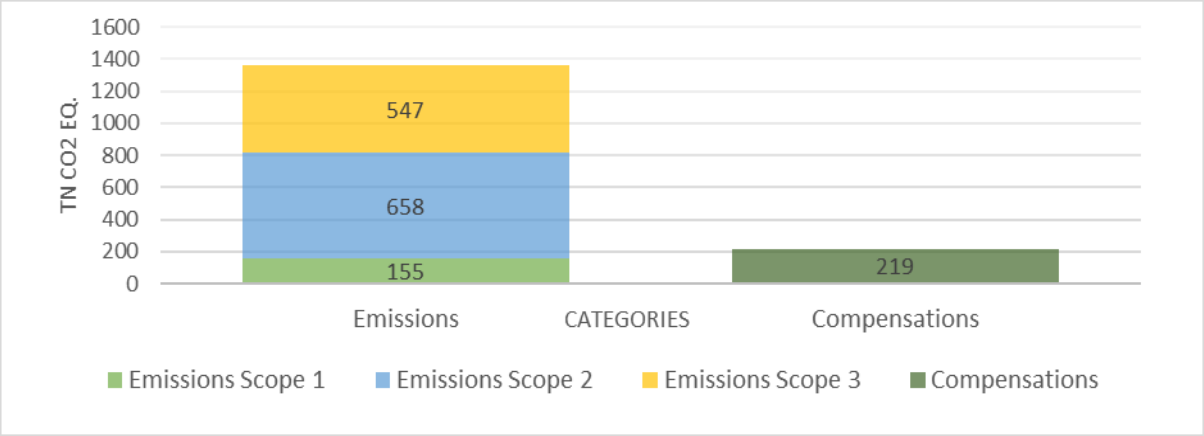

Figure 1: Total emissions in Tn. CO2 eq. annual (2022) by scope and its comparison with compensation. Source: own elaboration based on the carbon footprint report of the UCC Campus (Imhof, et al., 2023)

The graph above shows that the 155.34 tons of CO2eq. emitted in scope 1 are completely offset by the tree vegetation on the campus, which absorbs around 218.86 tons of CO2eq annually. However, the 685.06 tons of CO2 emitted by electricity consumption on campus and indirect scope 3 emissions, which total 547.47 tons of CO2eq., are not offset by the trees planted on campus. Therefore, it is possible to establish actions in environmental policies to reduce these emissions or implement mitigation measures, such as the materialization of an institutional project to install a Photovoltaic Experimental Park.

It is important to highlight that, in the calculation of carbon capture by vegetation, the carbon absorbed and stored annually by the soil was not considered. Although this value is considerable (approximately 50% of that captured by the aerial part), it is intended to precisely measure this value to obtain an exact figure. It is understood that currently this value covers the replacement of individuals that die naturally, until they are

replaced and reach a considerable size to begin to contribute significantly to carbon sequestration.

Furthermore, regarding the University's environmental impact measurement and evaluation instruments, in 2022 and 2023 it participated in the UI GreenMetric Ranking. The scores obtained in each category during those years were the following:

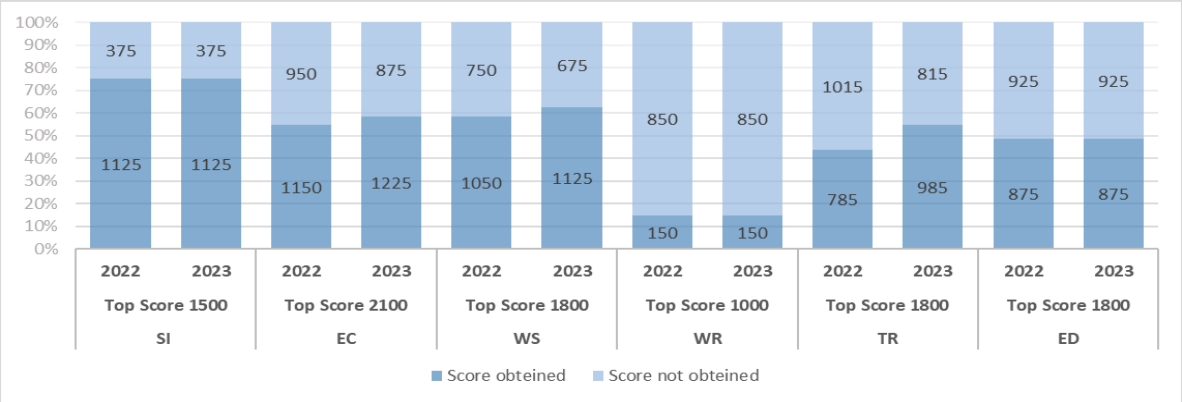

Figure 2: Comparison by category of the UI GreenMetric ranking of scores obtained by UCC in the years 2022 and 2023. Source: Own elaboration based on results of the ranking measurement (UI GreenMetric, 2022 and 2023)

References: SI: Setting and Infrastructure, EC: Energy and Climate Change, WS: Waste, WR: Water, TR: Transportation, ED: Education and Research.

As seen in the results obtained, the highest score corresponds to the Setting and Infrastructure (SI) category. This category includes: a) the proportion of surface area of open spaces with respect to the total, b) surface area of the campus covered with forests, c) surface area of the campus covered with planted vegetation, d) surface area of the campus water absorbance, e) relationship between the surface of open space divided by the campus population, f) university budget for sustainability efforts, g) percentage of building maintenance activities in a period of one year h) campus facilities for disabled special needs and/or maternity, h) security and protection facilities, i) health infrastructure for academics, students, and administrative staff, j) conservation: plants, animals and fauna and flora, genetic resources for food and agriculture in the medium or long term conservation facilities (UI GreenMetric, 2023).

Linking this result with those obtained in the carbon footprint estimate, it corresponds to scope 1, emissions generated directly by the organization, are compensated in their entirety through the native vegetation (native forest of the Gaspar Xuárez S.J Botanical Garden and the implanted vegetation). This means that the results of the ranking in the analyzed category correspond to the contribution of the mitigation derived from the existence of the natural spaces, the Gaspar Xuárez SJ Native Forest, the carob trees and the Botanical Garden.

Based on the recommendations provided in the UCC carbon footprint report, as well as on the indicators of the UI GreenMetric ranking, environmental action strategies were developed to follow, which will form the guidelines of the environmental policy in development. Among these action strategies we can mention: Regarding scope 1, the following are linked to direct emissions:

- Maintain, conserve and care for existing trees. If a specimen dies, replace it.

- Strengthen and support decisions where any change in land use is to improve the contribution of the expected ecosystem services.
- Revegetate with tree, shrub, grass and herbaceous species, not only to improve carbon capture or absorption, but also to increase the provision of ecosystem services.

Figure 3: Example of a revegetation intervention in the UCC, change in land use, from grass to multi-stratum with herbaceous, shrubby and grass species. Own source: UCC press

Figure 4: Native forest Campus UCC (the university campus has almost 80 hectares and is located in the southern area of the City of Córdoba, Argentina). Own source: UCC press archive.

These actions related to the scoop 1 of the in the UCC carbon footprint report promote maintenance and complement the good result of the UI GreenMetric Ranking category linked to Environment and Infrastructure (SI). By ensuring the preservation and enhancement of green spaces, the university not only improves its carbon sequestration capabilities but also creates a healthier and more sustainable campus environment. Moreover, these efforts demonstrate the institution's commitment to long-term ecological stewardship and serve as a model for other universities aiming to enhance their sustainability practices.

Regarding scope 2 linked to indirect emissions due to energy consumption:

- Start-up of the Photovoltaic Experimental Park Project. This project seeks to generate a triple impact associated with the generation of clean energy, transforming the energy matrix of the campus, the generation of training, awareness and research instances and university social responsibility action programs.
- Reduce emissions through responsible community awareness about the carbon footprint generated and the University's efforts to reduce it.
- Reduction of consumption through efficient use of lighting and electrical equipment. This reduction will correspond to less use (consequence of environmental education), definition of equipment shutdown times (operationalize times) and through monitoring systems.

- Envelope improvements: replacement of frames and glass; reduction of leaks through doors and windows; envelope insulation; placement of green roofs; installation of air curtains on exterior doors

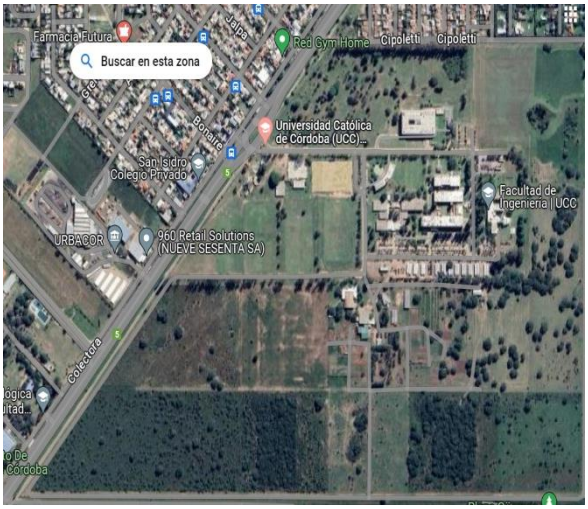

Figure 5: Vegetation and buildings distribution in the UCC Campus. Source: google map

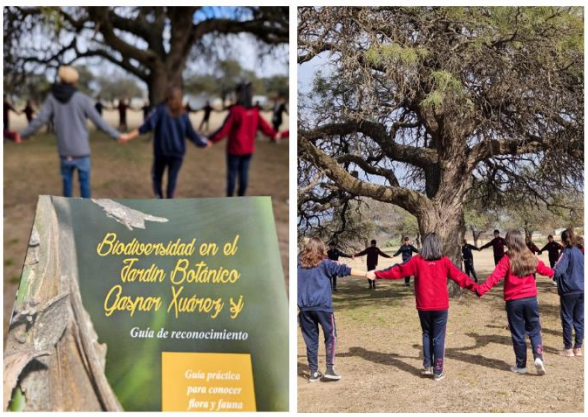

Figure 6: The UCC through its "Gaspar Xuárez S.J" Botanical Garden organizes awareness events with the academic community and the educational environment. Own source: UCC press

Figure 7: Location of the green roof in the workshop classrooms of the University's Faculty of Architecture. Images of the green roof with the weather station and the vegetation in its current state (age of the green roof: 5 years). Own source: UCC press archive

These actions related to the scoop 2 of the in the UCC carbon footprint report promote improvement in performance in the UI GreenMetric Ranking in the Energy and Climate Change, EC, and Research and Education, R&E, categories.

Regarding scope 3 linked to indirect emissions (mobile combustion, wastewater and waste):

- Sustainable transportation, discouraging the use of individual vehicles, developing strategies for the use of public or shared transportation.
- Implement model/s for wastewater processing. For instance, bioremediation through Eisenia foetida (Californian red worms).
- Promote the separation of solid waste that can be recycled and compost the organic fraction in the experimental field for the fertilization of existing plant individuals.

- Promote the reduction of the use of paper and plastic at the University, with the increase in the separation of what is used, through continuous environmental education actions.

These actions related to the scoop 3 of the in the UCC carbon footprint report promote improving performance in the ranking in the Waste (WS), Water (WR), and Transportation (TR) categories.

4. Conclusion, Summary and Future Perspectives

In this article, we have explored how UCC has integrated environmental management strategies and sustainable infrastructure development, aligning with global sustainability metrics and responding to the call to care for the "Common House". Through carbon footprint assessment and participation in the UI GreenMetric ranking, UCC has demonstrated a firm commitment to sustainability, implementing projects that have a triple environmental, academic and social impact. Continuous evaluation through these tools not only provides a basis for constant improvement, but also identifies areas of opportunity for future sustainable projects.

The importance of this work lies in its contribution to the field of sustainability in higher education, providing a replicable model for other institutions. The intersection between environmental management, sustainable infrastructure and University Social Responsibility highlights the relevance of adopting a holistic approach. This approach not only improves the university's direct environmental impact, but also fosters a culture of sustainability among students, academics and administrative staff.

Looking to the future, this study suggests the continuation and expansion of sustainable initiatives at UCC. The implementation of environmental policies based on diagnoses such as the carbon footprint and sustainability assessments such as the UI GreenMetric, should be considered essential for the development of effective action plans. There is a long way to go to outline action plans that lead to reducing GHG emissions and/or compensating/mitigating them. Consequently, improve performance in the ranking categories linked to Energy and Climate Change, Waste, Water, Transportation, Research and Education. University environmental policies and action plans aligned with the impact on the ranking categories as an input to prioritize projects and allocate resources to them. Furthermore, future research is recommended, this should explore the long-term impact of the policies and projects on the overall sustainability of universities.

In conclusion, this article highlights the critical role of universities in promoting sustainability, while at the same time offering perspectives and know-how on paths to follow on this direction. By integrating sustainable practices into their operations and curricula, universities not only reduce their environmental impact, but also prepare their students to be environmentally conscious leaders of the future. UCC, through its comprehensive approach to sustainability, positions itself as an example to follow, inspiring other institutions to take meaningful steps towards environmental conservation and social responsibility.

In conclusion, it is worth noting that Pope Francisco offers us to reflect on in the Encyclical Letter Laudato Si on care for the common home: the urgent challenge to protect our common home includes a concern to unite the entire human family in the pursuit of sustainable and integral development, because we know that things can change (Francisco, 2015). By coming together to address environmental issues, sharing experiences and setting an example of sustainable universities, university leaders from around the world

can inspire and effect the changes needed to protect and care for our common home.

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