A close-up photograph of a waterfall cascading over dark, wet rocks. The water is white and frothy as it falls. In the top right corner, there is a green triangular graphic element containing a stylized white 'if' logo.

Education for Sustainability approaching SDG 4 and target 4.7

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The Universidad Pontificia Bolivariana and its commitment to sustainability education

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Abstract

The University, from its strategic orientations, considers that the generation, strengthening and consolidation of capacities associated with sustainability should be a determining factor in its organizational culture in its projection challenges, so it should be assumed as a priority that implies facing a model that considers that the relationship between sustainability, innovation and knowledge management does not arise from spontaneous and unsystematic connections, but from deliberate actions that favor the coherence of processes considering cultural, economic and context situations to get results that generate impact and transformations in its employees and other stakeholders.

Keywords: UPB Sostenible, Strategic orientation, Education

Introduction

The University, from its strategic orientations, considers that the generation, strengthening and consolidation of capacities associated with sustainability should be a determining factor in its organizational culture in its projection challenges, so it should be assumed as a priority that implies facing a model that considers that the relationship between sustainability, innovation and knowledge management does not arise from spontaneous and unsystematic connections, but from deliberate actions that favor the coherence of processes considering cultural, economic and context situations to get results that generate impact and transformations in its employees and other stakeholders.

To achieve the transition between these models, it is necessary to channel and articulate efforts towards a process of awareness, education and application in the areas of sustainability, innovation and knowledge management that favors that all members of the university community incorporate in their daily actions the premises of sustainable development in their life project and contribute consistently with the competitive platform of the UPB Multi-campus, which integrates the headquarters in the city of Medellin and the sectional offices in Monteria, Bucaramanga and Palmira, as well as the territories where we are present throughout the country. The general purpose of the “Sustainable UPB” strategy is to achieve the transformation of attitudes and practices at all levels of the University so that they permeate the culture and thus understand that sustainability is rarely a product of chance and that in order to achieve it, rigorous, consistent and human-centered work is required as a principle of action.

In recent years, in response to global concern about the pressure on natural resources and the social affects of excessive economic growth, various conferences, meetings and agreements have been

held to take actions aimed at sustainable development, and although progress has been made in this area, non-binding policies have hindered implementation. However, in the challenges posed in the year 2000 through the Millennium Development Goals MDGs [1] and recently in the Sustainable Development Goals SDGs [2], concise goals have been set for the latter to be achieved by 2030.

Under the Encyclical Letter of the Holy Father Francis “Laudato Si” 050 [3] on the Care of the Common Home in May 2015, a call is made to humanity to realize the need to change lifestyles, production and consumption, besides recognizing that in recent decades much of the environmental changes such as global warming is caused by human activity. Likewise, Pope Francis “makes an urgent invitation to a new dialogue on how we are building the future of the planet and the need for a conversation that unites us all, because the environmental challenge we are living, and its human roots, interest and impact us all” [3]. In this sense, the University has a fundamental role in the education for transformation and the promotion and implementation of measures oriented not only to the adoption of sustainable lifestyles but also to the transfer and generation of technical knowledge that tends to the innovation of a closed-cycle economic model [4].

Throughout its 80 years of existence, UPB has had as one of its guiding principles the positive impact on each of the dimensions of what today is called sustainability. In the aspect of its structure, the institution has generated a series of policies that have been aimed at promoting the welfare of its stakeholders: employees; students; users of research and transfer, among others.

During the rectorship of Monsignor Luis Fernando Rodríguez Velásquez, there were two crucial milestones for the University: from the Pastoral Vice-Rector, led by Fr. Julio Jairo Ceballos Sepúlveda, the policy of social projection that guided this macro-process was generated;

subsequently, and from the same Vice-Rector, but headed by Fr. Sergio Alondo Duque Hernández, the social responsibility policy was designed and disseminated, reaffirming the University's permanent commitment to generate impacts that contribute to human and sustainable development. This policy was aligned with the initiatives that occupied the social responsibility landscape: Global Compact, the Millennium Development Goals, the Ethos Institute and the Global Reporting Initiative, GRI.

Currently, the University has made three strategic decisions that make up the three milestones of the moment: forming the Strategic Sustainability Committee; contextualizing the social responsibility policy within the guidelines of the 2030 Agenda for development led by the United Nations Organization, UN; and delivering the Sustainability Report of the UPB system.

While the topics of social responsibility and sustainability have been present in UPB throughout its history, what is presented now is an inclusive institutional initiative to contextualize them in the current development referents always in tune with the substantial referents that provide its identity.

1. The sustainability strategy

The Pastoral Vice Rector's Office, aware of the challenges and opportunities that sustainability issues represent for the University, assumes the leadership of the strategy called "UPB Sustainable" understood as a process of generation and consolidation of human-centered capabilities and from which the environmental, economic and social dimensions are articulated, economic and social dimensions are articulated, being an increasingly current, relevant and powerful source for its internalization by the entire university community - as a substantive

element of its organizational culture - and is reflected in an impact on stakeholders within the framework of social and human transformation as a higher purpose of the UPB.

In 2017, the sustainability strategy was launched at the Universidad Pontificia Bolivariana and it is in preparing the first sustainability report exercise where the opportunities and challenges that the university has in terms of sustainability become clear. This is the starting point to draw a roadmap (Figure 1) whose primary aim is to identify and propose a series of projects and programs that will be implemented at the Multi-campus level and that also support the strategy. Thus, five programs are born that focus on: i) information transparency management, ii) communication for sustainability, iii) generation and strengthening of capacities, iv) monitoring and follow-up of key sustainability variables, and v) strategic articulation of sustainability.

2. Training for sustainability

Figure 1. Programs and Projects, UPB Sostenible.



Source: own construction.

The capacity building and strengthening program (GenC) seeks to promote theoretical and practical knowledge in relation to sustainable development and sustainable lifestyles proposed in the 2030 Agenda, specifically Sustainable Development Goal 4 “Quality Education” target 4.7. This is divided into three projects: i. Sustainability Chair, ii. External offer of training and services in sustainability and iii. Qualification - training table, which is detailed below.

2.1. Sustainability Chair.





The university has 8 schools in different branches of knowledge: School of Architecture and Design, School of Social Sciences, School of Health Sciences, School of Law and Political Sciences, School of Economics, Administration and Business, School of Education, School of Engineering and School of Theology, Philosophy and Humanities, which offer 73 undergraduate programs, 111 specialization programs, 78 master’s degrees and 12 doctorates. After a rigorous process of review of the curricula and the descriptive letters of the various courses offered, subjects were found that have a direct relationship with some of the Sustainable Development Goals, but these addressed sustainability partially and focused on specific areas, which is why the need was found to build a course that would provide the theoretical and practical knowledge necessary to promote sustainable development holistically.

The university, aware of its role as a trainer of professionals who understand the importance of carrying out their work; having the notion that sustainability is a necessity in everyday life and work in today’s world; launches a strategy called the sustainability chair for the year 2018, as a proposal to integrate a subject to the Basic Humanistic Training Cycle in all undergraduate and graduate programs; which has been gradually integrated into the humanistic training cycles. The sustainability subject (Figure 2) is supported by four modules that are oriented by the axes

defined by the United Nations Organization (UN), which cover the challenges of humanity included in the 2030 Agenda: people, planet, prosperity, peace and alliances. For its design, national and international references in education for sustainable development were considered, all in line with the global challenges of the UN Agenda 2030 and the strategic references of the UPB as a “teaching university, with emphasis on research and innovation for sustainability”.

The sustainability professorship aims to show the historical context of the concept of development that has given direction to the current situation, students will recognize the social, environmental and economic challenges of humanity which require major transformations regarding values and practice in both daily and professional life. UPB generates a direct impact on goal number four of the Agenda for Sustainable Development (2030) of the United Nations; “Ensure inclusive and fair quality education and promote lifelong learning opportunities for all”, it

Figure 2. Sustainability Cathedra Modules

1	 Personas	<ul style="list-style-type: none"> – Introducción al desarrollo sostenible – contexto y antecedentes – La pobreza va más allá de la falta de ingresos y recursos – La seguridad alimentaria y desafíos de la agricultura – La salud como garante del desarrollo – Retos de inclusión y equidad en la educación – Igualdad entre los géneros y empoderamiento de las mujeres
2	 Planeta	<ul style="list-style-type: none"> – Disponibilidad de agua y su gestión sostenible – Producción y consumo sostenible – Medidas para combatir el cambio climático y sus efectos – Conservación de los océanos, los mares y los recursos marinos – Ecosistemas terrestres y servicios ecosistémicos
3	 Prosperidad	<ul style="list-style-type: none"> – Energía asequible, segura, sostenible y moderna – Trabajo decente y crecimiento económico – Industria, innovación e infraestructura: por qué es importante – Igualdad, tanto dentro de los países como entre ellos – Ciudades sostenibles
4	 Paz y alianzas	<ul style="list-style-type: none"> – Paz, justicia e instituciones sólidas – contexto internacional y caso posconflicto colombiano – Alianzas para la sostenibilidad – los gobiernos, la sociedad civil, los científicos, el mundo académico y el sector privado

is worth noting a specific challenge to which educational institutions are called, and it is related to goal 4.7, which expresses.

Target 4.7 of the 2030 Agenda

“By 2030, ensure that all learners gain the knowledge and skills necessary to promote sustainable development, including through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and the contribution of culture to sustainable development.”

Global universities such as Anglia Ruskin University (England), the Gothenburg School of Business, Economics and Law (Sweden), Harvard University, Massachusetts Institute of Technology, Carnegie Mellon University and the University of Pennsylvania (United States), among others, have included subjects focused on the Chair of Sustainability. Likewise, Colombian universities have joined this initiative, universities such as the Externado de Colombia, which in its postgraduate offer includes a subject on Sustainable Development, as well as the EAFIT University, which includes the same subject, but for its undergraduate students within its elective cycle NFI (Institutional Formation Nucleus).

With UPB, the sustainability chair is carried out as a response to global challenges, this in tune with its university model which expresses: “A teaching university, with emphasis on research and innovation”, all this hand in hand with sustainability. This initiative has also gone hand in hand with actions that make the university visible to the public, since UPB is part of the “university pact for education for sustainable development” which was carried out by the Mayor’s Office of Medellin, besides taking part in international rankings such as UI Green Metric, where there is an indicator that is directly related to the number of subjects that have the environment and sustainability as a theme.

As of 2022, UPB has had some success cases by including subjects related to sustainability and in other cases progress in the adhesion of subjects within the curriculum of several faculties, among the successful cases we can highlight the inclusion of the Chair of Sustainability by the School of Architecture and Design and Economics, Administration and Business in graduate programs in the Eco campus Laureles, another case of success is in the Palmira sectional where the cathedra was included in the CBFH.

2.2. External offer of training and services in sustainability.

At UPB, Continuing Education is understood as a knowledge production strategy expressed in non-degree academic services, which are developed by the Schools and academic units. These types of courses favor the updating, training and formation for the development of skills, abilities and knowledge.

The University has merged an important offer of courses and diploma courses on topics related to sustainability in coordination with different areas of the university, such as Continuing Education, Research Groups and Schools. In addition, under the 2030 Agenda for Sustainable Development and in pursuit of a healthier environment that respects all forms of life, UPB has strengthened strategic alliances that allow achieving positive transformations for society and its relationship with natural resources. With this project, we intend to design a training offer: courses, diploma courses and conferences from the different dimensions of sustainability, supported by the human talent of the same. Likewise, in coordination with the different research groups and business units, we seek to merge an offer of consulting services on environmental, social and economic issues with public and private entities and civil society organizations.

Following the line of sustainability, we can highlight the Diploma in Sustainability for Senior Management - ANDI, which is aimed at companies; for this training course, it is important to emphasize that participants must have some kind of link with decisions that have a direct impact on the course of their organizations. This is born because companies and their stakeholders need information and tools that are at the forefront which allow them to develop a new management vision, which is based on ethical values and solid principles of sustainable development. In alliance with ICONTEC is the Senior Management Program in Sustainability, whose main aim is to promote and help public and private organizations and their technical and managerial teams in the development of a managerial vision based on solid ethical principles and values and the principles of sustainable development.

The Universidad Pontificia Bolivariana has offered four thousand two hundred and twenty (4220) curricular contents contemplated in the curriculum offered in the different sections of the university, on sustainability issues, for the case of the central headquarters - Medellin, the number of courses available was two thousand six hundred and eighty-three (2683), data for the year 2021. The following are some courses offered by different schools of the university, such as Eco innovation Course, Course on Sustainable Development Goals applied to companies and the Circular Economy Course in the School's case of Economics, Administration and Business, regarding the School of Engineering are the course on Sustainable Mobility Plans and the Diploma in Sustainability.

Included in all its offerings, the University has, The House of Happiness which is a program of personal growth that includes courses and activities aimed at people to gain knowledge on issues of general culture, spiritual strength and can develop skills in arts and crafts. For the year 2021, the House of Happiness offered the course of the common care in which environmental and sustainability issues were addressed.

The University in its role as a trainer of actors of change, who generate impacts on the environment where they develop, has not only bet on training students with sustainable awareness from the undergraduate level, which have been mentioned previously, but has a training offer for those interested in further strengthening their skills and knowledge about sustainability. The Master's Degree in Sustainability is offered in agreement between UPB and the Fundación Universitaria Católica del Norte, which involves topics associated with the different socio-ecological systems and thus understand how society and the environment interact, besides identifying potential challenges, risks and impacts. The innovation and adaptation of technology to the demands for sustainable development; the handling and management of natural resources for their efficiency, pollution and waste management are topics aimed at decision making according to the requirements of companies, industry, governmental and non-governmental organizations and public administration.

The master's degree also proposes practical tools and methods based on interdisciplinarity from a systemic approach to analyze the problems of unsustainability of socio-ecological systems at the national, regional and local levels. The applicant's professional undergraduate studies may be in the following areas of knowledge: engineering; architecture, urban planning and related fields; social and human sciences, economics, administration and natural sciences.

2.3. Qualification and training table.

In the University there is a wide academic offer and according to the disciplines, in the different training cycles there are subjects that have a direct relation with some objectives of sustainable development. Since the formation of the Strategic Committee on Sustainability and

the consolidation of the work team, the University is strengthening its capabilities (physical and human talent) in sustainability that can generate an external academic offer to reach different audiences and develop research and consultancy. In the opinion and imagination of UPB teachers and administrative staff, there are paradigms based on diffuse sources that do not always respond to the concepts of sustainability, and this situation leads them to make judgments and adopt unconstructive positions that may hinder the proper functioning of the university dynamics.

It is for this reason that the Qualification and Development of Human Talent Program exists at UPB. Its purpose is to qualify the level of training of the working community and improve their practices for optimal personal, professional and work performance. To achieve this purpose, the Program promotes formal education and continuing education activities with facilitators that legitimize the institutional principles and values; in addition, it designs and programs learning experiences, which will allow the management of knowledge that can be embodied in the production of material and spiritual wealth as editorial creation, better work practices and sharing personal experiences that raise awareness and contribute to the life project of the University employees.

Training Committee

The Universidad Pontificia Bolivariana at Multi-campus level has configured a primary committee (Training Board) that is designed according to the size and structure of each sectional and has the participation of different academic and administrative units. Among its principal functions is to design and update the curricular microstructure of the Program, validate the proposals for modification or the descriptive letters of the training experiences, among others.

Culture Nucleus: course and conversations

The link to the training table has been made through the culture nucleus, which includes the Sustainability Training Course and the Pedagogical Conversations. In the Training's case Course, this is aimed at administrative personnel; for those who take it will show the historical context of the concept of sustainable development that has guided the current situation and recognize the social, environmental and economic challenges of humanity from a context of organizational culture and thus these students can put forward ideas to contribute to local solutions in terms of sustainability from the personal and professional.

Universidad Pontificia Bolivariana, aware of its commitment to the environment and under the certification granted by Icontec as the first University in Latin America and the Caribbean to be Carbon Neutral and Zero Waste, will hold a series of Pedagogical Conversations on Sustainability, in charge of the program of qualification and development of human talent.

In the cycle of conversations, there is a convergence of the public and private sectors in a dialogue with the academy, where ideas will be exchanged to reinforce the commitment of the actors involved and to show the fulfillment of the Sustainable Development Goals.

Sustainability leader

This project seeks to continue the training of administrative and teaching staff of the University who, in the exercise of their work, have some relationship with sustainability and innovation or who are interested in expanding their knowledge in these areas; participants will be trained in fundamental concepts of sustainability and, particularly, in the opportunities to exercise significant favorable changes in each of its dimensions from the daily life of their lives, achieving in them a critical and proactive vision. With this initiative, the university seeks that teachers and administrative employees know the development context that has

guided the current situation and recognize the environmental, social and economic challenges of sustainability that demand transformations and practices from their professional and personal lives.

This course seeks to enhance the unique skills related to sustainability and innovation, such as strategic vision, teamwork and technical rigor, and also aims to strengthen human competencies associated with the transformation of the different environments of society, from different disciplines.

Despite its recent configuration and structure, the topics addressed in this course have had great relevance over the years. The concept of sustainable development emerged in 1987 and, since then, the design of mechanisms and methodologies for its implementation has been diverse and applied in all economic and social sectors. The aim of this course is to recognize these transformations that have given rise to a new form of development and incorporating variables, such as innovation and social impact, in the definition of organizational strategies.

With virtuality, teachers have designed different inputs to ensure the transfer of knowledge on the topics addressed. In this way, there will be presentations, videos, podcasts and rigorous bibliographic material, where the student will be able to actively and dynamically consult the key topics for the development of skills. Likewise, the student must independently develop their own inputs with the guidance of the teacher, which will allow them not only to passively attend the instructions but to be part of the design of strategies, plans and proposals that confront them with their role as a professional and citizen in the work of incorporating sustainability in all their work. All this strategy of Sustainability Leader carried out by Multi-campus.

Training of administrative employees

Regarding the training of administrative employees in the Human Management team, training was provided on the historical context of sustainable development and its impact on the current situation, focused on compliance with the 2030 agenda and institutional work. This with the purpose of establishing a greater understanding of the concept of sustainability from its background to its present forms; management tools were presented in the course, and national and international guidelines on sustainability were identified; strengthening the reflective and critical action of the participants; from the dimensions of sustainability, aligned with the principles and values of Christian humanism for the exercise of personal autonomy and social responsibility as an integral subject.

3. Challenges and conclusions

The University not only proposes to provide training programs and courses for external and internal students, but also to advise on sustainability issues, which is why the rest of the project proposes to create a sustainability consultancy, which is a project that is not yet in execution, however when it is implemented, it is intended to promote the generation of spaces for reflection that allow the unification of the Bolivarians' imaginary in relation to sustainability, in response to global challenges, so that all are replicators, as a contribution to the joint project of the consolidation of the culture of university sustainability. In order to reach administrative and teaching staff, the consultancy includes an opportunity to apply the tools and concepts of sustainability to what to do in the university work environment and the dynamics is designed so that it is the teacher or administrative professional who voluntarily, according to the needs of their context, seeks guidance on the subject.

The sustainability strategy has positioned UPB favorably since it has the certifications in Carbon Neutral and Zero Waste by ICONTEC, which has driven changes in the way of providing education since sustainability

is better known in the university campus by undergraduate and graduate students, as well as administrative and teachers, all this with a wide range of training for UPB public and external entities to the University, which shows the commitment not only with the environment but with the community and the different actors; whether public or private; in sustainability issues.

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