Experiences in Sustainability of Two Public Universities in Different Contexts: The University of Copenhagen and the University of São Paulo

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Abstract Universities, especially the public ones, play an important role in the formulation and implementation of public policies of Sustainability, and in teaching people who can act in the construction of sustainable societies. The purpose of this study was to establish relationships between the realities of two public universities in different contexts, the University of Copenhagen (UCPH) and the University of São Paulo (USP). Then, internships were taken at both universities, UCPH and USP, from 2015 to 2016. We made observations and dialogues, and analyzed reports, books, as well university environmental policies, strategies and practices on sustainability. Based on these two experiences, it was possible to identify convergences and divergences between policies, strategies, and practices related to sustainability. Here, some categories were discussed: the context of each University influencing its actions, sustainability offices, as well their goals, plans, and strategies for biodiversity protection, environmental education, waste management and cooperation related to sustainability. It has been noticed challenges for universities to integrate sustainability into education, research, outreach activities, direct campus operations, and community involvement. However, UCPH and USP are trying to overcome and improve them.

Keywords Planning · Public policies · Sustainable development
UCPH · USP

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1 Introduction

1.1 Universities and Sustainability

Urban growth has faced many problems, especially the lack of planning in urban centers. So, many obstacles need to be overcome. Issues such as water crisis, waste management, energetic use and biodiversity conservation have been debated. In this perspective, the term "sustainability" has been widely used and, in general, is associated with the fact of attending present needs without compromising future generations (World Commission on Environment and Development 1987). In other words, attitudes that can support human needs and activities throughout the generations, taking into three main factors: economic development, social improvement and environment protection (World Commission on Environment and Development 1987).

Although large-scale measures are controlled by the major decision-makers, as politicians and businessmen, a change at individual level is significantly important. This is related to critical thinking and small changes that can achieve relevant movements towards the improvement of the country, in a process of shared management and planetary citizenship.

In this context, the universities, especially the public ones, play an important role in the formulation and implementation of public policies on sustainability. Furthermore, it is important training people who want to work in the construction of sustainable societies (IARU 2014). In special, young people are considered the main drivers for a more sustainable future, particularly students who will occupy high offices (Green 2013; Zsóka et al. 2013). The University is a public institution intimately linked to the country's project (Santos 2005). Thus, "a sustainable campus should be environmentally healthy, with a prosperous economy through energy and resource conservation, waste reduction and with efficient environmental management" (Alshuwaikhat and Abubakar 2008). Then, it should promote equity and social justice, exporting these values to the community" (Alshuwaikhat and Abubakar 2008). Otherwise, as an organization, the sustainability of a university is related to operational issues comprehending energy, water consumption, emissions, waste management, materials, food services, green spaces and transportation (Brinkhurst et al. 2011; Suwartha and Sari 2013).

In this aspect, the universities, including their infrastructure, in a simplified way, simulate the urban centers' buildings. They are characterized for single opportunities to trigger sustainability practices through many dimensions, individually or in nexus, such as education, research, outreach activities, direct campus operations, and community involvement, applying environmental management systems, public participation and social responsibility (Cortese 2003; Alshuwaikhat and Abubakar 2008; Fadeeva and Mochizuki 2010; Leal Filho 2011; Müller-Christ et al. 2014). Based on the relevance of them, a great number of universities around the world have committed to this responsibility to achieve sustainability in their institutional

practices (Lozano et al. 2015), highlighting the last two decades (Ceulemans et al. 2011; Lozano et al. 2013; Shephard 2008). These are the cases of University of Copenhagen (UCPH) and University of São Paulo (USP).

1.2 The University of Copenhagen

UCPH is a public university, under the national responsibility. As well as the city of Copenhagen, it is considered a model of Sustainability, embedded in the culture of the town. The structure of the buildings, the transport of people, the technologies used, the mechanism of waste disposal, and the resource use are important points which should be analyzed in a manner of improvement in the sustainability sector. Statistics provided by the UCPH Sustainability Report indicate a significant improvement over the years in all sectors of the institution (Green Campus 2014). This is a result of initiatives promoted by the university and the city.

Moreover, the University has ambitious goals to become the most sustainable university in the world, with the project "Green Campus 2020: Strategy for Resource Efficiency and Sustainability" (Green Campus 2013). Despite this, there are remaining challenges, which include physical and laboratory facilities, as well as sustainable culture (Green Campus 2013).

1.3 The University of São Paulo

USP is a public university, maintained by the State of São Paulo government, and is considered the major institution of higher education and research in Brazil (USP 2016).

This University has the Superintendence of Environmental Management (SGA —"Superintendência de Gestão Ambiental" in portuguese), whose main goal is to incorporate and institutionalize the principles and sustainable practices in university's management. In this way, it becomes an example for students and society, encouraging actions and projects that aim a healthy environment, promoting environmental security within the campuses, stimulating the rational use of resources, educating towards sustainability, seeking to build a sustainable university in a shared management (SGA 2016).

2 Goal

The purpose of this work is to establish relationships between the realities of two public universities in different contexts, the University of Copenhagen (UCPH) and the University of São Paulo (USP) about their practices involving sustainability.

3   Methodology

In an attempt of exchanging experiences in the field of Sustainability, internships were taken at both universities, UCPH and USP, from 2015 to 2016. The first co-author of this study, started her internship at USP (Brazil) in August, 2015 at the Superintendence of Environmental Management with the USP Recicla's project called "Sustainability, environmental education and waste management at the students' houses in the campus of Ribeirão Preto at the University of São Paulo". In this period this person was in contact with SGA's activities and plans for developing environmental policies to USP.

In December of 2015, the first co-author got a scholarship, supported by USP Innovation Agency, for an internship at UCPH (Denmark) for three months. Analysis and careful observations of the practices, strategies, and goals of the UCPH were held, as well dialogues with universities' managers [Faculty of Health and Medical Science, Faculty of Science, Faculty of Humanities, and Faculties of Law, Social Science and Theology]. Materials produced by this University in the area of sustainability and environmental education were also analyzed.

Furthermore, from April to December 2016, this person was an intern at SGA again, now, by supervision of the second co-author of this article. These experiences allowed both authors to gather some data on policies, strategies, and practices about sustainability, from educational materials, reports, books, websites, observations, dialogues in technical visits, and contact with managers, students and staff involved in the actions. These data were treated considering the institutional documents available and the notes taken. We, therefore, tried to establish some comparisons between UCPH and USP. All of these results are presented below. Four actions have been highlighted: (I) Ecological Reserves and Wild Campus, (II) PAP and Green Ambassadors, (III) Waste management, and (IV) Cooperation networks at the end of the section.

4   Results and Discussion

Based on these two experiences, it was possible to identify convergences and divergences between policies, strategies, and practices related to sustainability. Each university has very different contexts, like geographic location, region's culture, economic and social aspects, type of vegetation, biodiversity, community needs, legislation, and city infrastructure. Nevertheless, some similarities could also be seen.

First, both Universities are public: UCPH is a responsibility of the national government, while USP, of the state of São Paulo's government (KU 2016; USP 2016). Although each University has its own policies and characteristics, they are under federal, state and municipal powers, following laws, norms, and measures of these instances. Thus, some of the differences noted between the Universities are

related to policies external to the Universities and not only by avant-garde strategies in the area.

In general, it can be said that UCPH focuses mainly on infrastructure, with emphasis on excellence in energy utilization and management (dialogues with managers and staff; Green Campus 2013; Green Campus 2014). They believe that structural change is capable of delivering better results in the area of Sustainability, being associated with operational activities (Brinkhurst et al. 2011; Suwartha and Sari 2013). Some examples: automatic energy control; monitoring water consumption; solar panels to energy production and to heat the water, buildings with low carbon production (e.g. the Green Lighthouse); investment in equipment with low carbon production, mainly in the laboratories (observations; dialogues with managers; technical visits; Green Campus 2014)]. In addition, UCPH must follow the laws of the municipality of Copenhagen strictly, in order to avoid fines, which would mean extra expenses [e.g. waste management (dialogues with managers)]. This is supported by ambitious goals of Green Campus and relevant alliances with different universities (Green Campus 2014).

Otherwise, at USP, the leading focus was, until 2012, on environmental education issues and waste management, coordinated mainly by the program USP Recicla, forming and advising students, staff, teachers and the external community. Furthermore, the environmental theme has been treated by USP for a long time, in several disciplines, in different faculties, institutes, and in the management of its campuses. However, the University noticed the lack of strategies that would promote the incorporation of the environmental dimension within the institution. Then, in 2012, it was created the Superintendence of Environmental Management (Resolution N°6062/2012) (SGA 2016). So, other programs, projects, and strategies have been implemented since then [e.g. USP Environmental Policy in its 11 sectors (SGA 2016)]. The main purpose of SGA is to plan, deploy, maintain, and promote environmental sustainability on its campuses and research areas of USP. Also, to incorporate the environmental dimension of sustainability across the board in all policies, plans and activities, in the areas of teaching, research, extension and management (SGA 2016). Its goals are towards zero carbon emissions, campus as a lab for cities, and sustainable actions (SGA 2016).

4.1 City of Copenhagen and the University of Copenhagen

Copenhagen is the capital and the most populous city of Denmark with 1,263,698 inhabitants (DK 2015). It is situated in the Zealand and Amager islands and was founded as a fishing village in the 11th century. However, it only became the capital of Denmark-Norway in the 15th century, becoming an important European regional center in the early 17th century. Since the 21st century, Copenhagen has undergone strong urban and cultural development, promoted by investments in its institutions and infrastructure (Bayliss 2007).

The city of Copenhagen is recognized for being one of the most eco-friendly cities in the world. It sets out the ambition to become the first neutral carbon city in 2025 (DK 2015). This objective goes in parallel with the Copenhagen 2025 Climate Plan, a plan adopted since 2009 by the city hall of Copenhagen (DK 2015). One of the medium-term targets was to reduce carbon emissions by 20% by 2015. Fortunately, this goal was achieved by Copenhagen in 2011. And if all the city's efforts are counted since 1995, Copenhagen has reduced its emissions by 50% (DK 2015).

About the CPH 2025 Climate Plan (2012), it consists a holistic plan with a set of specific goals and initiatives within four major areas: energy consumption, energy production, green mobility and initiatives in the field of city administration (CPH 2025 Climate Plan 2012). An example is the increased tax of public transportation and bicycles use, which significantly reduced the traffic jam of the city and improved the population's health. Since 2005, one billion Danish kroner have been invested in cycle paths and high-traffic bicycle paths infrastructure (Cathcart-Keays 2016). One of the results is that 45% of the inhabitants of Copenhagen use their bikes daily to and from work or school, also increasing the living conditions of its residents (Henley 2017).

In addition to these developments, the city also has a climate change adaptation plan (Copenhagen Climate Adaptation Plan). As the city will be affected by global changes, it must be prepared for these changes, which directly interfere with the quality of its residents' life. Regarding measures to reduce CO_2 emissions, Copenhagen has invested in renewable energy sources [e.g. solar and wind power (State of Green 2016)]. These sources account for 27% of the energy used by the country (2014) and wind energy accounts for about 5.6% of that energy production (2014) (State of Green 2016).

Many of these Copenhagen city goals emerged after the oil crisis in the 1970s (Rüdiger 2014). As Denmark is completely dependent on the import of this resource then the country decided to change its direction in relation to energy demand and changed its interests in spite of the environment (Rüdiger 2014). As a result, green measures, such as energy efficiency, renewable sources, waste and resource management, clean air, and sustainable cities have become embedded in Danish practices. Over time, the country realized that economic and environmental policies can go hand in hand (State of Green 2016). Therefore, since 1980, Denmark has grown to become a global leader in the development of new technologies and sustainable solutions, inspiring other nations, companies, and citizens around the world to invest in sustainable ideas (State of Green 2016).

UCPH is the oldest university in Denmark (since 1479) and its administrative structure differs markedly from USP. There is the administration linked to the rectory, with a broader management, with the support of the Campus Service. In addition, each Faculty has its own managers (Campus Service), which are people hired only for the administration of services and buildings. Teachers focus only on teaching and research, and are not as participative in the management of the University since there are other actors in the area (dialogues with managers and staff).

The University has four campuses, the central, the north, the Frederiksberg and the south of Copenhagen. The first comprises the faculties of Theology, Law and Social Sciences, and part of the faculty of Health and Medical Sciences (KU—Introduction 2016). The northern campus is the largest of all, encompassing 14,000 students from the Faculties of Science and Health and Medical Sciences (KU—Introduction 2016). The Frederiksberg campus houses part of the Faculty of Sciences with ample green areas (observation during technical visits). Finally, there is the South campus with 11 thousand students of the Faculty of Humanities (KU—Introduction 2016).

The distances between the campuses are short, being possible to move from one to another by bicycle or by public transport (observation). There are medieval buildings and new ones, such as the Faculty of Humanities, which is only two and a half years old (dialogues with managers). In this way, the needs of each Faculty can vary widely.

4.2 City of Ribeirão Preto and the University of São Paulo

USP is a public institution, whose responsibility is to the State of São Paulo government (USP 2016). It is considered the Institution of Higher Education with better placement in Brazil, with high impact research (QS World University Rankings 2016). It presents seven campuses, located in seven different cities. Because the USP internship belonged to the campus of Ribeirão Preto, this work will focus on the context of the University of São Paulo based on the city of Ribeirão Preto.

The city of Ribeirão Preto is located in the state of São Paulo with 604,682 inhabitants (IBGE 2010) and its name is due to the river that crosses the city (Suarez Lopes 2011). Until the 19th century, the region was populated only by Caiapós, whose food was based on maize and cassava, still living from hunting, fishing, collecting honey and native fruits (e.g. jabuticaba, araçá and passion fruit) (Suarez Lopes 2011). Over the years, however, the region has been dominated by farms (Suarez Lopes 2011).

In 1856, the city of Ribeirão Preto was founded, at a time when the region received many miners who left their lands already exhausted and looked for pastures to cattle (Suarez Lopes 2011). In the early twentieth century, the city began to attract immigrants, who went to work in agriculture, mainly coffee, one of the main sources of income in that period. With the establishment of the Mogiana railway line in 1883, an important development took place in the municipality, which allowed the expansion of the coffee culture. Nevertheless, from 1929, coffee began to devalue, while the industrial sector began to expand (Suarez Lopes 2011).

Economic growth needed cultural and academic development. In this context, the Faculty of Medicine linked to USP was established in 1948 (RP 2012; USP-RP 2016). Today, about 20,000 people use the campus every day, and there is an offer of 25 courses in three areas: exacts, biologics and humanities (RP 2012).

The original and predominant vegetation of the municipality is the Atlantic Forest and Cerrado (Marques 2007). The city has two conservation units, Morro do São Bento Environmental Preservation Area (APA), and the Ecological Station of Ribeirão Preto. Urban, industrial and crop expansions, such as coffee and sugar-cane, were responsible for the elimination of a large part of the native forests that occupied about 80% of the State, now reduced to 13.94% of the original area (Ceeflorusp 2016).

4.3 Brief Comparison Among Copenhagen and Ribeirão Preto as well UCPH and USP

Copenhagen has a high level of social equity and HDI, within a small country (Denmark) with a low population (about 1 million), and indexes of biodiversity lower than in Brazil. Also, there is a culture of separating waste in many categories. Ribeirão Preto has a floating population almost equal to the number of inhabitants of Copenhagen, because it attracts many individuals to its commerce, industry, and universities. Its country is considered a mega biodiversity place, but with high social inequities. The city does not have many sustainability incentives yet, such as the absence of "coleta seletiva" ("selective collect of waste"—literal translation) as a municipal service.

Still, both cities present different histories, Copenhagen is much older than Ribeirão Preto, in a country with a shortage of energy sources (coal, oil, waterfalls). This dependence facilitated the implementation of policies for the production of energy from renewable sources. Brazil already has its major supply from hydro-electric plants. This, combined with the high costs of other renewable sources of energy (e.g. wind and solar energy), might have made it difficult to invest in other technologies.

The size of the two universities is quite different. USP has campuses in seven different cities, each one with its own particularities, while UCPH comprehends four campuses in the city of Copenhagen, under the management of two munici-palities Kobenhavn and Frederiksberg. If we compare USP in Ribeirão Preto with UCPH, the number of teachers, employees, and students is not so different, but in relation to biodiversity, it is higher in Ribeirão Preto (there are even areas of permanent protection there). The structure of the administrative organization is different: at UCPH, the Campus Service is responsible for administrative matters, while at USP, teachers and some employees dedicate themselves for teaching, research, extension and administrative issues. The extension is important, especially because of social inequities in Brazil. In relation to the Administration, because they participate in many of the decisions, they may feel more engaged in certain ini-tiatives and might try to engage their students, too. Still, at UCPH, many of the decisions, for example, about sustainable infrastructure, are coordinated only by Campus Service, and thus, teachers are often not so engaged.

4.4 Superintendence of Environmental Management and Green Campus

Both UCPH and USP have entities, the Green Campus and the SGA, responsible for proposing, coordinating and taking care of policies, strategies, and projects on sustainability, respectively. In the case of USP, SGA has a plan from 2014 to 2034 to stand out USP amongst the 100 best universities in the world in the area of Sustainability. These agencies have six challenges in common: (1) engaging as many people as possible, (2) approving projects, (3) obtaining financial support, (4) creating and disseminating content, (5) motivating different managers through dialogues, and (6) developing projects that help to achieve the proposed goals.

On the composition of these two entities, the SGA participants are mainly teachers, and some educators and students/trainees. On the other hand, Green Campus comprehends two employees and one trainee (dialogues with Green Campus and SGA). The people of the last one focus only on sustainability issues of the university, while in the first one, some teachers may be overloaded. However, the diversity of people in SGA can also enrich and facilitate the proposition of ideas, more related to the daily life of the University. Although recent, SGA has been able to develop projects, programs, and policies that positively impact the environment (SGA 2016).

SGA has the Environmental policy in the university, and UCPH has the "Green Campus 2020" strategy. The main goals of the last strategy are divided into six categories: (A) CO_2/climate: a 65% reduction of CO_2 emissions from energy consumption and transport per Full Time Equivalent; (B) energy: a 50% reduction in energy consumption per Full-Time Equivalent; (C) resources: a 20% reduction in overall waste volume per Full Time Equivalent, recycling of 50% of the waste produced, and a 30% reduction in water consumption per Full Time Equivalent; (D) chemicals: procurement and construction without health and environmental contaminants, and reduction of the university's total pollution and chemical environmental impact; (E) organization and behavior: sustainability and resource efficiency in all major decisions and actions, and awareness of UCPH as a sustainable university and sustainability as an everyday practice; and (F) campus as a living lab: development and demonstration of future sustainable solutions on campus (Green Campus 2014).

About the Environmental policy, some documents were elaborated to guide and legitimize social and environmental actions at USP, in order to promote a more efficient environmental management, in accordance with the University's principles (SGA 2017; SGA 2016). The topics covered management, water and effluents, green areas and ecological reserves, sustainable buildings, environmental education, greenhouse gas emissions and polluting gases, energy, wildlife management, mobility, waste and land use, and occupation (SGA 2016). In summary, they aim to promote an integrated environmental management that improves the quality of life of its users and society. Its principles are prevention and precaution, reasonableness and proportionality, transversality of education, interdisciplinarity, transparency,

participation, access to information, shared responsibility, and respect for local specificities.

In the next sessions, four relevant actions for both universities will be analyzed: (I) Biodiversity protection: Ecological Reserves at USP and the Wild campus project at UCPH; (II) Environmental Education: the Socio-Environmental Training Program for technical and administrative employees—PAP at USP, and the Green Ambassadors program at UCPH; (III) Waste Management; and (IV) cooperation networks involving sustainability.

I. Ecological Reserves and Wild Campus

The creation of the USP Ecological Reserves sought to allocate significant remaining areas of native vegetation contained in USP campuses, aiming the conservation, teaching, research, extension and, when necessary, restoration. Most of the ecological reserves are composed of fragments of semideciduous and closed forests, which still maintain considerable native biodiversity, as well as their structural and functional integrity (SGA 2016). These reserves seek to contribute to the conservation of local/regional biodiversity and ecosystem services. Also, to produce knowledge, train human resources, and promote activities of culture and extension, offering services to the community, and serving as a living lab for the elaboration of public policies (SGA 2016). The majority of USP's ecological reserves were created through a decree of the Rectory in 2012 (Santos 2017).

In the case of Ribeirão Preto (SP), originally occupied by semideciduous and cerrado vegetation, currently has 3.8% of its forested area, restricted to a few scattered fragments (Ceeflorusp 2016). So, research for restoration and management of degraded areas is a strategic activity for the conservation of such resources. Thus, between 1998 and 2005, a forest of native species was planted in the campus of USP in Ribeirão Preto (75 ha), which represented a 20% increase in the vegetation cover of the urban area (Ceeflorusp 2016). Of these, 45 ha were used for the establishment of an in vivo gene bank, implanted from seeds of 3450 matrix trees cataloged in 450 forest remnants of the region, aiming to rescue 45 species of semideciduous forest (Ceeflorusp 2016). This bank is relevant for keeping high genetic variability for future restoration projects. After the establishment of the forest, CEEFLORUSP (Center for Forestry Studies and Extension of USP) was established.

Wild Campus is an initiative of UCPH to bring nature closer to people. Ten thousand seeds of Danish native plants were planted to bring life, color, and aroma to the north campus, totalizing 650 m^2 (Science—Vild campus 2016). The idea was to create a different experience amidst the bustling city of Copenhagen and still inspire residents and visitors from these planted areas to further explore the countryside of Denmark. In total, there are about 80 different species of plants in these areas and the selection of the species was assisted by the Center of Macroecology, Evolution, and Climate (Science—Vild campus 2016). There is also the target to conduct monitored visits to these areas, explaining about microhabitats, native plants, insects, and the importance of their conservation (dialogue with Wild Campus' responsible).

In general, the Ecological Reserves seek the conservation of USP's green areas, as well as the restoration of native forest along its ecosystem services. As Wild Campus, it has Environmental education initiatives with students. Wild Campus attempts to make the University greener by bringing native Danish seeds to a recreation space for users of the Science campus.

Thus, the projects cited try to bring together students, teachers, and employees to nature, while collaborating with research and Environmental education. Thus, both initiatives are part of the environmental management, important for a sustainable campus (Alshuwaikhat and Abubakar 2008).

II. PAP and Green Ambassadors

USP had a program called PAP (People that learn Participating—"Pessoas que Aprendem Participando" in portuguese) from 2013 to 2015 in four groups (PAP1, PAP2, PAP3 and PAP4), forming about seventeen thousand employees in periodic meetings and lectures (Meira et al. 2014; Sudan et al. 2015). Inserted in a critical and emancipatory perspective in Environmental Education, PAP aimed to educate the university community environmentally, to expand the insertion of sustainability in university management, and to promote sustainable articulated actions (Meira et al. 2014; Sudan et al. 2015). Based on the capillarity architecture, PAP was committed to mobilizing other groups of the university through theoretical courses and monitored practices (Meira et al. 2014; Sudan et al. 2015).

A relevant point of PAP was that, when employees got together they could motivate each other. Besides, they are a key point because they remain in the University for a long time, while students and researchers have a shorter cycle. This does not mean that the last ones should not be engaged, however, investing in employees' development is a strategic policy (Meira et al. 2014; Sudan et al. 2015), offering stability and continuity in the implementation of programmes on campus (IARU 2014).

On the other hand, at UCPH, there is only an initial orientation for staff, students and teachers in the beginning of the semesters, but future advice are the responsibility of the Green Ambassadors (Green Campus 2014). These are students and volunteer staff who assist the Green Campus in publicizing campaigns and implementing Green Campus recommendations at their workplaces in an attempt to change people's behaviors in their daily lives (e.g. "Green Action" campaign) (Green Campus 2014). The most significant results were achieved in laboratories, where there is high energy consumption by equipment such as freezers and exhaust fans (Green Campus 2014).

Both projects aim to form diffusers of sustainability ideas by the University, that is, people who engage others to have more sustainable practices in UCPH and USP. Both have volunteering aspects, but at UCPH it involves undergraduate and graduate students, researchers, staff, and teachers, while at USP, the priority was permanent employees (dialogues with some Green Ambassadors, Green Campus staff, and PAP's responsible). Training people for sustainable practices fostering a culture of environmental awareness is imperative (IARU 2014), and UCPH as well USP are working on it.

III. Waste Management

Ribeirão Preto does not have a selective collection of waste by municipal government, while in Copenhagen the legislation is rigorous about this, and the more people separate their waste, fewer costs they will have. Thus, UCPH follows these guidelines by presenting a great number of containers in their colleges, according to their needs, and it seeks to inform its users about the correct separation. For instance, at the Faculty of Health and Medical Science, there are about 20 kinds of separation [e.g. rocks, laboratory glass, glass, common paper, confidential paper, soft and hard plastic, electronic material, iron, organic waste, lamp, wood, soil, shelves and garden waste (data provided by the Faculty's staff)]. At USP in Ribeirão Preto, there is a division between recyclable and non-recyclable waste, the first one collected by a cooperative of Ribeirão Preto (Mãos Dadas), which has a partnership with USP (information provided by one of USP Recicla's representant).

In addition, on the subsequent destination of recyclable waste, at USP, it goes to a cooperative and then, to a recycling company. In Copenhagen, the collections are carried out by the recycling companies of different categories of materials. Thus, there is a stimulus for the city's own project to improve this system of separation more and more. Still, through dialogues with different actors, it was possible to observe high credibility about the recycling system.

Regarding solid waste, USP has projects inside USP Recicla to implement composts in order to reduce the volume of waste that goes to the landfill (observations in technical visits). However, at UCPH no compost plans were reported on the campuses, but two managers said that the city has a project to collect food waste for the production of fertilizers and biogas (dialogues and observations during technical visits).

About the reuse of materials, USP Recicla distributes mugs every year for its newly enrolled students, while at UCPH, employees have mugs in their offices. Moreover, there are plans for Green Campus Students to talk to canteens to reduce the prices to whom brings his/her mug. These are simple initiatives, but, in the future, they can bring significant results to the planet. At USP, there are also exchange shelves, which stimulate its users to exchange objects to other people, reducing the purchase of new products and the generation of waste (Sudan et al. 2007).

All the cited initiatives are linkage to sustainability in the campus, involving energy and resource conservation, waste reduction and efficient environmental management (Alshuwaikhat and Abubakar 2008).

IV. Cooperation Networks

Both universities belong to university networks, in which, at some point, are linked to sustainability theme. UCPH is part of a local network, COSI (Copenhagen Sustainability Initiative); a regional one, the NSCN (Nordic Sustainable Campus Network); and two global networks: the IARU (International Alliance of Research Universities) and the International Sustainable Campus Network (ISCN) (Green Campus 2016). On the other hand, USP participates in a regional network,

ARIUSA (Alianza de Redes Iberoamericanas de Universidades por la Sustentabilidad y el Ambiente); and it is part of global alliances the UI GreenMetric, the IUSDRP (Inter-University Sustainable Development Research Program), the WC2 Network, the GUPES (Global Universities Partnership on Environment for Sustainability) and the ISCN (SGA 2016).

Such international cooperation is very important since it is a relevant way of exchanging experiences between universities, which have similar local and regional contexts. Furthermore, the universities in these networks can develop projects together and exchange students, staff and teachers to learn from each other's experiences. An essential point, then, is that universities should take advantage of their participation in these networks in order to improve themselves. Among the actions of international cooperation, stands out USP participation in the project "Definition of indicators of evaluation of the sustainability in Latin American Universities", coordinated by Autonomous University of Madrid, in 2012, in the ARIUSA network. Another instance was the Green Guide elaborated by the IARU (available in http://issuu.com/sustainia/docs/iaru_green_guide?e=4517615/9654178), which is part of the challenges and opportunities for universities in the field of sustainability, with a special focus on environmental issues. The aim was to form the actors of the future and to inspire other universities to become more sustainable.

Therefore, these networks have favored the dialogue and the exchange of experiences between the universities in the world, theoretically and practically, and the insertion of USP and UCPH in the scenario of sustainable universities. Moreover, they have contributed to inspiring other universities in this way, fostering a culture of environmental awareness. This "is why sustainability program leaders need to locate passionate individuals in a variety of campus positions, and then engage them in projects, policies, and operational initiatives (…)" (IARU 2014, p. 11).

Our study analyzed some topics about the field of action in the sustainability of UCPH and USP, but other issues could also be investigated in the future, such as events about sustainability, water management in Universities, and sustainability education in University *curriculum*. We also highlight the relevance of including people's participation in universities' sustainability actions, aiming to engage staff, students, teachers and the community around, creating spaces of reflection and learning.

5   Conclusion

This paper is an initial panorama of how sustainability has been incorporated in public universities in different contexts. We found divergences and convergences among USP and UCPH, which were analyzed considering the context of each University, the action of the sustainability offices, the strategies for biodiversity protection, environmental education, waste management, and the networks related to sustainability. In general, the main focus of the UCPH has been on infrastructure

and management, associated with environmental education, while at USP, until 2012, the environmental education and waste management were the main targets by USP Recicla. However, other plans, programs, and strategies have been incorporated in the Institution by the SGA since its creation. We highlight the importance of a dynamic relationship with universities networks, and strategies for communication, such as continuous reporting, and the promotion of workshops. These attitudes are important for inspiring other universities to adopt plans, programs and projects aiming sustainable actions, and for individuals' education in the society, creating people concerned with sustainability aspects in an integrated view. An analysis of how the context of the University, like the culture and the legislation of a country or municipality, strongly influences its strategies was also carried out. There are still challenges for higher education institutions to integrate sustainability in education, research, outreach activities, direct campus operations, and community involvement; which all can be correlated to financial predicaments and barriers to behavior change. Nevertheless, UCPH and USP are seeking to improve their practices and plans in sustainability.

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