Abstract
Universidade Federal of Rio Grande do Norte - UFRN is an institution of 43,000 students, 5,500 professors and more than 200 courses. Was decided during 2018, by the president Ângela Paiva, the adoption of Sustainable Development Goals (SDG). In Brazil, is very important one university lead the process of adoption of the SDG, sharing examples and presenting strategies to guide other universities to follow the same path. The UFRN can be the university leader of group to invite other academic institutions to adopt SDG. The UFRN is part of a league: ANDIFES. In this group will be also encouraged other universities to adopt SDG. Brazil presents more than 2,400 institutions of higher education. The universities can be seen an important environment to research and establish strategies to promote the SDG. It is also very important the participation of students in the process of implementation of the Agenda 2030. This research was done by post-graduate students invited to reflect about actions related to SDG possible to be done by UFRN. A committee evaluated the following proposals of SDG actions to UFRN: SDG 1: Empower poor communities to pursue power in decision process, plan and implement activities to combat poverty. SDG 2: Promotes actions to reduce food waste in university restaurant, stimulates family farmers and urban farming as food suppliers. SDG 3: Encourages physical activities for academic community, better communicate the actions to support health and adopt new healthy restaurant menus with balanced meals. SDG 4: promotes and manage the graduate and post-graduate courses considering the improvement in terms of education quality. SDG 5: Stimulates the equal treatment between all member of the academic community. SDG 6 and 14: Continues the operation of Sewage treatment plant and invest in new clean technologies to reuse. SDG 7: program of energy efficiency and a program to use renewable energy. SDG 8: keep a close contact with the market to identify better jobs opportunities to UFRN students. SDG 9: Promotes innovation and technology transfer to the market. SDG 10: Establish a fair treatment between all UFRN students and support popular movements. SDG 11 and 12: Promote more debate and research about sustainable cities and search to apply sustainable guidelines to UFRN campuses. SDG 13: Develops a manual of best practices. SDG 15: Improvement of recycling activities. SDG 16: Engage the academic community with the decision process. SDG 17: Develop Triple Helix
strategies strengthening ties integrating university, economy and government. In this research was possible identify a useful approach to build new competencies associated with Sustainable Development Research, Education, and Practice in Brazilian universities. Many considerations related to SDG can be applied to international and global academic institutions.

1 Introduction
Universities can be important forum for Sustainable Development Goals (SDGs). Universities would apply SDGs and also be a trampoline to spread the awareness among students, professors and society.

2 Methodology
This research is a case study. The case study inquiry, according to Yin (2000): 1) copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result; 2) on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result; 3) benefits from the prior development of theoretical propositions to guide data collection and analysis. Was considered the Sustainable Development Goals to exam the studied organization (UFRN).

3 Universities in Brazil and the relevance of SDGs
In Brazil, the Associação Nacional dos Dirigentes das Instituições Federais de Ensino Superior no Brasil – ANDIFES (National Association of Leaders of Federal Institutions of Higher Education in Brazil) is committed to share the knowledge about the promotion of the Sustainable Development Goals among Brazilian universities. ANDIFES represents 67 academic institutions.

Was created in Brazil was at June 6th, 2017, the Rede ODS Universidade Brasil (SDG Network University Brazil). The Network presents the participation of institutions as: Universidade Estadual do Piauí - UEPI, Universidade Estadual de Goiás - UEG, Universidade Metodista de São Paulo, Centro Universitário Tabosa de Almeida - ASCES-UNITA and Universidade Federal da Paraíba - UFPB. The next photo registers the presence of some representatives and presidents from some Brazilian universities.

Figure 1. Celebration of creation of Rede ODS Universidade Brasil

Since the creation of Rede ODS Universidade Brasil (SDG Network University Brazil) and the interest of Associação Nacional dos Dirigentes das Instituições Federais de Ensino Superior no Brasil – ANDIFES (National Association of Leaders of Federal
Institutions of Higher Education in Brazil) the Brazilian universities are more aware about the SDG. ANDIFES is also part of Comissão Nacional ODS (National Committee of SDG). There is a good expectation about the SDG be shared between Brazilian universities mainly from 2018. Actions related to the Sustainable Development Goals (SDG) operated by the specific case of Universidade Federal do Rio Grande do Norte - UFRN were registered in the next topic.

4 UFRN
This research is focused in the experience of Universidade Federal do Rio Grande do Norte. The institution in 2018 is celebrating 60 years of operation. In the next photo can be seen the celebration of the birthday during June, 2018.

Figure 2. Celebration of UFRN 60th birthday

Universidade Federal of Rio Grande do Norte - UFRN is an institution of 43,000 students, 5,500 professors and more than 200 courses. Was decided during 2018, by the president Ângela Paiva, the adoption of Sustainable Development Goals (SDG).

5 Results: examining the actions of UFRN related to SDGs

It is possible to identify actions of UFRN connected with Sustainable Development Goals (SDG). Related to the operation of some Sustainable Development Goals, some initiatives can be mentioned in the next topics.

Goal 1 - End poverty in all its forms everywhere
In this research is registered the presentation of the UFRN' president Ângela Paiva, during the event UNIVERSIDADE DO FUTURO: Desenvolvimento tecnológico e Inovação (UNIVERSITY OF THE FUTURE: Technological Development and Innovation) happened at June 6th, 2018.
In the picture above, the UFRN considered the goals 1, 3, 6, 10 and 11 associated with Attention, promotion and Health Rehabilitation; Degenerative Diseases; Evolution, cognition and behavior; and Public Health. And 1, 2, 4, 5, 8, 10, 12 and 16 associated with Language, (culture, society and politics), Education, inclusion and Social and Human Development.

Related to Goal 1 - End poverty in all its forms everywhere, some possible guidelines are:
1 - Ensure fair trade and ethical supply chains. This would be operational through connection between familiar farmers suppliers and the university restaurant.
2 - Investment policies that promote environmental, social and governance principles;
3 - Provide support structures for students living in poverty, such as scholarships and assistance packages;
4 - Develop mechanisms capable to empower underprivileged individuals and communities in order to influence change in the distribution of power;
5 - Plan, implement, evaluate and replicate activities that contribute to poverty reduction;
6 - Evaluate, participate and influence the decision-making process on strategies for the management of local, national and international companies related to the generation and eradication of poverty;
7 - Propose solutions to solve the systemic problems related to poverty;

Lectures and trainings with Habitat Marte alumni to support communities fighting against poverty, highlighting social technologies that had been developed and in operation at the research station. The social technologies developed in Habitat Marte help to combat poverty when some results can provide guidelines to lower-cost housing.

Goal 2 - End hunger, achieve food security and improved nutrition and promote sustainable agriculture
In UFRN can be found research about sustainable agriculture skills and be responsible with meals consumption. The research is developed by Nutrition Department. Some other possible actions related to Goal 2 – End hunger are:
1 - Promote actions to rationalize food in the university restaurant in order to reduce food waste;
2 - Serving meals in the university restaurant with sufficient portions and affordable prices;
3 - Stimulate the development of family agriculture with poor communities;
4 - Stimulating the development of agriculture in urban environments (eg building roofs, urban gardens, etc.);
5 - To promote university extension actions in the promotion of organic fairs, exchanges of experience among small farmers, courses and development of new techniques of cultivation in the university campus;

**Goal 3 - Ensure healthy lives and promote well-being for all at all ages**
In UFRN there is many experiences related to promotion of wellbeing. Are stimulated the practice of physical exercises of members of the community in the scope of the University. In the University there are spaces for physical activities as a swimming pool. The are some suggestion about some possible activiites:
1. Exercises by public servants and students supervised by department of physical education;
2 - Promote actions to raise awareness of health care as well as preventive and community education actions through health departments;
3 - To stimulate by educational actions healthy and balanced food practices;
4 - Develop actions to avoid the stress;
5 - Promote educational preventive actions in the fight against alcoholism, smoking and drug use in general;
6 - To stimulate the practice of actions of meditation and relaxation;
7 - Stimulate cultural and leisure practices aiming at socialization between the community and the university environment;

**Goal 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**
Activities developed by some professors of UFRN, has collaborated with the promotion of Quality Education (SDG 4), as can be seen in the activities developed by professor Julio Rezende, from Industrial Engineering Department. The referred professor operationalizes the research station Habitat Marte where is received students from public schools, as can be seen in the next photo.

![Figure 4. Students visiting Habitat Marte](image)

Habitat Marte is an initiative of education associated to space, science, technology, engineering and mathematics (STEM). The previous image registers students from Floriano Cavalcanti State School, from Natal, Rio Grande do Norte state visiting the facilities of the research station Habitat Marte. The visit happened during June 14th, 2018.
Some actions were imagined to promote an education of quality in UFRN. It is considered a key-issue permanently evaluates how education had been promoted and how is perceived by students and general community. Some other possible actions are:
1 - To train, sensitize and permanently mobilize professors, students and staff of technical-administrative staff and service providers (canteens and others);
2 - Include in the pedagogical projects contents of environmental sustainability;
3 - Develop and publish materials on environmental sustainability;
4 - Promote training courses for environmental managers;
5 - Foster and develop research and extension projects with the theme of environmental sustainability;
6 - Collect and build environmental indicators;
7 - Create an operational tool for analysis and monitoring of sustainability;
8 - Establish carbon neutralization system;

Goal 5: Girls empowerment through science and showing opportunities of scientific careers
The empowerment of girls are strategic to the future. Some actions related are:
1 - Stimulate the equal treatment between individuals in the university community independent of gender and sexual choice;
2 - To promote affirmative actions of insertion of individuals of the LGBTI community (lesbian, gay, bisexual, transvestites, transsexuals and intersex people) in the university community;
3 - to value the participation of gender in social disadvantage such as women and LGBTI community in actions developed in the university such as research groups, academic centers, administrative support scholarships, academic and administrative councils;
4 - Stimulate the debate about the greater participation of women and individuals of the LGBTI community in the daily life of the university community.

Goal 6 - Ensure availability and sustainable management of water and sanitation for all
In UFRN there is a system for the water treatment. The sewage treated is used to irrigate the soccer field and irrigate the yards. The Station of Wastewater Treatment (Estação de Tratamento de Efluentes – ETE) can be seen in the next Figure.

![Figure 5. Estação de Tratamento de Efluentes – ETE – UFRN.](image)

Some possible actions developed by UFRN about save water are:
1 - Adopt equipment that makes better use of water (eg, taps with temporal control of use, economic discharges of water, etc.)
2 - Switch off the tap while washing hands;
3 - Regularly perform the maintenance of the hydraulic installations;
4 - Check faucets regularly to avoid wasting;
5 - Clean food waste before washing dishes and pots;
6 - Promote education aimed at avoiding the waste of water;
7 - To stimulate the reuse of rainwater in discharges and the like;
8 - Improve the basic sanitation system, treatment and reuse of waste water.

**Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy for all**

In terms of promote the better use of the energy in UFRN, in this research is suggested some actions:
1 - Develop an Energy Efficiency Program;
2 - Disconnect computer monitors when not used;
3 - Regulation, sizing, cleaning and maintenance of air conditioning;
4 - Study of installation of photovoltaic panels;
5 - Revision of electrical installations;
6 - Disconnect electrical equipment and lighting fixtures at the end of activities;
7 - Turn off lights at times with sufficient sunlight;
8 - Assess the real need for air conditioning;

UFRN, as a science and technology institution, it is a developer of many research developed in electrical engineering post-graduate program connected with energy field. Energy research is an important topic to UFRN. In the next topic, the president of UFRN, shows how energy science and technology is also linked with others SDG.

![UFRN presentation about SDG.](image)

In picture the above, the UFRN president Ângela, considered the goals 7, 11, 12 and 13 associated with energy and the research developed in UFRN related to oil, biofuel and renewables. Not was identified in UFRN none solar panel. Invest in renewable energy in UFRN is an important guideline.

**Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all**

Some possible actions that would developed by UFRN associated with Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all are:
1 - Align employment, training and regulatory policies consistent with the commitments of equity, access and employability and income targets;
2 - Provide adequate financial assistance systems and scholarships to the needy students;
3 - Monitor employment opportunities and career management of students through a Career Management Center established on campus;
4 - Establish partnerships with entities that offer internships and internships such as Casa da Industria, CIEE and others;
5 - Implement environmentally responsible socioeconomic acquisition policies and procedures, influencing the supply chain;
6 - To critically question the role of economic growth in society.

The Goal 8 it is associated with organize debates about how knowledge about space and Mars can promote good scientific, work and employment opportunities.

**Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation**

Innovation it is one of important elements to promote economic development that guarantees opportunities to businesses and creation of jobs. Entrepreneurship is an important ingredient to promote sustainable industrialization and a service economy. In the next photo, the president of UFRN shows how the activities developed by UFRN would collaborate to innovation.

![Figure 7. UFRN presentation about SDG.](image)

In the picture above, the UFRN considered the goals 9, 11 and 17 associated with Biotechnology; Complex systems; Aerospace Science and technologies; Information and Communication Technologies; and nanotechnologies and advanced materials. And 6,13 and 14 associated with Biodiversity and Sustainable Development.

Some other actions related to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation are:

1 - Test and monitor innovative solutions to improve campus operations;
2 - Commit to building a sustainable and resilient infrastructure that provides wellbeing and minimizes environmental impact;
3 - Ensure improvements in existing buildings by increasing their efficiency and adopting clean and environmentally sound technologies; 
4 - Commit to sustainable and reliable information and communication technology processes and services.

It is pertinent to reflect, according to Goal 9, how the research developed in UFRN can generate innovations and new products that would generate revenues to the university and also companies. Associated with UFRN, there is the Foundation FUNPEC that deals with the market and understand how applied research of UFRN can be solutions to demands of industry. This is a good way to contribute to an innovative economy. In terms of these UFRN had important collaboration with Petrobras (Brazilian oil company) establishing different contracts of research.

Goal 10 - Reduce inequality within and among countries
It is considered strategic for UFRN international cooperation, mainly developed by masters and doctoral programs. International cooperation is a way to permits an equal condition to produce results in science and technology results. It is strategic for UFRN had opportunity to discuss trend topics with academia worldwide. In UFRN there is the Department of International Affairs where is designed Memorandum of understanding (MoU) with international academic institutions, also legally collaborating with reduce inequality between the countries. Some possible actions that would be developed by UFRN to reduce inequality within and among countries are:
1 - Adopt affirmative actions for socially disadvantaged sectors of society such as blacks, Indians, the disabled, individuals under economic vulnerability, among others.
2 - To establish a secular university where the options of creed and religion do not imply in any discrimination on the part of students, professors and employees;
3 - Support social movements from poor communities that seek equal opportunities by developing mechanisms to promote the reduction of these inequalities;
4 - Enable participation in international meetings to present papers and exchange experiences.

Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable
The Goal 11 is related to encourage research results on social technologies, organic agriculture and water management to be applied in cities and communities. The professor Julio Rezende, from Industrial Engineering Department, had researched human settlements. Rezende had managed the Habitat Marte, a Mars analog research station that tries to simulate a circular environment. According to Rezende, Lago and Teles (2018), the reflection about Mars analog settlements presents a high contribution of analog habitats. In both planets, Mars and Earth, it is fundamental consider elements of sustainability pursuing to be self-sustainable in those environments. Some possible activities associated with make cities and human settlements inclusive, safe, resilient and sustainable that would be developed by UFRN are:
1 - Expand and deliver sustainable solutions to the global challenges the university has developed for the community and industry in general;
2 - Provide safe and affordable housing on campus;
3 - Commitment to the development and investment in the community closest to the university and in other areas of greater influence (when possible);
4 - Allow the use of green space in the boundaries of the campus by members of the local community;
5 - Ensure that the campus remains always safe, environmentally friendly and provides accessibility to all levels of mobility;
6 - Implement best practices of pollution control (including air), in addition to waste management processes and policies;
7 - Collaborate with the municipal and state government to advocate for greater access to sustainable transportation systems, including public transportation and bicycle paths.

**Goal 12 - Ensure sustainable consumption and production patterns**

Departments, as Industrial Engineering, in the studies of engineering of sustainability, are interested to reflect about sustainable consumption and production patterns. The next photo registers a Forum about responsible consumption developed in UFRN.

![Figure 8. Forum about responsible consumption](image)

It is possible affirm, that events and debates about responsible consumption is a good way to promote the awareness about the theme. The event registered above happened during 2017. Some other possible actions are:

1 - Incorporate ethical and sustainability considerations into university purchasing policies, procedures and activities;
2 - Plan, implement and evaluate the activities related to consumption based on existing sustainability criteria;
3 - Develop actions to calculate and reflect on the ecological footprint itself;
4 - Create a student company (juniors companies) that produces and sells sustainable products;
5 - Carry out dramatizations that deal with different roles in a trading system (producer, advertiser, consumer, waste manager, etc.);
6 - Watch short films / documentaries to help the university community understand the patterns of production and consumption (eg, "The History of Things" by Annie Leonard);
7 - Develop and execute action projects (youth) related to production and consumption (eg fashion, technology, etc.).

**Goal 13 - Take urgent action to combat climate change and its impacts**

Climate change is one of main research topics in Universidade Federal do Rio Grande do Norte. Registers the operation of Geoprocessing Laboratory (Geopro) equipped with a Geodetic Monitoring Network that promotes satellite analysis and altimetry data, to develop research works, through the use of Coastal Modeling Geotechnologies and to create methods for social and urban development. The environmental study shows its usefulness in the planning of situations, considering the necessity for having land
altitude reference in scenarios of climate change. To work with flooding it is important to identify the altimetry using Digital Elevation Models of the terrain, which means the design of how the representation of the real was formed in a graphic scale (UFRN: 2018).

Some possible actions associated with climate change that can be done by UFRN:

1 - Development and adoption of a "Guide to Sustainable Good Practices" for the university;
2 - Research and implement a set of actions that aim to promote public policies of climate protection;
3 - Identify and support climate-friendly economic activities;
4 - Develop research to identify dangers related to climate change that lead to disasters such as droughts, climatic extremes, etc., and their unequal social and economic impact within families, communities and countries, and between countries;
5 - Generate research for prevention, development of mitigation and adaptation strategies and their connections to disaster response and disaster risk reduction;
6 - Analyze different scenarios of climate change with respect to their previous assumptions, consequences and paths of development;
7 - Carry out a dramatization to estimate and feel the impact of phenomena related to climate change from different perspectives;
8 - Develop and execute projects of action or campaign related to the protection of the climate;

Goal 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development

UFRN develops important studies related to the oceans and marine resources. It is regularly common studies related to Environmental Sensibility Mapping in Rio Grande do Norte marine coast and estuaries, such as Potengi river. Neighboring coastline through remote sensing data, collecting, treatment and integration of the geomorphologic, oceanographic (temperature, salinity, density, direction and intensity), meteorological (wind speed and direction) and high resolution seismic (bathymetry and sonography) data are some studies developed.

Related to the Goal 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development, some possible actions are:

1 - Control and treat the main effluents produced in campuses that generally have cleaning and hygiene products coming from the bathrooms, fats drained by the drains of the canteen sinks and the chemicals discarded in the labs of the laboratories.
2 - Chemical residues such as paints, solvents and oils from construction must be disposed correctly;
3 – Destination and treatment of chemical residues from laboratories and clinics, through specialized companies;
4 - Develop studies on the management and use of marine resources (renewable and non-renewable): global goods and overfishing, quotas and how they are negotiated, aquaculture, algae, mineral resources;
5 - Develop solutions for ocean pollutants: plastics, microspheres, sewage, nutrients and chemicals.

Goal 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Waste management is a key-issues associated to combat the impacts of the institution in the environment. UFRN promotes different actions related to waste management.
is recipients to correct waste disposal. There also are a Facility for Temporary of Waste Storage (Unidade de Armazenamento Temporário de Resíduos – UATR). In this facility the recycled materials are collected and dispatched to a NGO that employs former dumps workers. In Sustainability Lab it is developed actions related to use waste material to create art and useful objects. This experience is associated with industrial engineering department.

Related to combat desertification, the Nucleus of Research in Engineering, Science and Sustainability of Semiarid – NUPECS (Núcleo de Pesquisa em Engenharia, Ciência e Sustentabilidade do Semiárido - NUPECS), in operation in rural area of Caíçara do Rio do Vento, is developed research associated about how to live in arid and semiarid areas. There is a broad kind of possible initiatives related to Goal 15. Some are:
1 – Promotes education associated with waste recycling and reuse in the university campus,
2 - Reutilization of furniture obtained through raw materials that would be discarded;
3 - Management of construction waste. (reuse, recycling);
4 - Sale of obsolete computer equipment at a negligible price to employees;
5 - Implementation of Management Plans for Special Solid Waste and Health Services;
6 – Implementation of chemical, infectious and chemical waste shelters;
7 - Electrical and electronic waste restoration to be donated to institutions;
8 – Promotes good use of selective collectors for segregation of recyclables;

**Goal 16: Publicization about SDGs**

During 2018 was recurrent observe the emphasis presented by UFRN related to Sustainable Development Goals. In the next Figure registers the event of 60th birthday when is possible identify the Goals 10 and 11 associated with the university celebrations.

Some possible actions related to implement the SDGs are:
1 - Develop policies, procedures and plans to ensure the campus is safe for all servers, teachers, students and visitors;
2 - Ensure that adopted policies and procedures clearly indicates intolerance related to contract suppliers known or involved with work exploitation abuse;
3 - Ensure that science, technology and innovation development policies are not applied in the war industry, companies dealing with human trafficking and / or modern slavery;
4. Ensure that the institution’s policies and culture clearly indicate that bribery, corruption, violence, crime and acts of terrorism are unacceptable;
5 - Ensure that all servers, professors and students are informed about their rights;
6 - Involve employees, teachers, students, and other stakeholders in key-decisions of university governance.

**Goal 17: Partnerships for development**

Some actions related to establish partnerships between UFRN and other institutions are:
1. Strengthen interregional and international cooperation in the North-South framework and access to science, technology and innovation by improving the sharing of knowledge on mutually agreed terms, including through better coordination between existing mechanisms, in particular at the United Nations level and a global technology facilitation mechanism;
2 - Fully operationalize the science, technology and innovation developed in the university in the sense of empowering the company society.

The UFRN also can help other partners to build new competencies associated with Sustainable Development Research, Education, and Practice.
Conclusion
This research analyses actions just developed by Universidade Federal do Rio Grande do Norte – UFRN and new opportunities related to implementation of Sustainable Development Goals.
Considered a institution of Science, Technology, Engineering and Math (STEM), the actions of UFRN is a starting point to reflect how the knowledge developed by UFRN can contribute to SDGs.
The Sustainable Development Goals can be considered by UFRN as a guideline to reflect about what the different approaches to contribute to sustainable development and perceive that sustainability is not an appendix, but the essential core of UFRN.
Sustainable Development Goals is a new discussion in UFRN, just starting in 2018, but can see that UFRN can share a lot of knowledge related with it. One example is this research developed by professors and post-graduate students from UFRN, thinking about the institution and the SDGs.
During the research was possible identify larger steps necessarily to be done in terms to implement the SDGs in UFRN. It is suggest the main office of UFRN constitutes a committee to discuss the implementation of sustainable goals in different areas and departments.
UFRN can be a candle among others institution that still not aware about SDGs and the leader of implementation of SDGs among universities.

References
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