Sustainability Management in Higher Education Institution: 2030 Agenda's international partnership case study

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Abstract

The Sustainable Development Goals (SDGs), are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. The 2030 Agenda for Sustainable Development including its 17 SDGs was adopted in 2015 by Heads of State and Government at a special UN summit. 2030 Agenda adoption was a landmark achievement, providing for a shared global vision towards sustainable development for all. Higher Education Institutions (HEI) should not be away from this challenge, helping to solve emerging problems of global society. This paper describes and evaluates a case in which researchers, in collaboration with their Higher Education Institution communities, attempted to align the public participation process to stakeholders' sustainability literacy and practice in a sustainable HEI development process in two Latin America countries: Brazil and Colombia. This scenario represents a set of initiatives regarding the Sustainable Development Goals (SDGs) to assess public governance focusing on higher education. During this study, both universities compared their initiatives, their lack of environmental culture of the university community, as well as other 2030 Agenda related issues. Main results collected within Brazilian projects are related in this paper.

Keywords
Environmental management, Sustainability, international research partnership.

1. Introduction

Higher Education Institutions (HEI) have a relevant role in the dissemination of sustainability, especially when incorporating environmental values and practices, both in the disciplines taught and in the administration of their physical structures (Feres and Antunes, 2007). How students learn to think about sustainability will influence their actions as local and global citizens (Moore, 2005). Sachs (2009) puts social dimension ahead of the environmental one in terms of importance in the attempt to highlight sustainability faces, often perceived "only" as environmental. According to him, social sustainability stands out as the very purpose of development, a view corroborated by the realization that a social collapse would precede an environmental catastrophe.

The implementation of SDGs is a challenge that calls for active participation of different social actors in sharing the responsibility of actions, including governments, non-governmental organizations (NGOs), civil society and companies (Avila et al, 2017). Notwithstanding their global nature and universal applicability, the SDGs dialogue with regional and local policies and actions, requiring several levels of participation (UN, 2015).

Despite the debate about HEI dimensions adequacy to SDGs premises on university campuses, results are still far from ideal. Advances are necessary because their logic lies in the fact Higher Education Institutions, at its core, are fertile spaces for the emergence of ideas, followed by experimentation and discussion (Disterheft, A. et al., 2011).

Beginning in 2015, a joint research was begun between two researchers in Brazil and Colombia on environmental sustainability and circular economy projects and initiatives in their institutions. The project, which has been extended for more than four semesters, represents the desire to innovate and share experiences for the transformation of consumer behavior towards a more sustainable perspective for the planet and human survival. The present study presents the initiative of a Brazilian university to identify the main elements of the Agenda 2030 in its routine within the areas of teaching, research, extension and university management (Trigo et al, 2017a, 2017b).

2. Brazilian HEI Case Study: Cefet/RJ

Celso Suckow Federal Center of Technological Education of Fonseca (Cefet/RJ) had its origin in 1917 as Wenceslau Brás Normal School of Arts and Crafts. On June 30, 1978, through Law 6,545, the Celso Suckow ETF of Fonseca was transformed into the Celso Suckow Federal Center of Technological Education of Fonseca.
Currently, it is a federal teaching institution that is committed to being a public space of human, scientific and technological training. It offers technical courses integrated to the secondary, post-secondary, technological, undergraduate and post-graduate courses lato sensu and stricto sensu (masters and doctorate), in face and distance modalities.

Cefet/RJ operates in the teaching, research and extension triad and aims to contribute to the training of professionals prepared for the economic and social development of the mesoregions of the state of Rio de Janeiro. Since the expansion of the federal network of technical and technological education, the institution has the campus located in the Maracanã neighborhood, in the city of Rio de Janeiro / RJ, and with seven campuses spread over the state of Rio de Janeiro: Angra dos Reis, Itaguaí, Maria da Graça, Nova Friburgo, Nova Iguaçu, Petrópolis and Valença. (CEFET/RJ, 2016).

Cefet/RJ offers technical courses integrated to secondary, post-secondary, technological, undergraduate and post-graduate courses *lato sensu* and *stricto sensu* (masters and doctorate degree), both local and distance modalities. Given the diversity of teaching levels in Cefet/RJ, it is important to observe at all levels the three dimensions that involve educational process in this Center - teaching, research and extension - when constructing a project aimed at the development of skills and abilities of the human being (Cefet/RJ, 2017). In order to serve the Multicampi System, Cefet / RJ has 1,503 employees: 864 teachers and 639 technical-administrative staff to serve its 18,616 students at all levels (CEFET/RJ, 2016).

3. Cefet/RJ and 2030 Agenda projects

According to Cefet/RJ Institutional Pedagogical Project indissociability attributed to teaching, research and extension represents its values such as:

- teaching must be associated with extension, in a contextualized formation in contemporary social issues;
- research teaching aims competences development that aim to introduce students to basic forms of research, which, aiming at generating knowledge, providing subsidies for teaching activity itself;

- research, observing the social context, can produce intervention tools, as well as the extension can attend to those realities known through research.

Cefet/RJ main initiatives bring together all educational institution players, presented to provide adequate environment for sustainable reality, aligned with Global Objectives for Sustainable Development (2015) and the Declaration for Higher Education Institutions, emerged during Rio+20. Thus, in order to organize the initiatives related to the sustainable development objectives (SDG) in Cefet/RJ, Table 1 presents eight institutional projects focused on the environmental issue.

Table 1. Brazilian SDGs projects and initiatives

Agenda 2030: Sustainable Development Goals	CEFET/RJ initiatives
Goal 1. End poverty in all its forms everywhere	*Student Protagonism: Enactus*
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	*Teaching, Research and Extension*
Goal 5. Achieve gender equality and empower all women and girls	*University Pact for the Promotion of Respect for Diversity, the Culture of Peace and Human Rights*
Goal 6. Ensure availability and sustainable management of water and sanitation for all	*Water conscious management*
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	*CIEEMAT Ibero-American Congress on Entrepreneurship, Energy, Environment and Technology (CIEEMAT)*
Goal 12. Ensure sustainable consumption and production patterns	*Sustainable Public Procurement*
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	*Affirmative Actions*
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	*UK FAO research partnership and Colombia circular economy partnership*

Sustainable public management is based on the premise that Public Administration should prioritize transparency, honesty and competence to seek good operational results focused on sustainability. In this way, it is in line with the Global Sustainable Development Objectives (ODS), which were proposed in a Agenda developed in 2015 by 193 UN Member States - Agenda 2030 (ONUBR, 2015). The implementation of ODS is a challenge that seeks a partnership with the active participation of social actors, including governments, civil society and the private sector. Despite their global nature and being universally applicable, ODS dialogue with regional and local policies and actions.

Seeking to consolidate the sustainable practices present in its management, in addition to providing suggestions and measures aimed at minimizing the environmental impacts caused by its daily activities, the Strategic Management Board (DIGES), the executive body responsible for coordinating the preparation of the Institutional Development Plan , monitoring of the execution of plans and projects and official supply of information on the performance of Cefet / RJ, created the Strategy Division for Institutional Environmental Sustainability (DISAI) to support the Sustainable Procurement Program in Public Administration, elaboration of the Management Plan (PLS), control of solid waste activities through the Central Commission for Selective Solidarity Collection (CCCSS), support to the Adhesion Term of the Environmental Agenda in Public Administration (A3P) with the Ministry of Environment.

The Environmental Agenda of Public Administration (A3P) is seen as a Social-Environmental Responsibility Agenda of the Government (Brasil, 2009, 2018), being one of the main actions to establish a new governmental commitment to the activities of public management. In the same spirit, from 2012, it was established the obligation of all Public Administration entities to prepare their Sustainable Logistics Management Plan (PLS).

PLS are planning tools with defined objectives and responsibilities, actions, goals, execution deadlines and monitoring and evaluation mechanisms, which allows the organ or entity to establish sustainability practices and rationalization of expenses and processes in Public Administration. (MPOG, 2010, article 3) The Sustainable Logistics Management Plan (PLS) of Cefet / RJ is structured in seven thematic axes, which include: Sustainable Procurement and Contracting; Energy Economics and Conservation; Management and Sustainable Use of Water and Effluents; Solid Waste Management, Sustainable Construction and Construction, Displacement of Personnel and Quality of Life in the Work Environment. For each thematic axis, actions will be proposed to meet objectives (Brasil, 2017).

Once understood the importance of recognizing a change in the organizational culture of higher education institutions, each of the eight initiatives selected in the Cefet/RJ Case Study will be presented below.

3.1 Goal 1: *Student Protagonism: Enactus*

Enactus is the world's largest experiential learning platform dedicated to creating a better world while developing the next generation of entrepreneurial leaders and social innovators. The Enactus network of global business, academic and student leaders are unified by our vision—to create a better, more sustainable world.

Enactus' mission grounds in engaging the next generation of entrepreneurial leaders to use innovation and business principles to improve the world. Enactus has established the largest global business and higher education network in the world. This unique network brings together the knowledge of professional business educators and the expertise of business leaders (i.e. Walmart Brazil, Unilever, KPMG, McDonald's Brazil, Ambev, Bank of America Merrill Lynch, Cargill Foundation Brazil) to focus the potential of university students preparing for leadership roles in business.

Worldwide, Enactus 72,000 students are entrepreneurial, values-driven social innovators across 1,730 campuses in 36 countries, positively impacting the lives of 1.3 million people each year. Guided by educators and supported by business leaders, teams of students conduct needs assessments in their community, identify potential solutions to complex issues and implement community impact projects. This results in communities benefiting from collaboration and fresh innovation, plus students gain the valuable experience to advance their personal and professional lives.

Enactus team is the oldest established at Cefet/RJ by 2002 and three times winner in Brazil (2008,2010 and 2014). In 2017, Cefet/RJ Enactus Business professor, Alexandre Ali was chosen amongst all country committee to represent Brazil within Enactus international competition in United Kingdom.

Enactus CEFET / RJ currently works on five projects: Nomade, Tato, Incare, Iara and Gera. The Nomade project and the Incare project by participating in the Shell Youth Initiative Acceleration Program.

The purpose of the Nomade Project is to universalize conscious eating by connecting different realities: • Approaching small and medium-sized agroecological and organic producers of final consumers in urban centers, using the collaborative economy with facilitators who lead the products between the countryside and urban centers. A project that has great conditions to become a collaborative economy enterprise.

Incare is a project created with the objective of empowering refugees in Rio de Janeiro through training, sustainable partnerships and opportunity mapping, in order to form a solid network that connects partners, beneficiaries and stakeholders. Evaluating the knowledge of the beneficiaries, offering leveling, inserting the refugees in programming courses recognized in the market and then in the labor market.

The Tato project aims to transform the Alliance of the Blind Association into a reference in the reception, treatment and inclusion of the visually impaired free of charge here in Rio de Janeiro. To this end, it seeks to solve the problems of the organization: Financial Health, with the purpose of restructuring the Brooms Factory of the Association in addition to actions of Social Inclusion and Marketing in the Association.

IARA aims to bring sustainable technologies, linked to basic sanitation, clean water supply and adequate management of solid waste, to communities deprived of this essential good, aiming at improving the quality of life, reducing environmental impacts and improving health the generation of income through the trade of technologies.

The fifth project to begin with is "Gera," one of McDonald's "Mc Mc's That Changed the World" edicts that will develop sustainability actions with input waste after consumption at McDonald's stores.

3.2 Goal 4: *Teaching, Research and Extension*

Between 1960 and 1964, there is a proliferation of discussions about political and ideological issues and education in Brazil, lead by the students' movement. In this context, academics start to perform university extension detached from university projects, centered on developing activities to help the population in need (FORPROEX, 2003).

In the 80s, discussions about the relationship between university and community start, strengthened by the creation of Extension Provosts for the Forum of Brazilian Public Universities in 1987, which proposed this concept of university extension as "an educational, cultural and scientific process that articulates teaching and research in an inseparable way and enables the transforming relationship between university and society" (Nogueira, 2000).

Discerning the possibility of building new extension-education alternatives produces the need to break with what is happening traditionally, and also the commitment to assume other responsibilities and challenges. In this perspective, a new way of seeing and performing extension demands is suggested, among other propositions, new patterns of relationship among professionals, academics and community (Tavares et al, 2007).

As Lather (2006) states, across the paradigms, students so trained in the philosophical, ethical and political values that undergird knowledge production will be able to negotiate the constantly changing landscape of educational research far beyond the application of technical methods and procedures. Layering complexity, foregrounding problems, thinking outside easy intelligibility and transparent understanding, the goal is to move educational research in many different directions in the hope that more interesting and useful ways of knowing will emerge.

In this sense, Freestone & Wood (2015) believe that built environment education offers a distinctive set of circumstances for exploring the research-teaching nexus. Belying external perceptions, they are usually heterogeneous constellations of disciplines in various configurations raising several questions such as: What is the nexus between research and teaching in this realm? How is it addressed by current learning strategies? How do students acquire research skills? How do staff progress scholarly objectives through pedagogic research? How do they juggle and interrelate their research and teaching duties? What particularistic issues are raised in the built environment professions? What new ideas can we tap to better promote quality teaching and research quantum?

Cefet/RJ develop teaching, research and extension activities integrated with management initiatives which entangles these questions with 2030 Agenda issues bringing a more reflexive environment.

3.3 Goal 5: *University Pact for the Promotion of Respect for Diversity, the Culture of Peace and Human Rights*

UNESCO's long-term objective is to develop a comprehensive system of education and training for peace, human rights and democracy, international understanding and tolerance, embracing all levels of education, both formal and non-formal. To this end, efforts have been focused on encouraging Member States to elaborate national strategies, plans and programmes; promoting innovations in school curricula and educational contents and methods; elaborating and disseminating educational materials; and supporting national institutions in developing human rights training programmes. Special emphasis was placed in 1998 on the celebration of the fiftieth anniversary of the Universal Declaration of Human Rights.

The University Pact to promote respect for cultural diversity and human rights is a joint initiative of the Ministries of Education and Justice and Citizenship to promote education in human rights in higher education. It is open to establishments of higher education and supporting bodies. Its objective is to overcome violence, prejudice and discrimination, and to encourage educational activities which promote and defend human rights in higher education. In order to participate, the Institution of Higher Education (IES) or Supporting Entity (EA) must sign the Instrument of Adherence to the Pact, with the commitment to develop activities to support the initiative among the axes of teaching, research, extension, management and coexistence. The signature of the Term shall be carried out by the maximum director of the Institution.

As one of the more than 300 Brazilian institutions enrolled in the University Pact, Cefet/RJ was represented by its Institutional Development chief in a meeting promoted to exchange experiences among institutions. As a community college, Cefet/RJ the responsibility of ensuring people in the community are attentive to the principal discussions that are taking place in our country. Human rights and respect for cultural diversity and peace are important topics of debate in a country like Brazil.

3.4 Goal 6: *Water conscious management*

Much is known about the importance of water in relation to maintaining life on our planet. Over the years, the human species has grown and developed around this natural good. In today's society, water has also become a necessary input for the execution of many activities, but it is used without any control. This neglect has become a topic discussed a number of years ago, and with this, many agencies have begun to consider the scarcity of this resource, so poorly distributed on the planet.

While in some more developed places, there are plenty of water reserves, presence of technologies applied to water treatment and intense use for the maintenance of agriculture and industry, in other more needy places is still far from the day when most of the population will have water to maintain a minimum quality of life.

Faced with so many initiatives to change this scenario, there is a requirement to practice the sustainable use of water in the organs of the Federal Public Administration, which already occurs in some public educational institutions, such as Cefet /RJ.

Because it is an institution of excellence in the production of academic knowledge in technical, technological and higher education, the Center has also promoted the participation of its community in initiatives for citizenship and social and environmental responsibility.

For this reason, the Strategy Division for Institutional Environmental Sustainability (DISAI) was created in 2017, which is linked to the Strategic Management Department - DIGES at Cefet-RJ, it aims to transform ideas into actions

related to environmental management and education, developing in each individual of the community the socio-environmental perception. One of its articulate, guide, monitor and evaluate the development of projects focused on environmental management within the institutional framework. For the conduction and coordination of its projects, DISAI should observe how the project's theme impacts the physical and financial sustainability of the Center; and therefore, in this project, the following question was elaborated: how is the water consumption in Cefet-RJ verified? The Maracanã campus will serve as a pilot for the development and monitoring of the project, which is known as Conscious Consumption of Water Management.

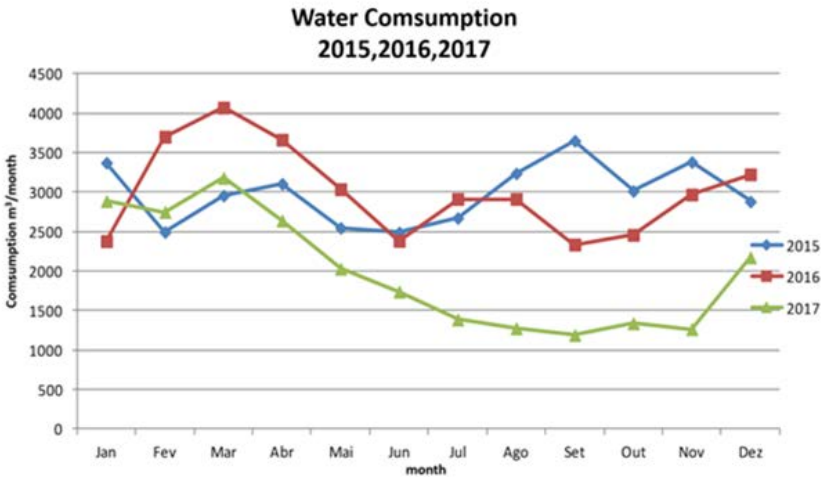

Figure 1. Cefet/RJ Water Comsumption

For instance, from April to November 2017, consumption reduced by more than 50% compared to 2015 and 2016. There was a consultation with the campus prefecture to understand the situation. There were no leaks in piping installed in the internal and external areas, and therefore, it is believed that improvements made in sanitary facilities such as the installation of sanitary equipment that reduce the flow of water in taps, showers and the exchange of valves by coupled boxes to the toilets during the year 2016, can explain the reduction of consumption in 2017.

3.5 Goal 9: *CIEEMAT Ibero-American Congress on Entrepreneurship, Energy, Environment and Technology (CIEEMAT)*

The challenges of higher education for the 21st century, namely the centralization of the educational process in the student and the sharing of experiences between institutions, in terms of international cooperation, double diplomacy and cooperation with the community, are also topics for discussion among participants.

Ibero-American Congress on Entrepreneurship, Energy, Environment and Technology (CIEEMAT) will be held to promote cooperation between the institutions of the Ibero-American countries, namely through their professors, researchers, professionals and students. will be held in the city of Angra dos Reis, Rio de Janeiro, Brazil.

CIEEMAT intends to be a privileged meeting of professionals, researchers, professors and students from the Ibero-American countries that carry out their activity in Energy and the Environment, gathering around the areas mentioned above, entrepreneurship and technological innovation.

CIEEMAT main topics are:

- Management and Sustainability in Organizations
- Climate Change and the Environment
- Renewable energy
- Bioenergy
- Energy Efficiency in Buildings
- Processing, Characterization and Applications of Nanoparticles and Nanostructured Materials
- Smart Grids and Networks
- Power Storage Systems

- Electrical Mobility
- Electric Machines and Variable Speed Drive Systems
- Entrepreneurship and Technological Innovation
- Pedagogical Innovation
- Steel, Energy and Environment
- Materials Processing and Characterization

3.6 Goal 12: *Sustainable Public Procurement*

The Federal Constitution, Art. 37, item XXI, provides, for Public Administration, the obligation to bid. This article was regulated by Law No. 8,666 of June 21, 1993, which established general rules on public tenders and administrative contracts related to works, services, including publicity, purchases, divestitures and leases within the Union, State, the Federal District and the Municipalities.

The bidding process is the formal administrative procedure in which the Public Administration summons, through conditions established in its own act (edict or invitation), companies interested in submitting proposals for the offer of goods and services.

The bidding aims to ensure compliance with the constitutional principle of isonomy and select the most advantageous proposal for the Administration, in order to ensure equal opportunity for all interested parties and enable attendance at the contest of the largest possible number of competitors, a fact that favors the interest itself public.

According to Article 3 of Law No. 8.666 / 1993, Sustainable Bidding is one that is intended to ensure compliance with the constitutional principle of isonomy, the selection of the most advantageous proposal for the administration and promotion of sustainable national development. (Drafting provided by Law 12349, of 2010).

In this sense, it can be said that sustainable public procurement is the formal administrative procedure that contributes to the promotion of sustainable national development, through the insertion of social, environmental and economic criteria in the acquisition of goods, contracting of services and execution of works. In general, it is about the use of public sector purchasing power to generate economic and socio-environmental benefits.

Sustainable procurement and procurement have a strategic role for public agencies and, when properly carried out, promote sustainability in public activities. Therefore, it is essential that public buyers are able to correctly delimit the needs of their institution and know the applicable legislation and characteristics of the goods and services that can be purchased.

The Brazilian government spends more than 600 billion reais annually on the acquisition of goods and contracting services (about 15% of GDP). In this sense, directing the purchasing power of the public sector to the acquisition of products and services with sustainability criteria implies the generation of socio-environmental benefits and the reduction of environmental impacts, at the same time as it induces and promotes the sustainable goods and services market. By DISAI initiatives Cefet/RJ started a series of changes facing Sustainable Public Procurement challenges in 2018.

3.7 Goal 16: Affirmative Actions

Brazil is a signatory of all internationally agreed declarations, treaties and agreements for the protection and promotion of human rights and development. This includes those dealing with the fight against inequalities, from the most general, such as the Universal Declaration of Human Rights (1948), to more specific ones, such as the International Convention on the Elimination of All Forms of Racial Discrimination (1966). In the last six decades, most of the international instruments signed and ratified by Brazil present affirmative actions as strategies recognized and recommended by the UN for the promotion of equality and the fight against discrimination and outline the conceptual bases for positive State actions to promote equality.

Brazil has been notable for its progress in implementing the recommendations of the Third World Conference against Racism, Racial Discrimination, Xenophobia and Intolerance (2001). Initiatives in educational policy, such as reserving vacancies for Afro-descendants and indigenous people in public or private universities, are aligned with the positive Brazilian agenda of reducing inequalities and expanding educational opportunities for members of historically discriminated and marginalized groups.

Affirmative actions are focal policies that allocate resources to the benefit of people belonging to groups discriminated against and victimized by socioeconomic exclusion in the past or present. These measures are aimed at combating ethnic, racial, religious, gender, or caste discrimination, increasing the participation of minorities in the political process, access to education, health, employment, material goods, social protection networks and / or cultural

recognition. Among the measures we can classify as affirmative actions we can mention: increased hiring and promotion of members of groups discriminated in employment and education through goals, quotas, bonuses or stimulus funds; scholarships; loans and preference in public procurement; determination of goals or minimum quotas of participation in the media, politics and other areas; financial reparations; distribution of land and housing; measures to protect endangered lifestyles; and identity valorization policies.

The origin of affirmative action in the United States taken by President Kennedy in 1961 as part of various public policies aimed at reducing the social tensions resulting from racial discrimination, which in some states at that time still had characteristics similar to those of the apartheid regime.

In public and academic debate, affirmative action often assumes a narrower meaning, being understood as a policy whose objective is to ensure access to important social positions to members of groups that, in the absence of such a measure, would remain excluded. In this sense, its main objective would be to combat inequalities and to disintegrate the elites, making its composition more representative of the demographic profile of society.

Brazilian Law principle of equality presupposes that people placed in different situations are treated in an unequal way: "giving isonomic treatment to the parties means treating the same equally and unequally the unequal, in the exact measure of their inequalities."

On August 7, 2012, the Federal Senate approved a bill that was negotiated for about a decade in Congress, instituting the reservation of 50% of the vacancies of universities and federal technological institutes for students who have taken high school in public school.

In addition, the law provides that, of these vacancies, half will be destined to students with per capita family income up to a minimum wage and a half. It also provides that in each state will be allocated vacancies for blacks, 'pardos' and indigenous, respecting the percentage of these groups in the states, according to Brazilian Institute of Geography and Statistics data.

These measures aim to meet the historical demands of activists who fight for the right to education and also for the effective democratization of higher education in the country. As we know historically the Brazilian university system has developed in a restricted way in terms of number of places and also of groups attended. Higher education has long been thought of as a system for a few, and often for those who have managed to prepare to compete for a place in a highly competitive environment.

On the other hand, introducing quotas in Brazilian public universities as an instrument to compensate for racial or social discrimination is much easier and less burdensome than correcting the fundamental problem, which is to make higher education better, giving more opportunity to lower income students. The big problem, in fact, is to improve the quality and equity of primary and secondary education so that everyone has the same opportunities in access to higher education.

Although the issue of Affirmative Actions is not a "pacified case", and there are still controversies about the positive effects of its implementation, it is considered that there have been significant advances in Cefet / RJ. Considering the humanist perspective proposed in Agenda 2030, there is a perception of an inclusive vision among the academic community.

3.8 Goal 17: *UK FAO research partnership and Colombia circular economy partnership*

The Food and Agriculture Organization (FAO) is specialized agency of the United Nations that leads international efforts to defeat hunger. FAO goal is to achieve food security for all and make sure that people have regular access to enough high-quality food to lead active, healthy lives. With over 194 member states, FAO works in over 130 countries worldwide.

Systems of food production, trade and consumption are increasingly vulnerable to interconnected political, economic and ecological shocks associated with climate, environmental and ecosystem changes, shifts in farming practices and consumer lifestyles, and globalisation.

Based within Politics and Management School, one partnership is working at "IKnowFood: Integrating Knowledge for Food Systems Resilience", a project funded through the Global Food Security's "Resilience of the UK Food System Programme", with support from BBSRC, ESRC, NERC and Scottish Government. The project is supported by the York Environmental Sustainability Institute (YESI) and the N8 Agrifood Programme and developed in collaboration with the University of Manchester and the University of Liverpool.

In this project, the concept of resilience is used to investigate the sources of these vulnerabilities and to produce datasets, information resources, engagement approaches and business tools that will assist stakeholders in developing mitigation and adaptation strategies, exploring resilience on farm, in the supply chain, and among consumers, in order to:

- deepen understanding of the food system and how stakeholders differ in their ability to respond to crises and stresses within global food supply chains;
- investigate how structures, institutions and information can support individuals, communities and organisations to think and act in response to different types of change that emerge within the complexity of the global food system;
- explore how new forms of data, mobile technologies, institutional models and incentive frameworks can shape information flows and behaviour, enabling researchers, technologists and food system stakeholders to resolve and respond in a timely fashion to pressures facing food consumption, production and trade; and
- Provide a new model of food system resilience that sets an agenda for future interdisciplinary research and defines policy objectives for a resilient UK food system.

Another initiative, the Colombian case (Rodriguez and Martinez, 2013) analyzes the accumulation of solid waste in landfills as one of the casus of the global warming due to the greenhouse effect gases, such as carbon dioxide. This comes from the decomposition of several materials disposed in the landfills. Such an accumulation is a consequence of the production, consumption and indiscriminate waste of products once their lifetime is over. Universidad El Bosque is one among many sources of solid waste thus contributing to its accumulation in the landfill. A field work was developed during 4 months, identifying the current management of the waste from the moment of its generation until its final disposition in the university. Then, 9 eatery zones were defined in order to quantify and characterize the waste from packages generated, by the use of interviews. Finally, the information obtained was analyzed, the conclusions were defined and so were the projects to be developed in the future. The nine eatery zones produce, together, 375Kg of packages per week, mainly glass, paper, cardboard and plastic, which mean 15 tons of recoverable materials.

Final Considerations

Currently, the main challenge of CEFET/RJ is to show how the incorporation of attitudes, which converge with sustainable practices and rationalization of expenses and processes, in the operational day-to-day of university campuses have a positive effect in teaching, research, extension, environmental, ethical issues. Advances are necessary because the logic of HEI relevance lies in the fact that they are fertile spaces for the emergence of ideas, followed by experimentation and discussion.

The issue addressed is undoubtedly critical, given the high demand for new sustainability practices, and the application of viable means of allying the principles of public administration, such as economy, efficiency, among others, with day-to-day management practices Administrative, as well as the lack of further studies in the area, helped to delimit the topic addressed in the present study.

Although this work presents only a part of the activities developed with a focus on the environmental issue, observing the urgency of changes in the current scenario, we sought to highlight issues that inspire and inspire young scientists in the search for new and simple solutions for the construction of a more sustainable development. It is recommended that more studies with similar experiences be used comparatively in order to find methods and alternatives for new projects.

Considering the initiatives presented by Cefet/RJ, it should be emphasized the important role of educational institutions in formative character of exercising citizenship, in pursuing a more just society and promoting environmental sustainability, through the articulation of discussions about a less intensive consumption model, being more conscious in the use of natural resources.

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