Training Package: Transforming Graduate Education for Green and Sustainable Future (T-Green)

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Content

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Chapter 1: National list of professions

1.1. National Qualifications Framework

The National Qualifications Framework (NQF) is a unique reference framework for classifying all qualifications produced within the national educational and training system, regardless of the pathways of entry.

The NQF, in effect since October 1st, 2010 (through Regulation n. º 782/2009, dated July 23rd), replaces the level structure for qualifications established by Council Decision nº 85/368/EEC on July 16th.

The establishment of the NQF, undertaken within the framework of vocational training reform and the creation of the National Qualifications System (as per Decree-Law nº 396/2007), was based on a set of premises:

- The need to integrate and coordinate qualifications obtained within different subsystems of education and training (education, vocational training, higher education) into a single framework;
- The importance of valuing and recognizing competences acquired in non-formal and informal contexts;
- Improving the readability, transparency, and comparability of qualifications;
- Promoting dual certification, especially for secondary level qualifications;
- Ensuring alignment with the European Qualifications Framework (EQF), particularly in utilizing the EQF as a reference tool for comparing qualification levels across different qualification systems from a lifelong learning perspective.

1.1.1. Design and Structuring

The choices made regarding the design and structuring of the NQF aimed to provide clear and objective responses to the identified premises, with the following highlights:

- Scope: The NQF encompasses basic, secondary, and higher education, vocational training, and the processes of recognition, validation, and certification of competences, whether obtained through non-formal or informal pathways.

- Structuring into 8 levels of qualification: These levels encompass all currently existing qualifications within our educational and training system.
- Adoption of a competency-based methodology: Characterizing each level of qualification through learning outcomes signifies a significant shift in how qualifications are conceptualized and described. This approach enables comparability based on skills rather than the learning processes.
- Description of qualifications based on outcomes: Describing qualifications in terms of outcomes provides individuals and employers with a clearer perception of the relative value of qualifications, contributing to the better functioning of the job market.
- Adoption of "knowledge, skills, and attitudes" domains: These domains are used to define learning outcomes for each level of qualification.
- Adoption of learning outcome descriptors from the EQF: These descriptors are used to describe the levels of qualification.

1.1.2. Regulation of the National Qualifications Framework

The publication of Regulation nº 782/2009, dated July 23rd, regulates the National Qualifications Framework (QNQ), and with its implementation starting from October 1st, 2010:

- The implementation of the structure of training levels established by Decision nº 85/368/EEC of the Council on July 16th (published in the Official Journal of the European Communities nº L 19, on July 31st, 1985) is repealed.
- Certificates and diplomas issued prior to the commencement of the National Qualifications Framework's implementation, and whose level of education and training corresponds to Decision nº 85/368/EEC, will remain valid. The respective levels of education and training will correspond to the qualification levels of the QNQ (as per Annex III of Regulation nº 782/2009).

The publication of Dispatch n.º 978/2011, dated January 12th, states that:

- All certificates and diplomas that confer a qualification listed in the NQF (National Qualifications Framework), issued from October 1st, 2010 onwards, must include a reference to the respective qualification level, in accordance with Regulation n.º 782/2009, dated July 23rd.

1.1.3. Descriptors for each qualification level of the National Qualifications Framework

Descriptors for each qualification level of the NQF, according to the abovementioned recommendations, are the following:

Qualification Levels	Corresponding learning outcomes		
	Knowledge	Skills	Competences
Level 1	Basic general knowledge.	Basic skills required to carry out simple tasks.	Work or study under direct supervision in a structured context.
Level 2	Basic factual knowledge of a field of work or study.	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools.	Work or study under supervision with some autonomy.
Level 3	Knowledge of facts, principles, processes and general concepts, in a field of work or study.	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information.	Take responsibility for completion of tasks in a field of work or study. Adapt own behaviour to circumstances in solving problems.
Level 4	Factual and theoretical knowledge in broad contexts within a field of work or study.	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study.	Exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change. Supervise the routine work of others, taking some responsibility for the evaluation and

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			improvement of work or study activities.
Level 5	Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge.	A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems.	Exercise management and supervision in contexts of work or study activities where there is unpredictable change. Review and develop the performance of self and others.
Level 6	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles.	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study.	Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts. Take responsibility for managing professional development of individuals and groups.
Level 7	Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research. Critical awareness of knowledge issues in a field and at the interface between different fields.	Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields.	Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches. Take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams.
Level 8	Knowledge at the most advanced frontier of a field	The most advanced and specialised skills and	Demonstrate substantial authority, innovation,

	of work or study, and at the interface between fields.	techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice.	autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research.

1.1.4. Structure of the National Qualifications Framework

The NQF encompasses primary, secondary, and higher education, vocational training, as well as processes for recognition, validation, and certification of competences acquired through both non-formal and informal pathways.

Qualification Levels	Qualifications
Level 1	2nd cycle of basic education
Level 2	3rd cycle of basic education obtained in basic education or by double -certified routes
Level 3	Secondary education deeds for the continuation of higher-level studies
Level 4	Secondary Education Obtained by Double Certification or Secondary Education Paths Vocated for the continuation of higher-level studies plus professional internship - minimum of 6 months
Level 5	Non-higher post-secrecy level qualification with credits for the continuation of higher-level studies
Level 6	Licenciature/ barchelor degree
Level 7	Master's degree
Level 8	Doctorate

1.1.5. Alignment with the European Qualifications Framework

The European Qualifications Framework (EQF), adopted in 2008 by the European Parliament and the Council (Recommendation of the European Parliament and of the Council, April 23,

2008, repealed by the Council Recommendation, May 22, 2017, on the European Qualifications Framework for lifelong learning), is a common reference framework that allows for matching and comparing qualification systems across different countries. In essence, it serves as a translation/comparison tool for qualification levels from various countries, aiming to make qualifications clearer and more understandable across systems and promoting the mobility of learners and workers between countries.

The EQF does not describe specific qualifications or individual competencies, and each specific qualification should be referenced to the corresponding EQF level through the national qualifications framework.

In the case of Portugal, the referencing process has shown a clear and direct relationship between the levels and descriptors of the National Qualifications Framework and those of the European Qualifications Framework.

Therefore, if an individual holds a level 4 qualification in the National Qualifications Framework, they also have a level 4 qualification in the European Qualifications Framework.

1.1.6. Process of referencing national qualification levels with EQF levels

The process of referencing national qualification levels with EQF levels is supported by the guidelines produced by the Advisory Group for the Implementation of the EQF, established by the European Commission. This group consists of representatives from the member states and European Social Partners. They have adopted a set of 10 criteria and procedures for referencing, which include:

- The responsibilities and legal competencies of all national organizations involved in the referencing process, including the National Coordination Point, are clearly defined and communicated by the competent public authorities.
- A clear and demonstrable relationship exists between the qualification levels of the national qualifications framework (or system) and the level descriptors of the European Qualifications Framework.
- The national qualifications framework (or system) and its qualifications are based on the principle and objective of acquiring learning outcomes. They are also aligned with existing provisions for the validation of non-formal and informal learning and with credit systems, where applicable.

- Procedures for including qualifications in the National Qualifications Framework or describing the positioning of qualifications in the national qualifications system are transparent.
- The national quality assurance system(s) in the field of education and training is referenced to the national qualifications framework (or system) and aligns with European principles and guidelines (as indicated in Annex 3 of the recommendation).
- The referencing process must include the explicit agreement of competent quality assurance bodies.
- The referencing process involves the participation of international experts.
- The national competent body or bodies certify the referencing of the national qualifications framework (or system) with the EQF. Competent national authorities, including the National Coordination Point, should publish a report describing the referencing process and its rationale, addressing each criterion separately.
- The official EQF platform should maintain an updated list of member states that have confirmed the completion of the referencing process, including hyperlinks to completed reports.
- Following the referencing process, and respecting the timelines set in the recommendation, all new qualification certificates, diplomas, and Europass documents issued by competent authorities must clearly state, based on their national qualifications systems, the corresponding level of the European Qualifications Framework for the obtained qualification.

1.2. The National Agency for Qualification and Vocational Education

The National Agency for Qualification and Vocational Education is the National Coordination Point for the implementation of the European Qualifications Framework (NCP EQF) concerning all levels of qualification. Regarding levels 5 to 8 of the National Qualifications Framework structure, this coordination is carried out in collaboration with the Directorate-General for Higher Education.

The European Qualifications Framework - established by the Recommendation of the European Parliament and of the Council on April 23, 2008 - is a common reference framework that allows for easy comparison of qualifications across different countries. The primary aim of the

European Qualifications Framework is to make qualifications clearer and more understandable between different systems, promote citizen mobility, and facilitate lifelong learning.

The main functions of the NCP EQF are to support national authorities in referencing national qualifications frameworks or systems to the EQF and to bring the EQF closer to individuals and organizations.

Access to Professions

The right to engage in economic activities in another Member State is a fundamental right of citizens enshrined in the EC Treaty. However, within the limits set by the rules of the internal market, each Member State retains the legal authority to link access to a certain profession to possession of a specific professional qualification that traditionally corresponds to the qualification granted within its national territory. This situation constitutes an obstacle to the free movement of professionals within the European Union, as individuals qualified to practice the same profession in another Member State hold a different professional qualification, namely the one obtained in their own Member State.

To address this, the European institutions have established rules aimed at facilitating the mutual recognition of professional qualifications among Member States. This is the objective of Directive 2005/36/EC of September 7, 2005, concerning the recognition of professional qualifications. Although this recognition has been facilitated, there is still no single solution in practice within the European Union. You can find Directive 2005/36/EC at the following web address: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:255:0022:0142:PT:PDF

This directive was complemented by a Code of Conduct approved by the coordinating group for Directive 2005/36/EC (a group composed of representatives of the Member States). This code explains good and bad national administrative practices in the recognition of professional qualifications. You can find the code at the following web address:

http://ec.europa.eu/internal_market/qualifications/future_en.htm#docs

Access to and the practice of professions in Portugal are free in accordance with the constitutional principle of freedom of choice of profession. Only in the case of regulated and governed professions are certain access and practice requirements necessary. In Portugal, a regulated profession is understood to be one in which the verification of compliance with

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professional requirements is assigned to a public professional association (Professional Orders), and a regulated profession is one in which access and practice depend on compliance with professional requirements.

Recognition of Professional Qualifications

In cases of regulated or governed professions, the recognition of professional qualifications is subject to compliance with the provisions of Law No. 9/2009, dated March 4th, with amendments introduced by Laws No. 41/2012, dated August 28th, 25/2014, dated May 2nd, and 26/2017, dated May 30th. These amendments transpose Directive 2005/36/EC (Professional Qualifications Directive) concerning the recognition of professional qualifications. The recognition of professional qualifications is the responsibility of each competent national authority, in accordance with the list of identified professions.

In Portugal, the coordinating entity for Directive 2005/36/EC is the DGERT - General Directorate of Employment and Labor Relations.

The European Professional Card

The European Professional Card (EPC) is an electronic certificate that attests that a professional fulfills all necessary conditions to provide services on a temporary and occasional basis in a member state, or that the professional meets all conditions for establishment purposes.

It is a simpler and faster procedure to manage than traditional qualification recognition processes. It is also more transparent, allowing the professional to track their application online and reuse the documents to initiate new requests in different member states.

This procedure is only available for the following professions:

- General care nurse
- Pharmacist
- Physiotherapist
- Mountain guide
- Real estate agent

Regulated and Governed Professions

Decree-Law No. 37/2015, dated March 10th, establishes the regime for access and exercise of professions and professional activities. Law No. 2/2013, dated January 10th, establishes the legal framework for the creation, organization, and functioning of public professional associations.

Access to a regulated profession can only be subject to the verification of one or more of the following professional requirements, to be defined by sector-specific legislation:

a) Legal capacity;

b) Academic qualifications

c) Professional qualifications.

In regulated professions, holding a certificate of qualifications, a diploma, or a certificate of professional qualifications is a sufficient professional requirement for access, unless relevant public interest requires the establishment of additional professional requirements.

The definition of the required professional qualifications for access to a specific profession or professional activity must take into consideration:

a) Higher-level qualifications;

b) Non-higher education qualification frameworks listed in the National Qualifications Catalog (CNQ);

c) Non-higher education qualification frameworks, beyond those provided for in the CNQ, that are part of the offering of technologically specialized courses created by higher education institutions, in accordance with paragraph 2 of Article 3 of Decree-Law No. 781/2009, dated July 23rd;

d) Diplomas or certificates obtained through successful completion of an examination without prior training.

When access to a specific regulated profession depends on holding qualifications provided for in the CNQ, the interested party can obtain it through one of the following means:

a) Training included in the CNQ, in accordance with the regime provided for in Decree-Law No. 396/2007, dated December 31st;

b) Recognition, validation, and certification of competences acquired in other training or personal and professional contexts, according to the provisions of the regulation referred to in the previous clause.

The certification of professional competences should, whenever possible, have the CNQ as a reference and serve as a means of recognizing the possession of knowledge, skills, and competences suitable for a freely accessible profession or required for a regulated profession.

After verifying the fulfillment of the professional requirements for access to a regulated profession, the competent authority issues the respective professional title, in accordance with specific legislation.

1.3. Professions and labor market: Portugal

Professions and access to professionals

The access and exercise of professions in Portugal is free according to the constitutional principle of freedom of choice of profession. Only in situations of regulated and licensed professions are certain access and exercise requirements for the professions. In Portugal, it is meant by regulated profession, the profession whose verification of compliance with professional requirements is attributed to a professional public association (professional orders) and by regulated profession, the profession whose access and exercise depend on the fulfillment of professional requirements.

In situations of regulated or licensed professions, recognition of professional qualifications is subject to compliance with the rules provided for in Law No. 9/2009, of 4 March, with the amendments to Laws 41/2012, of 28 August, 25/2014, of May 2 and 26/2017, of May 30, transposing the 2005/36/CE Directive (Qualifications Directive) regarding the recognition of professional qualifications. Recognition of professional qualifications is responsible for each of the competent national authorities, in accordance with the list of identified professions.

In Portugal, the coordinating entity of Directive 2005/36/CE is DGERT - General Directorate of Employment and Labor Relations. Consult the guide for recognizing professional qualifications: https://ec.europa.eu/docsroom/documents/15032/attachments/1/translations/pt/renditions/native.

The European Professional Portfolio (EPC) is an electronic certificate that the professional fulfills all the necessary conditions to provide services in a temporary and occasional limb state, or that the professional gathers all conditions for establishment purposes.

It is a simpler and faster procedure to manage than traditional qualifications recognition procedures and is also more transparent, allowing the professional to monitor their order in line and again use documents to start new orders in different member states.

This procedure is only available for the following professions:

- Nurse responsible for general care
- Pharmaceutical
- Physiotherapist
- Mountain guide
- Real estate mediator

For more information see the European Commission website (https://europa.eu/youreurope/citizens/work/professional-qualifications/european-professional-card/index_pt.htm).

Decree-Law No. 37/2015, of 10 March (repealed by Law No. 2/2021, of 21 January), establishes the regime of access and exercise of professions and professional activities. Law No. 2/2013 of 10 January (repealed by Law No. 12/2023, of 28 March) establishes the legal regime for the creation, organization, and operation of professional public associations.

There are currently in Portugal 18 professional public associations: the Bar Association, the Order of Architects, the Order of Biologists, the Order of Certified Accountants, the Order of Official Dispatcher's, the Order of Economists, the Order of Nurses, the Order of Engineers, The Order of Technical Engineers, the Order of Pharmacists, the Order of Doctors, the Order of Dentists, the Order of Veterinarians, the Order of Notaries, the Order of Nutritionists, the Order of Psychologists, the Order of Account Official Reviewers, and the order of solicitors and execution agents - 15 of which are members of the National Council of Professional Orders, Association (Private Law) representative of the regulated liberal professions [1].

Labor market information

According to the INE (National Statistics Institute) Employment Survey, Portugal had a total resident population of 10 267 200 in the first quarter of 2022, comprising 47.1 % men and 52.9 % women.

Despite the current context, the active population has risen to 5 209 300 (up 3.3 % compared to the same period in 2021) and the employed population has risen to 4 900 900 (219 300 more jobs – up 4.7 % compared to 2021).

The labour market in Portugal appears to be withstanding the impact of the war in Ukraine and the surge in inflation, and has recorded development in line with economic growth in the first quarter of 2022. However, according to INE data, the rate of under-utilisation of labour was still 11.5 % (for the 16-74 age group), with almost half corresponding to underemployment of part-time and inactive workers available for work but not seeking employment.

The unemployment rate was 5.9 %, its lowest level for 10 years, reflecting the downward trend observed since 2014. However, women continued to be most affected by unemployment (6.5 %), youth unemployment (young people under the age of 25) rose to 20.6 % and long-term unemployment accounted for 46.2 % of the total. Unemployment during the pandemic was higher among young people and the lower skilled, and, unlike total unemployment, this trend has not yet been reversed.

According to the European Labour Force Survey (data for the fourth quarter of 2021), Portugal's activity rate (75.9 %) was higher than the EU-27 average of 74.2 %. The participation of women in the labour market (73.5 %) was also higher than the EU-27 average of 69.2 %. The same is true when comparing those over the age of 65, as the activity rate in Portugal stands at 8.8 %, while the European average is only 6 %.

As far as new forms of work organisation are concerned, part-time work in the country is still quite limited (only 7.1 % of total employment compared to 17.8 % for the EU-27 in the fourth quarter of 2021), and is particularly underused by women (9.2 %) when compared to the average of 28.9 % female employment at EU-27 level.

During the pandemic, there was a significant increase in teleworking practices, which in the second quarter of 2020 covered 23.1 % of the employed population. However, with the return to normal there has been a gradual reduction in teleworking practices over time, with only 10.8 % of the employed population teleworking in the first quarter of 2022 – notably in the services sector, the Lisbon Metropolitan Area and the more skilled professions.

At the end of May 2022, the number of unemployed people registered with the employment services in Portugal stood at 296 394 (a decrease of almost 60 000 since the beginning of the

year). Of these, 43.6 % were men and 56.4 % were women, and 49.1 % of them had been registered for more than a year.

Around 10.2 % of the unemployed registered in mainland Portugal were foreign nationals. 3 060 were EU citizens (particularly from Romania, Italy, Spain and Bulgaria), while 4 550 were from other Eastern European countries (particularly Ukraine – 4 191). More than 17 500 people from Portuguese-speaking countries, particularly Brazil (12 004), Cape Verde (1 456), Angola (1 997) and Guinea-Bissau (1 157), were also registered as unemployed.

In terms of the country's employment profile (INE Employment Survey, first quarter of 2022), agriculture, animal production, hunting, forestry and fishing employed just 2.5 % of the labour force; industry, construction, energy and water employed 24.4 %, and services employed 73 %.

Portugal continued to develop towards tertiarization and digitization, with a particular emphasis on vehicle trade and repair (close to 20 % of employment in services), health and social support services (15 %) and education (13 %).

The hotels and restaurants sector (6.5 %), which accounted for more than a quarter of employment in services in 2019, was one of the worst affected over the last 2 years. However, it appears to be recovering now with growth of 20.5 % in this quarter compared to the first quarter of 2021, representing 45 000 more jobs. Information and communications also saw an increase of 21.7 % compared to 2021, with the net creation of 33 600 more jobs. The same is true for administrative activities and support services, which grew by 30 % (a further 38 400 jobs).

By contrast, the segments of financial and insurance activities and consultancy, scientific and technical activities decreased by 10.2 % and 4.7 %, respectively, compared to the same period in 2021.

The industrial, construction, energy and water sector, which had been on a trend towards recovery since the beginning of 2014, suffered significant losses in 2020 and 2021 in both manufacturing and construction, but now shows some signs of recovery – recording a net employment growth of 16 800 jobs in the manufacturing industry and 6 300 in construction in the space of a year.

Manufacturing industries (which represent 16.8 % of total employment), while not being one of the most dynamic sectors of the Portuguese economy, have nevertheless modernised and focused on innovation. They are showing signs of a capacity for regeneration in response to the

new needs arising from the pandemic. It is worth highlighting, in the current context, that the health cluster, including the pharmaceutical, moulds, plastics, electrical and electronic equipment industries, the textile industry and the emerging biotechnology sector are showing signs of vitality.

Traditional industries, such as footwear and clothing, have also committed to modernization, innovation and internationalization in recent years, resulting in more highly skilled new jobs being created. The year 2021 saw a record amount of textile and clothing exports – 4 % higher than in 2019 – and the footwear industry recorded strong growth in production and orders in the first quarter of 2022, which had a positive impact on employment development in that industry.

Projections for the period 2022-2024 reflect the continued recovery of the Portuguese economy following the shock of the pandemic, albeit in an external environment aggravated by the war in Ukraine.

Where are the available jobs?

In general there has been a reduction in the number of vacancies. There are nevertheless some recruitment needs in the following occupations:

- industry: welders, CNC operators and low-skilled workers for industry, metalworking industry/component assembly; in more traditional segments: seamstresses (in the textile sector) and specialized workers in the footwear industry;
- services: contact center operators and business support center operators (especially with fluent French or Spanish, although other languages may be requested), home helps and hairdressers;
- agriculture: low-skilled workers for agro-industry and some seasonal agricultural and forestry work, specifically in the north-east of the country.

For vacancies in contact centers/business support centers, knowledge of Portuguese may not be necessary since the working languages are as a rule English and the relevant native languages. There may also be opportunities in the information technology sector for people who do not speak Portuguese, provided that they have a good command of English. In other positions, language skills in Portuguese are essential.

The Institute of Employment and Vocational Training, I.P. or Instituto do Emprego e Formação Profissional, I. P. (IEFP, I.P. or simply IEFP) in Portuguese, is a body of the Portuguese State, which operates throughout the mainland and has as its mission to combat unemployment through active employment policies, of which the professional training, professional internships, employment-insertion contracts and other support measures for entrepreneurship and self-employment.

Available positions: https://iefponline.iefp.pt/IEFP/pesquisas/search.do?cat=ofertaEmprego

The **Public Employment Exchange** or Bolsa de Emprego Público (BEP) in Portuguese, was created with the aim of simplifying and making more transparent the various recruitment processes for human resources in public administration. Thus, on this portal you will find job offers in Central and Local Public Administration available to all citizens of the European Union.

Available positions: https://www.bep.gov.pt/default.aspx

Where are the available workers?

Workers are available in the following areas:

- primary and secondary school teachers (in various subject areas);
- nursery schoolteachers and childminders;
- recent graduates in general, particularly social sciences, humanities and business studies graduates;
- architects and urban planners; cleaners; light goods vehicle drivers; administrative service employees;
- miscellaneous personnel (particularly builders, assistants in various sectors and general service ancillary staff).

Graduates generally have language skills in at least English and/or French and/or Spanish. In some of the other professions, however, language skills, if any, can be very basic.

1.4. The Portuguese Higher Education System

The Framework Law on the Education System (Law nr. 46/86, dated 14 October 1986, further amended by Laws nr.115/97, dated 19 September and nr. 49/2005, dated 30 August) establishes the general legal framework of the Education System.

According to this Law, the educational system comprises three levels: basic, secondary, and higher education. Pre-school education is optional and is for children between the ages of three and the age of entering basic education.

Basic Education is universal, compulsory, and free and comprises three cycles, the first cycle lasts for four years, the second lasts for two years and the third lasts for three years. Secondary education is compulsory and it comprises a three-year cycle (corresponding to the 10th, 11th, and 12th year of schooling).

Higher Education Structure

The first steps towards the legal reform of the system of higher education were made in 2005, with the introduction of the new credit system (ECTS) for the cycles of study, mobility mechanisms, diploma supplement, amongst others. Changes were also made to the Basic Law for the Education System to implement the Bologna Process.

The new structure divided into three cycles of studies was created in 2006 and it was completely implemented in Portugal in 2009/2010. Generic qualification descriptors were also defined for each of the cycles of studies, based on acquired competences, as well as the structure for the first and second cycles of study in terms of typical ECTS intervals.

Portuguese higher education includes university and polytechnic education. University education is offered by public and private university institutions while polytechnic education is offered by public and private non-university institutions. Private higher education institutions must be subject to the previous recognition of the Ministry of Education and Science. The higher education system comprises also a concordatary institution.

Bachelor Degree

Both university and polytechnic institutions confer the degree of Licenciado (bachelor). In polytechnic education, the cycle of studies that leads to the degree of Licenciado has 180 credits and a normal length of six curricular semesters of students' work. In certain cases namely those covered by internal legislation or by European legislation, the cycle of studies can have up to 240 credits with a normal length of up to seven or eight curricular semesters of students' work. In university education, the cycle of studies that leads to the degree of

Licenciado has from 180 to 240 credits and a normal length between six to eight curricular semesters of students' work. In the first cycle of studies, the degree of Licenciado is conferred, by universities or polytechnics institutions, to those that, after concluding all the curricular units that integrate the study programme of the Licenciatura course, have obtained the established number of credits.

Master Degree

Both university and polytechnic institutions confer the degree of Mestre (master). The cycle of studies that leads to the degree of Mestre has from 90 to 120 credits and a normal length of between three to four curricular semesters of students' work or in exceptional circumstances, 60 credits and a duration of two semesters, resulting from a stable and consolidated practice in that specific field at international level. In polytechnic education, the cycle of studies that leads to the Mestre degree must ensure predominantly that the student acquires a professional specialization.

In university education, the cycle of studies that leads to the mestre degree must ensure that the student acquires an academic specialization resorting to research, innovation, or expansion of professional competences. In university education, the Mestre degree may also be conferred after an integrated cycle of studies, with 300 to 360 credits and a normal length of 10 to 12 curricular semesters of students' work, in cases for which the access to the practice of a certain professional activity depends on that length of time established by legal EU standards or resulting from a stable practice consolidated in the European Union. In this cycle of studies, the degree of Licenciado is conferred to those who have obtained 180 credits corresponding to the first six semesters of work.

The degree of Mestre is conferred to those that, after concluding all the curricular units that integrate the study programme of the Mestrado course, have obtained the established number of credits, as well as successfully defended in public their dissertation, their project work, or their traineeship report.

Doctor Degree

The Doutor (doctor) degree is conferred by universities and university institutes. The degree of Doutor is conferred to those that, after concluding all the curricular units that integrate the

study programme of the Doutoramento (doctorate) course, when applicable, and have successfully defended their thesis in the public act.

Admission requirements

General regime to accede to higher education National and foreign students wishing to apply through the general regime to the first cycle of studies must fulfill the following conditions:

- Have completed a secondary course or a national or foreign qualification legally equivalent;
- Have set for the entrance examinations required for the degree programme the student wishes to attend and get the minimal mark required (there are higher education institutions that accept foreign tests or exams);
- Have fulfilled the prerequisites for the higher education course the student wishes to attend if required.

Special conditions:

Besides the regime geral (general regime), there are special conditions for top-level athletes, Portuguese citizens on an official mission abroad, national or foreign staff in a diplomatic mission, permanent staff of the Portuguese Armed Forces, and scholarship holders within the framework of cooperation agreements signed by Portugal.

Special Competitions:

- Besides the general regime and the special conditions there are also special competitions for applicants with certain specific qualifications thus allowing new publics to accede to higher education in a perspective of lifelong learning, namely:
- Applicants over 23 years old who have passed a special exam for assessing their capacity to accede to higher education;
- Holders of a specialization technological course (non higher education post-secondary course);
- Admission to higher education institutions is subject to numerus clausus.

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Admission to the Second Cycle of Studies

Those who meet the following conditions may apply to the cycle of studies that leads to the mestre degree:

- Holders of the Licenciado degree or legal equivalent;
- Holders of a foreign academic degree dully recognised as satisfying the objectives identical to the Licenciado degree by the competent scientific body of the higher education institution where one wishes to be admitted;
- Holders of an academic, scientific, or professional curriculum vitae that is recognized as attesting the capacity to carry out this cycle of studies by the statutorily competent scientific body of the higher education institution to which they wish to be admitted.

Admission to the third cycle of studies

Those who meet the following conditions may apply to the cycle of studies that leads to the doutor (doctor) degree:

- Holders of the Mestre (master) degree or legal equivalent;
- Holders of a Licenciado degree who have a particularly relevant academic or scientific curriculum vitae that is recognized as attesting the capacity to carry out this cycle of studies by the statutorily competent scientific body of the higher education institution to which they wish to be admitted;
- Holders of an academic, scientific, or professional curriculum vitae that is recognized as attesting the capacity to carry out this cycle of studies by the statutorily competent scientific body of the higher education institution to which they wish to be admitted.

Classification System

The degrees of Licenciado and Mestre shall have a final classification between 10 and 20 on a numerical scale of 0 to 20, as well as its equivalent in the European scale of comparability of classifications.

The academic degree of doutor is assigned a final classification pursuant to the regulating standards approved by the university that confers it.

1.5. Policy regulation of the relationship between the State and HE institutions

1.5.1. Policy objectives, priorities and development, research strategies

General actual policy objectives and priorities

One of the 21st Government's objectives is to implement policies that make Portugal a science, culture and knowledge society. Investment on these areas is envisaged as a collective project for the future of the country, essential to improve the Portuguese population's skills to the level of the most developed European countries [2]. Such measures include [2]:

- Promotion of vocational and technical higher education courses (cursos técnicos superiores profissionais - CTeSP, which correspond to a short cycle linked to a first cycle of the Bologna Process), offered by the polytechnic higher education institutions (HEIs), and the redefinition of graduate admission criteria for first cycle courses;

- Launch of a widely-participated process regarding the joint discussion on the higher education admission system to broaden the student recruitment base; Approval of the "Commitment to Knowledge and Science: Commitment to the Future" Agenda, between 2016 and 2019. This agenda is designed to create and maintain a system that encourages stable scientific employment with proper working conditions;

- Start of a Programme for the Modernisation and Promotion of Polytechnic Institutes, which comprises a stimulus to R&D activities in close cooperation with local partners at the level of (both initial and specialised) short-cycle training, focussed on the productive and services sectors;

- Development of a mechanism that supports the inclusion of refugees with the aid of higher education institutions;

- Implementation of a National Policy of Open Science that focusses on public and open access to scientific publications and data resulting from research financed by public funding; Approval of a Scientific Employment Stimulus Programme, including the phased replacement of post-doc scholarships with employment contracts and the rejuvenation of research staff;

- A strategy to improve qualifications and scientific development in the area of health:
  - Creation of a National Council of Clinical Academic Centres to stimulate and support the coordinated development of their work;

- o Creation of a working group to design a development plan for clinical and translational research, as well as biomedical research, including the creation of a Clinical Research and Biomedical Innovation Agency;
- Support and creation of consortiums in several fields via cooperation between higher education institutions, research units and public laboratories; Launch of "Public Participation Laboratories" initiative, in close cooperation with the National Agency for Scientific and Technological Culture, Ciência Viva; Restructuring of assessment methodology used for R&D units. The Evaluation of Science and Technology working group was created for this purpose, identifying guidelines to be adopted by the Science and Technology Foundation as part of the 2017 assessment programme (principles and good practices);
- Launch of a plan to rationalise administrative, reduce bureaucracy and simplify procedures in all R&D and higher education institutions;
- A joint effort to launch a "Knowledge for Development Initiative", which is in the process of rebooting "GLOBAL Science". This programme facilitates national involvement in boosting the skills of researchers from Portuguese-speaking countries in Africa.

1.5.2. External quality assurance and accreditation

In 2006 Portugal decided to Create an Accreditation Agency according to the Decreto-Lei n.º 74/2006 de 24 de Março do Ministério da Ciência Tecnologia e Ensino Superior [3] in its Article 53 Accreditation agency:

1. Accreditation is carried out within the framework of the European quality assurance system in higher education, it is incumbent upon an accreditation agency to create and regulate through its own diploma, and it is carried out under the terms established by it.
2. The accreditation agency is an entity endowed with scientific and technical autonomy.
3. The accreditation agency works with higher education institutions, professional associations and other relevant entities.
4. Accreditation is carried out with respect for the scientific and pedagogical autonomy of higher education establishments, under the terms defined by the diploma referred to in paragraph 1.

Since 2007 the external quality assurance and accreditation of doctoral study programmes in Portugal is a responsibility of an independent Agency, the Agência de Avaliação e Acreditação do

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Ensino Superior - A3ES (https://www.a3es.pt/en). Alongside its assessment and accreditation activities of study programmes, A3ES promotes the implementation and certification of institutional Quality Management systems. In 2011, A3ES adopted a model for auditing Quality Management systems with a view to their certification. It includes eight main dimensions: the institutional policy for quality; the effectiveness of the procedures and structures for quality assurance; the relationship between the quality assurance system and the governance and management bodies of the institution; the participation of internal and external stakeholders in the quality assurance process; the information system; the publication of information relevant to external stakeholders; the monitoring, evaluation and continuous improvement of the Quality Management System; and the Quality Management system taken as a whole. A3ES aims to provide guidelines to assist institutions in the design and development of their internal Quality Management Systems according to the profile and specific requirements of each institution.

The evaluation of the education system is carried out by several entities, and their input and object of assessment is very diverse. The organisational structure of the evaluation system includes the National Council of Education and the Ministry of Education's departments which, in terms of their respective organic law, have competences to carry out evaluations of the education system. Regarding the evaluation system, the National Council of Education has the competence to issue opinions, advice and recommendations, specially to make an appreciation of:

- The rules governing the self-evaluation process;
- the annual plan comprising external evaluation activity;
- the outcomes of both in-house and external evaluation processes.

The National Council of Education may request the Ministry of Education to hand over all the information considered necessary as well as recommend that the Ministry resort to using particular evaluation processes (Law no. 31/2002, 20th December). The services or departments of the Ministry of Education are responsible for planning, coordinating and defining evaluation processes, implementing and developing the evaluation of the national education system, identifying relevant information, defining and implementing data-gathering systems and processes. The evaluation of the educational system as well as of the schools is under the responsibility of the following departments: the Inspectorate-General of Education and Science (IGEC), the Directorate General for Education and Science Statistics (DGEEC), and the Institute of Educational Assessment (IAVE, I.P.) (Decree-Law no. 125/2011, 29th December).

The Inspectorate-General of Education and Science (IGEC) has the mission of ensuring the legality and conformity of the actions perpetrated by all the bodies, services and institutions of the governance areas of education and science, technology and higher education, as well as to contribute to the quality of the education system (pre-school, basic, upper secondary and higher education), integrating special modalities of education, extra-school education and science and technology. These tasks are performed through control, auditing, follow-up and assessment activities, proposing measures that aim at improving the education system and participating in the external evaluation of basic and upper secondary schools and in the activities related to this evaluation process. This evaluation activity identifies strong points as well as areas to improve in each school, thus contributing to the design of the school's improvement plans (Regulatory Decree no. 15/2012, 27th January). Higher education quality assurance includes internal and external quality assurance and international evaluation at different levels. Internal quality assurance is conducted by the higher education institutions (HEIs) according to their own regulations in the framework of institutional autonomy [4].

HEIs have their own internal quality assurance systems, which must include the assessment of teaching staff, researchers and non-teaching staff. In the drafting of Law no. 38/2007, 16th August, which approves the new legal framework for higher education quality, via Decree-Law no. 369/2007, 5th November, the Portuguese State established the Agency for Assessment and Accreditation of Higher Education (Estado Português a Agência de Avaliação e Acreditação do Ensino Superior A3ES), whose purpose is the assessment and accreditation of higher education institutions and their study cycles, as well as performing the duties inherent to Portugal's part in the European system of higher education quality assurance [4].

1.5.3. Useful Links

National Qualifications Framework

- Portaria n.º 782/2009 - Quadro Nacional de Qualificações.

- Despacho n.º 978/2011 - Quadro Nacional de Qualificações - Certificados e Diplomas.

- Decisão nº 85/368/CEE, do Conselho, de 16 de julho (publicada no Jornal Oficial das Comunidades Europeias nº L 19, de 31 de julho de 1985).

European Qualifications Framework

- Recomendação do Parlamento Europeu e do Conselho, de 23 de abril de 2008, relativa à instituição do Quadro Europeu de Qualificações para a aprendizagem ao longo da vida (JO, n.º C 111, de 6 de maio de 2008).

- Recomendação do Conselho, de 22 de maio de 2017, relativa ao Quadro Europeu de Qualificações para a aprendizagem ao longo da vida.

- Brochura do Quadro Europeu de Qualificações para a aprendizagem ao longo da vida.

- Infografia "10 anos do Quadro Europeu de Qualificações".

Other relevant documentation

- Cedefop (2019), Overview of national qualifications framework developments in Europe 2019.

- Unesco, ETF, Cedefop (2019), Global inventory of regional and national qualifications frameworks 2019, ETF.

- Cedefop (2017), Defining, writing and applying learning outcomes. A European handbook, Luxembourg: Publications Office of the European Union.

- Cedefop (2016), Application of learning outcomes approaches across Europe. A comparative study, Luxembourg: Publications Office of the European Union.

- Bjornavold, J. e Coles, Mike (2010), Added Value of National Qualifications Frameworks in Implementing the EQF, Cedefop, European Qualifications Framework Series: Note 2.

- Cedefop (2010), The development of national qualifications frameworks in Europe, Working Europe nº 8, Luxembourg: Publications Office of the European Union.

Chapter 2: Student mobility

2.1. National and institutional regulations for credit transfer and recognition

2.1.1. European Credit Transfer and Accumulation System

The European Credit Transfer and Accumulation System (ECTS) is an instrument of the European Higher Education Space to make studies and courses more transparent. ECTS helps students move between countries and to obtain recognition of their academic qualifications and periods of study abroad.

The system allows credits acquired in a higher education institution to be accounted for to obtain a qualification in another establishment. ECTS credits represent a learning based on concrete learning outcomes and their work volume.

ECTS reinforces the flexibility of study programs for students. It also supports the planning, execution and evaluation of higher education programs. It is a central instrument in the process of Bologna, which aims to make national education systems more comparable at international level. ECTS also contributes to greater clarity and ease of use of other documents, such as the diploma supplement in several countries.

ECTS was adopted by most European higher education countries as a national credit system, as is the case with Portugal, and is increasingly used in other areas.

Differences between national higher education systems can give rise to problems related to the recognition of qualifications and periods of mobility abroad. This issue is partly addressed by widening the scope of learning results and the workload of study programs.

ECTS also makes it possible to combine different learning styles, such as the university and in a work context, in the framework of the same study program or through life throughout life.Um ano completo de estudos ou de trabalho equivale a 60 créditos do ECTS.

 In a normal school year, these credits are usually distributed in several smaller modules. A typical "short cycle qualification includes 90-120 ECTS credits. A "first cycle" diploma (or bachelor) consists of 180 or 240 ECT credits.

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Usually, a diploma of 'second cycle' (or masters) corresponds to 90 or 120 ECTs credits. The use of ECTS at the 'third cycle' level, the level of doctorate, varies.

ECTS is applied to support the mobility of students between higher education institutions. Course catalogs, learning contracts and evaluation newsletters contribute to the recognition and transfer of credits obtained by students during a period of mobility abroad. The ECTS user guide describes the system and the way it is used more detail.

2.1.2. Institutional regulative framework and toolkit, templates for credit recognition

For learning mobility to be successful, there needs to be academic recognition and transfer of credits. Credit recognition refers to the process by which an institution certifies that learning outcomes achieved and assessed at another institution meet the requirements of one of the programs they offer. Due to the variety of higher education programs and institutions, it is unlikely that the credits and learning outcomes of the same educational component in two different programs will be identical.

This is even more evident when it comes to considering learning from different learning contexts (such as education and professional training). Therefore, it is modest to take an open and flexible approach to the recognition of credits earned in other contexts, including learning mobility. This approach should be based on compatibility of learning outcomes rather than exact matching of course content. In practice, recognition means that the number of credits earned for compatible learning outcomes in another context will replace the amount of credits originally allocated for compatible learning outcomes by the awarding institution. Institutions should make their recognition policies available in a clear and accessible manner.

2.1.3. Degree mobility

Degree programs may vary in the number of ECTS credits they cover. In the context of recognition of qualifications for further study, discrepancies in the amount of ECTS credits earned after successfully completing a qualification are not taken into account. The focus should be on the program's learning outcomes. This means that, for example, a comparable Bachelor's degree must be recognized for the purposes of assessing admission to a Master's programme, irrespective of whether it is based on 180 or 240 ECTS credits.

2.1.4. Credit mobility

The European Credit Transfer and Accumulation System (ECTS) was developed with the aim of facilitating learning mobility between institutions for short periods of study, known as 'credit mobility'. Although this Guide focuses on accumulating credits, it is important to highlight that ECTS still plays a crucial role in student mobility, simplifying the transfer and recognition of the achievements of students who move. Within the scope of ECTS, some supporting documents play a fundamental role in facilitating the recognition of credits for mobility. These documents include the Course Catalog, Learning Agreement, Transcript of Records and Internship Certificate. They contain detailed information on the learning outcomes achieved, allowing the awarding institution to make informed decisions about recognition and credit transfer.

Before the credit mobility period

When it comes to credit mobility and its recognition, it is essential that the three parties involved - the student, the home institution and the receiving institution or company - reach an agreement on the study abroad program. This agreement must be formalized through a Learning Agreement, which is signed by the three parties before the start of the mobility period. The main purpose of this Learning Agreement is to guarantee the student confirmation that the credits successfully obtained during the mobility period will be recognized.

The Erasmus+ program offers Learning Agreement models for both studies and internships, intended for institutions participating in the program. In addition, the program provides guidance on how to use these templates and establishes specific deadlines that institutions must follow.

It is important to note that the selection of educational components to be completed during the mobility period should not be based solely on equivalence with the components offered by the home institution. Rather, the learning outcomes of the study abroad program as a whole must be compatible with or complementary to the learning outcomes of the home institution's degree program in order for recognition to be awarded after the period of study abroad.

The Learning Agreement should identify an appropriate set of educational components to be taken at the receiving institution, and how these components will be integrated into the home institution's program. The number of credits to be obtained at the receiving institution must be

in proportion to the period of study abroad. The student is generally expected to complete educational components equivalent to 60 ECTS per academic year on a full-time basis.

The host institution undertakes to register the student in the planned subjects, ensuring that these subjects are available during the mobility period. Once the Learning Agreement is signed by all three parties involved, it can be modified later if necessary, provided that all interested parties agree.

After the credit mobility period

The receiving institution must provide both the home institution and the student with a Record History within a reasonably short period, as agreed between the two institutions, shortly after the student's results are released to the receiving institution. When the student successfully completes the set of educational components set out in the Learning Agreement and these results are confirmed by the History of Records sent by the receiving institution, the home institution must fully recognize the agreed number of ECTS credits. These credits must be transferred to the student's program and used to meet eligibility requirements.

The home institution has the responsibility to make clear how the educational components carried out during the mobility were incorporated into the local degree program. If relevant, the conversion of grades must be done (see section 4.3 of the document).

All of this information needs to be fully recorded in a Record History (or equivalent document or database), which will be made available to the student. To ensure transparency, the institution should establish procedures for evaluating educational components for students who are unable to successfully complete them at the receiving institution. It is essential that these procedures are communicated to students in advance.

The Diploma Supplement is designed to provide a clear overview of graduate achievements. As such, educational components that were successfully completed abroad will be included in the History of Records accompanying the Diploma Supplement. These components will be listed with their original titles as well as their translations into the languages in which the Diploma Supplement is issued. In addition, the document will indicate the institution in which the components were taken, along with information about the credits obtained and the grades awarded.

In the case of internships undertaken abroad, the transfer of credits will be documented in the Internship Certificate, which will also be mentioned in both the Diploma Supplement and the Europass Mobility Document. For internships for recent graduates, the recommendation is to use the Europass Mobility Document, since these internships take place after graduation, making the other documents mentioned above irrelevant for this situation.

Institutional rules and regulations

The practice adopted so far has shown that the following effective procedure simplifies the administration of credit mobility and its recognition.

2.1.5. Institutional commitment

It is recommended to establish specific institutional rules to deal with the recognition of other forms of learning, in order to allow the accumulation and transfer of credits through various types of mobility (including for independent students), work experience, virtual learning, prior learning and informal. The institution should clearly define responsibilities for implementing and monitoring credit mobility, ensuring that application procedures and selection criteria for credit mobility are transparent and fair, and that there is an appeals mechanism in place.

Each department or area of study must designate a staff member with formal authorization to discuss the study abroad program with the student, approve and sign the Learning Agreement on behalf of the home institution, prior to the start of the mobility period, and o Registration History after the mobility period. Students should not be required to negotiate academic recognition with staff members not authorized to do so, or with a committee, before or after the period of study abroad. Furthermore, the student should not be required to take additional exams or extra assignments upon his return.

Selection of partner institutions

It is recommended to establish exchange agreements with institutions:

- that present transparent descriptions of their programs, including learning outcomes, credits, teaching and learning approaches, and assessment methods;

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- whose teaching, learning and assessment procedures can be accepted by the home institution without the student having to undertake additional work or examinations;
- that have adequate quality assurance according to the corresponding national systems.

Such arrangements can be made not only with institutions that offer similar programs, but also with those that offer complementary programs.

2.1.6. Integration of credit mobility into programmes

Organizing credit mobility in resumes helps facilitate recognition. Institutions can:

- determine the semester or year in which a period of study abroad would best fit the program (mobility window);
- schedule in that semester/year those educational components with learning outcomes that can be easily achieved abroad (eg international or comparative courses, supplemental/optional courses, dissertation preparation, language courses, internships);
- identify partner institutions where compatible/complementary learning outcomes can be achieved.

Grade distribution

Due to different cultural and academic traditions, European educational systems have not only adopted different national grade scales, but also different ways of employing them, even within the same country, in different areas of study or institutions. Recognizing these differences is crucial, however, making them transparent in the European Higher Education Area is equally relevant. This would allow grades awarded across countries, fields of study or institutions to be properly understood and compared correctly. Students participating in mobility programs have the right to be treated fairly and have transparency about their grades when credits are transferred from one institution to another. This is especially important, as access to further education, scholarships or other benefits may depend on the level of performance achieved.

Transparency on performance levels is also of utmost importance for graduates seeking employment in their own or other countries. In order to ensure a transparent and consistent presentation of individual student performance, each higher education institution (HEI) must

provide - in addition to its national or institutional grading scale and an explanation of this scale - a statistical table of distribution of passing grades in the program or field of study attended by the student (grade distribution table). This table should show how the grading scale is actually employed in the program, contributing to a clearer understanding of student achievement.

The introduction of the grade distribution table took place in 2009, replacing the previous ECTS grade scales (A, B, C, D, E), which are no longer used. Even in situations where transferring grades is not common practice in the academic tradition of receiving institutions, calculating a grade distribution table will help ensure fair treatment for students when they return to their home institution. In addition, it is recommended practice to make detailed information on assessment performance available to internal boards of examiners, promoting greater transparency in the process and indicating any discrepancies that may require further analysis.

Importantly, partners involved in joint double degree programs must agree in advance how they will handle assessment and transfer of grades. Grade distribution tables reflect how the national or institutional scale is applied at the institution - whether in open or selective access systems - allowing comparisons with the statistical distribution of scores in parallel reference groups at other institutions. These tables show the statistical distribution of positive grades (passing and above) awarded in each subject area at a specific institution.

In addition to the grade distribution tables, additional information on success rates at the same level of aggregation can be provided, although this should not be used for credit transfer purposes. To ensure that grade distribution tables are representative, they should be developed in a standardized format for reference groups of students enrolled in degree programs belonging to the same field of study. The reliability of the size of these groups, both in number of students and in number of years considered, is fundamental to guarantee the accuracy of the results.

Performing the calculation of the grade distribution tables is a task that, in many institutions, will be conducted at a centralized level. The preparation of distribution tables should not generate excessive difficulties for institutions, since the necessary data are usually available in institutional information systems and the calculation of percentages can be easily performed with simple software. This process only requires the following steps:

1. Identify the reference groups within your institution through objective and transparent criteria, which must be attached to the distribution tables of grades produced. In the absence of methods based on comparable learning outcomes, it is recommended to use the ISCED-F classification, which provides a standardized and hierarchical classification of subject areas. To ensure reference groups are large enough for statistically relevant comparison, it is advisable to use an ISCED code at the "narrow" or "detailed" levels (UNESCO Institute for Statistics, 2014).

2. Calculate the absolute number of passing grades awarded to each identified reference group over the last two years at least. It is important to note that information on success rates can be provided in general but is not part of this calculation.

3. Calculate the grade distribution in terms of percentages of passing grades awarded to the reference group and create cumulative percentages. As a result, a score distribution table containing percentages and cumulative percentages for each identified reference group will be obtained.

When incorporated into the student's Record History and Diploma Supplement, the table will facilitate the interpretation of each assigned grade, eliminating the need for additional calculations. The ongoing European Grade Conversion System (EGRACONS) project is working on developing examples for the visual presentation of a grade table.

Grade conversion

With regard to mobility students' grades, the academic responsible for credit recognition must compare the grade distribution table of their reference group with the one developed by the other institution for the parallel reference group. The position of each note within the two tables can be compared and based on this comparison, the individual notes are converted. Typically, the percentage ranges of grades overlap. The purpose of this exercise is transparency. Therefore, the receiving institution must decide in advance whether to consider the minimum, average or maximum score of the overlapping bands.

2.1.7. Double, joint and multiple degrees: fostering cooperation and mobility

Double, joint and multiple degrees are educational approaches that seek to promote cooperation and mobility between higher education institutions and students, allowing them to obtain degrees from multiple institutions or countries. These initiatives have the main

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objective of enriching students' educational experience, providing diversified learning opportunities and improving their employability in an increasingly connected global scenario.

Double Degrees: A double degree involves obtaining two degrees from different institutions. This can occur when two universities or colleges, often located in different countries, enter into an agreement to allow students to meet graduation requirements from both institutions. This allows students to have a broader international perspective and to take advantage of the resources and expertise of both institutions.

Joint Degrees: Joint degrees, also known as dual degree programs, are academic programs in which students follow a specific curriculum developed by two institutions. Upon completion of this curriculum, students receive a single degree that is issued jointly by both institutions. This approach is especially advantageous when institutions have complementary expertise in a given field, allowing students to benefit from a more comprehensive education.

Multiple Degrees: Multiple degrees refer to obtaining degrees from multiple institutions or programs of study, either simultaneously or over a period of time. This may involve obtaining degrees from different educational levels or from different disciplines. This approach is valuable for students who want to develop a diverse set of skills and knowledge to meet the demands of ever-evolving careers.

Benefits:

- Experience Enrichment: Students have access to different teaching approaches, academic cultures and resources, enriching their educational experience.
- Improved Employability: Dual, joint and multiple degrees can make graduates more attractive to employers by demonstrating a breadth of knowledge and flexibility.
- International Perspective: These approaches promote intercultural understanding and global sensitivity, preparing students for an increasingly globalized world.
- Institutional Collaboration: Higher education institutions collaborate to deliver more comprehensive educational programs, leveraging their respective specializations.
- Advanced Specialization: Double, joint and multiple degrees can allow students to specialize in interdisciplinary areas or specific niches, combining knowledge from different fields of study.

- Expanded Professional Network: Studying in different institutions and environments provides students with an international network of contacts, which can be valuable when entering the job market.

- Career Flexibility: The range of knowledge and skills gained through these approaches can make graduates more adaptable to different industries and roles.

- Language Skills: Studying in an international environment often requires acquiring or improving skills in different languages, which is highly valued in a globalized world.

Challenges:

- Curriculum Coordination: Creating aligned educational programs across different institutions can be complex, requiring careful coordination.

- Degree Recognition: In some cases, there may be challenges related to the recognition of degrees in different jurisdictions.

- Logistics: Managing the administrative and logistical requirements of studying at multiple institutions or countries can be challenging for students.

- Financial Costs: Studying at different institutions or countries can be financially demanding with additional expenses such as tuition fees, housing and travel.

- Cultural Adaptation: Living and studying in a new cultural environment can be challenging for some students, requiring adaptation and openness to new perspectives.

- Diploma Recognition: In some cases, there may be challenges in validating diplomas obtained in different countries, which may impact employability or further study.

- Administrative Complexity: Coordinating the academic requirements, deadlines, and procedures of multiple institutions can be bureaucratically cumbersome.

Important Considerations:

- Planning Ahead: Students should carefully research institutions and programs, ensuring they are recognized and meet their educational and career goals.

- Institutional Support: It is important that the institutions involved provide effective academic and administrative support to help students navigate logistical and curricular challenges.

- Long-Term View: The benefits of these approaches may become more apparent over time as graduates apply their diverse education to their careers.

- Communication Skills and Adaptation: The ability to communicate effectively and adapt to different cultural environments is critical to success in these educational experiences.
- Balancing Challenge and Reward: While these approaches offer exciting opportunities, students must be prepared to deal with the inherent challenges and assess whether the benefits outweigh the efforts required.

Overall, dual, joint and multiple degree approaches offer significant advantages for students seeking a more diverse and globally relevant education. However, it is important for students to carefully consider the challenges and opportunities before entering such programs.

Double, Joint and Multiple Degrees in Portugal:

In Portugal, dual, joint and multiple degree approaches are increasingly being adopted by universities and higher education institutions across the country. These initiatives aim to provide students with a more comprehensive and international education, preparing them for the demands of a globalized world. Several universities in Portugal partner with renowned foreign institutions to offer joint or dual programs in a variety of disciplines.

These programs often involve student exchanges between partner institutions. Students have the opportunity to study in different academic environments, often in different countries, which broadens their horizons and enriches their education. For example, a student from Portugal can participate in a joint program between a Portuguese university and a university in France, allowing him to obtain diplomas from both institutions at the end of the course.

Let's explore how these approaches are applied in Portugal:

1. Cooperation between Institutions: Universities and higher education institutions in Portugal have established partnerships with foreign institutions to offer joint or dual programs. This allows students to study in different academic settings and earn internationally recognized degrees.
2. Mobility Programs: Many Portuguese universities participate in the Erasmus+ program, a European Union program that promotes student mobility between European countries. This

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allows students to study for a period at a partner institution in another country, often with the guarantee of academic credit recognition.

3. Deepening International Relations: The double and joint degree approaches encourage Portuguese institutions to establish deeper relationships with their foreign partners. This can lead to research collaborations, faculty exchanges, and other academic activities.

4. Wider Range of Subjects: Through these approaches, students in Portugal have access to a wider range of subjects and specializations, often combining areas of study that complement their career ambitions.

5. Cultural Enrichment: Studying in international environments provides students with a unique opportunity to interact with peers from different cultures, broadening their global understanding and intercultural communication skills.

2.2. Case studies and examples of successful credit recognition and student mobility initiatives, collaborative degree programs

2.2.1. Examples for grade conversion

1. Grade conversion based on two grade distribution tables from two reference groups belonging to different national grading systems [5]:

Reference group A in Italy (Passing grades ranging from 18 to 30 cum laude)

Reference group/Field of study: ISCED Code 023 Languages

Reference group B in France (Passing grades ranging from 10 to 20)

Reference group/Field of study: ISCED Code 023 Languages

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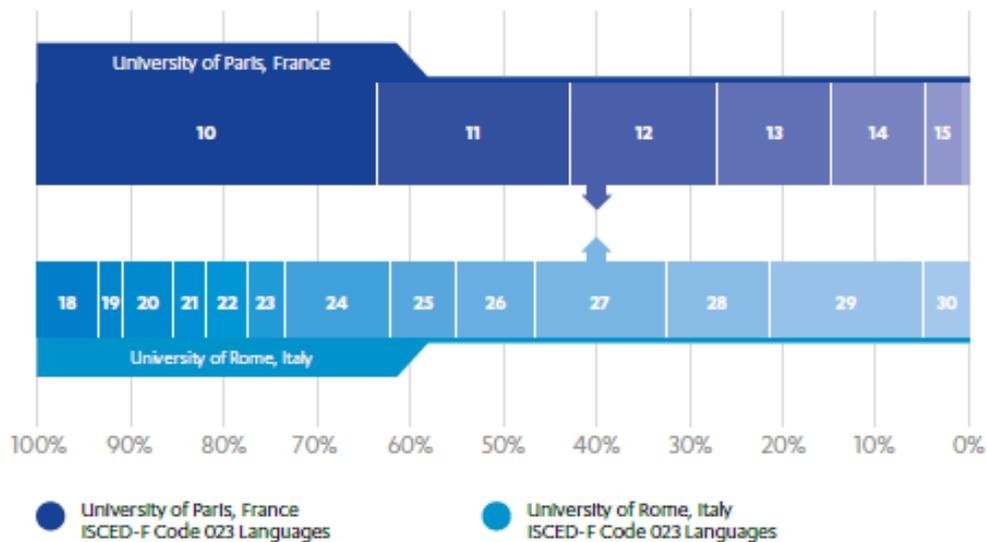
In this case, the percentage ranges of the grades overlap. The receiving institution should have decided in advance whether they will take the minimum, average or maximum comparable grade of overlapping ranges. Therefore, if the University of Rome had decided in advance that they would use the minimum or the average, the student's grade would be 27 and if they had decided that they would use the maximum, the student's grade would be 28.

2. Grade conversion based on two grade distribution tables from two reference groups belonging to different national grading systems [5]:

Institution FHV in Austria (Passing grades ranging from 1 to 4)

Reference group/Field of study: ISCED Code 071 Engineering and engineering trades

Institution University of Ghent in Belgium (Passing grades ranging from 10 to 20)

Reference group/Field of study: ISCED Code 071 Engineering and engineering trades

In this example a grade 2 (Good) from the institution in Austria would be transferred into a grade 13 in the institution in Belgium. A grade 11 from the institution in Belgium would be

transferred into a grade 3 (Satisfactory) in Austria. In this case both institutions have decided to use the average in case of overlapping percentage ranges.
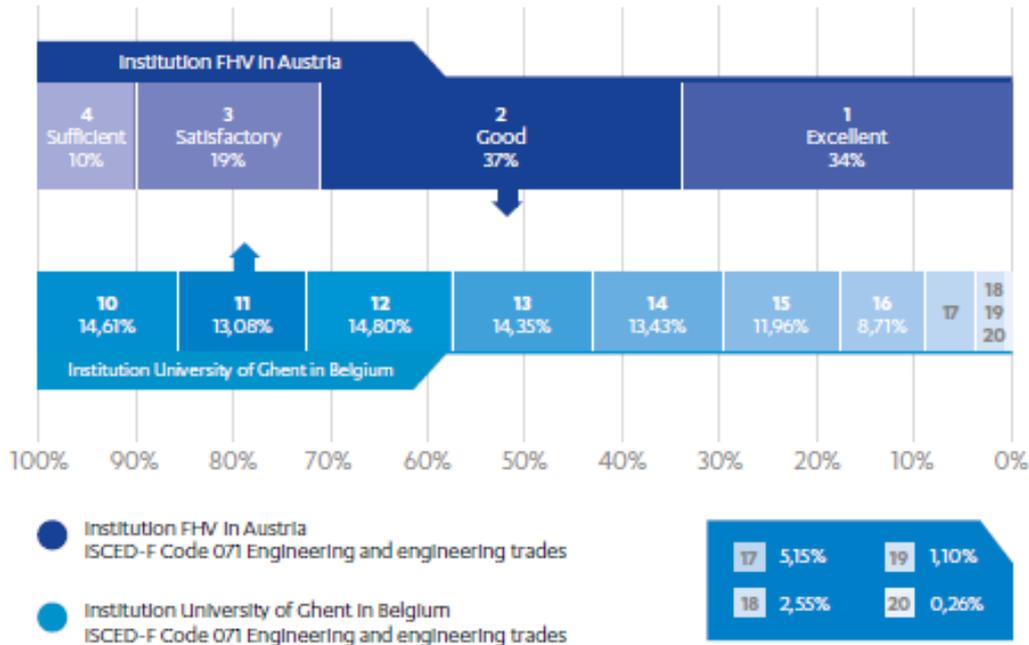
2.2.3. European Master of Science in Sustainable Food Systems Engineering, Technology and Business (BiFTec-FOOD4S)

The European Master of Science in Sustainable Food Systems Engineering, Technology and Business (BiFTec-FOOD4S) general course aims are targeting on preparing competent employees for sectors including sustainable food production, processing and agribusiness, in industry, academia and government. The Consortium of the four European partner universities (Universidade Católica Portuguesa - Portugal, Hochschule Anhalt - Germany, University College Dublin - Ireland, and KU Leuven - Belgium) jointly have committed themselves to each offering part of the curriculum. Successful graduates are awarded a joint degree [6].

BiFTec-FOOD4S adopts a transversal and multidisciplinary approach to a broad range of topics related to the 4S pillars Science (Food Science & Engineering Technology), Sustainability (Sustainable Food Product & Food Process Design), Safety (Food Safety & Quality), and Simulation (Computational Food Science & Technology).

The programme is offered in modules based on lectures, tutorials, workshops, seminars, site visits and student-directed learning. Each of the taught modules (core and optional) is offered

over a two- three- to four-week timeframe with assessment scheduled on the completion of each module. Subjects are developed to master level and reinforce the capacity to survey, critically evaluate and interpret the scientific literature, integrate basic and applied science and encourage the expression of independent opinion and critique in course assignments [6].

In the seminars, advanced-level and professionally relevant topics are debated based on academic and practical experience. In order to prepare you to undertake the project/thesis, course work in biostatistics, information technology, research methodology and project preparation guidance are provided. You will be made aware of best practices and the legislative framework relating to all aspects of food production, processing, marketing, business and distribution.

The Master's thesis project will be organised during the second year. You will be involved in selecting your project based on your choice of optional modules and career aspirations. Option to undertake a summer professional competency module in a company setting will additionally contribute to the development of the professional skills and experience [6].

Study Plan

STAGE 1

Module	ECTS	Institution
COMPULSORY COURSES		
Food Science Fundamentals	6	KU Leuven - Ghent Technology Campus, Belgium
Food Safety and Quality Fundamentals	8	KU Leuven - Ghent Technology Campus, Belgium
Sustainable Food Product and Food Process Design Fundamentals	4	KU Leuven - Ghent Technology Campus, Belgium
Computational Food Science, Technology and Engineering Fundamentals	6	KU Leuven - Ghent Technology Campus, Belgium
Environmental Practices and Sustainability	5	Universidade Católica Portuguesa in Porto, Portugal
Business and Economics in Food Industry	5	HS Anhalt in Köthen, Germany
Sustainable Production of Plant based Food Products: Cereals	5	HS Anhalt in Köthen, Germany
Sustainable Production of Food from Animal Origin: Meat and Dairy	5	HS Anhalt in Köthen, Germany
OPTIONAL COURSES (YOU SELECT THREE MODULES, ONE FROM EACH PAIR)		
Computational Food Science, Technology and Engineering Supplements OR Sustainable Malting and Brewing	6	KU Leuven - Ghent Technology Campus, Belgium
Sustainable Production of Fats and Oils OR Sustainable Wine Production	5	Universidade Católica Portuguesa in Porto, Portugal
Materials, Systems and Technology for Food Packaging OR Sustainable Production of Plant based Products: Fruits and Vegetables	5	Universidade Católica Portuguesa in Porto, Portugal

2.2.4. Master of Science in European Forestry (Erasmus Mundus Joint Master Degree Programme)

MSc European Forestry (MSc EF) is a top class taught double-degree Erasmus+: Erasmus Mundus Joint Master Degree Programme (EMJMD) in the field of forest sciences and is one of the first EMJMD programmes that has been accredited according to the European approach for quality assurance of the joint programmes. The quality of our programme is also acknowledged by the European Commission, which awarded the MSc European Forestry Erasmus Mundus status for years 2004–2014, 2016–2019 and 2019-2023 [7].

This programme is a two-year interdisciplinary programme that provides academic education in the field of sustainable resource management with an emphasis on current bioeconomy issues. MSc EF offers a new approach to forestry and nature management markets and it connects the increasing number of forest-related issues with a European dimension at international as well as national levels.

The objective of the MSc EF programme is to educate professionals who have a thorough understanding of a sustainable forest bioeconomy as well as the European business culture. The curriculum is specifically designed to take into consideration the needs of potential employers and therefore our graduates are highly valued by national and international agencies, governmental bodies, NGO's, research institutions and timber, paper and pulp enterprises.

In MSc EF, six European top-class forestry universities collaborate intensively to offer joint study modules in addition to their existing curricula. The MSc EF Consortium consists of the following institutions [7]:

- University of Eastern Finland (coordinator), Finland
- AgroParisTech, France
- University of Freiburg, Germany
- University of Lleida, Spain
- University of Natural Resources and Life Sciences Vienna, Austria
- Transilvania University of Brasov, Romania

In addition, Associated Partner HEIs in Brazil, Canada and China and Associated Industrial and Associated Scientific Partners contribute to programme delivery [7].

Study Plan

	ECTS	1.ay	2.ay
Advanced studies in European Forestry (MSc EF)	0-120		
Compulsory advanced studies of the 2nd academic year	30		
MSc European Forestry thesis seminar and Maturity test, M.Sc. (Agr & For) (in English)	0		✓
M.Sc. thesis (Agr & For, European Forestry) (in English)	30		✓
Compulsory advanced studies of the 1st academic year	30		
Academic skills in forest sciences (in English)	1.5	✓	
Research methodology in forest sciences (in English)	3.5	✓	
Global virtual seminar (in English)	3	✓	
European forestry field course (in English)	8	✓	
Applied period in forest institutions (in English)	9	✓	
Trends in European Forestry (in English)	5	✓	
Elective studies of the 1st academic year	30		
Bioenergy markets and policies (in English)	6	✓	
Forest health and biodiversity management (in English)	3	✓	
Forest policy analysis (in English)	6	✓	
Forest Work Science (in English)	6	✓	
Futures analysis of forest bioeconomy (in English)	4	✓	
Information skills and sources in Science and Forestry for International Students (in English)	1	✓	
Innovation management in forest industries (in English)	4	✓	
Supply and energy use of lignocellulosic biomass (in English)	6	✓	
University Study Skills (in English)	1	✓	
Forest soil literature (in English)	2-5	✓	
European forest bioeconomy (in English)	5	✓	
Introduction to remote sensing and geoinformatics MOOC (in English)	3	✓	
Advanced remote sensing (in English)	6	✓	

Applied geoinformatics 2 (in English)	5	✓	
Carbon and nutrient dynamics of forest soils, lectures and literature (in English)	6	✓	
Carbon and nutrient dynamics of forest soils, practicals (in English)	4	✓	
Forest inventory and modeling (in English)	8	✓	
Forest zoology (in English)	4-6	✓	
Intensive forest management (in English)	3	✓	
International forest governance and environmental policy (in English)	5	✓	
Elective studies of the 2nd academic year at the secocond-year host university	30		✓

2.2.5. Food Science and Technology and Nutrition (Doctoral Program)

The programme aims to produce a new generation of highly qualified professionals well prepared to intervene in industrial, academic, regulatory and other relevant roles. By offering a wide choice of research opportunities in three renowned and complementary research institutions, an environment will be provided in which selected students will be able to identify and develop unique paths of advanced learning. Students finishing this program will be well prepared to occupy positions in the food industry, in consulting and services, government departments, research and academia. The programme will be run according to the highest international standards and its graduates will be prepared to work anywhere in the world as demonstrated by the track record of the three institutions involved. The cooperation with the Competitiveness Pole for the Agro-Food Industry and the Collaborative Laboratory for the Food Industry (the 3 institutions involved are founders and active members) will create new knowledge and promote innovation in the field [8].

The PhD graduates in Food Science and Technology and Nutrition will be able to develop the following expertise:

1. Understanding the complexity of the food sector and the associated scientific and the technological challenges:
2. Knowledge of the main methods used in the disciplines relevant to the food sector and development of the ability to develop and introduce them in the research area selected;

3. Ability to conceive, design, adapt and perform research of the highest level;

4. Ability to analyse, evaluate and summarise new ideas and integrate them into relevant scientific studies;

5. Ability act in the spheres of knowledge and technology transfer between the university and the wider socio-economic environment;

6. Ability to communicate with their peers, the academic community, industry and society in general.

Students finishing this program will be well prepared to occupy positions in the food industry, in consulting and services, government departments, research and academia developing activities linked to the food sector [8].

Study Plan

Regime	Curricular Unit	Scientific Area	ECTS
Year 1			42
S1	Thesis Project in Food Science and Technology and Nutrition	EQB; BQ; BT	18
S1	Opção I		6
	Advanced Processing Technologies	EQB	6
	Nanotechnology in the Food Industry	EQB	6
S1	Opção II		6
	Food and Nutrition	BT	6
	Packaging in the Food Industry	BT	6
S2	Opção III		6
	Bioactive Compounds in Food - Characterization and Properties	BQ	6
	Biopolymers in Food – Characterization and Properties	BQ	6
S2	Opção IV		6
	Advanced Statistics	MNE	6
	Biotechnological Processes in the Food Industry	EQB	6
	Food Safety	EQB	6
Year 1 2 3 4			198
PQ	Thesis	EQB; BQ; BT	198

Chapter 3. Education for Sustainable Development

3.1. National regulative framework for integrating ESG and green skills in education and research

The integration of ESG (environmental, social and governance) skills and environmental concerns in education and research is a necessary response to the challenges of our time. In an increasingly interconnected and interdependent world, issues such as climate change, social inequality, resource scarcity, and environmental degradation can no longer be treated in isolation. They require an integrated and collaborative approach, in which education and research play a key role.

The national regulatory structure plays a central role in this context. It serves as a solid foundation for the transformation of higher education and research, establishing clear patterns and guidelines for the integration of ESG and environmental principles in all facets of the educational and research system. This structure not only establishes expectations, but also provides practical guidance on how institutions can achieve these goals, offering flexibility to adapt to the specific needs of each institution.

An effective national regulatory structure is capable of catalyzing a deep and lasting change. It can inspire a culture of responsibility, sustainability and innovation throughout the academic community. In addition, it can help align research efforts with society's needs, encouraging the search for innovative solutions to ex -and environmental challenges.

In this context, it is important to highlight that the integration of ESG-expert skills and green issues is not limited to the environmental science departments. It must cover all disciplines and areas of study, from social sciences to humanities, as all play a role in building a more sustainable and fair society.

The integration of ESG skills and environmental concerns in education and research requires a strategic and well -planned approach. Here are some steps that can be taken to achieve this goal:

- Define clear objectives: The first step is to establish clear goals for the integration of ESG-expert skills and green issues in education and research. This may include the

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creation of specific goals, such as developing ESG -related curricula, increasing environmental awareness among students, or promoting sustainability -related interdisciplinary research.

- Review and update curricula: Educational institutions must review and update their resumes to incorporate content related to ESG and the environment. This may involve the creation of courses dedicated to these topics, as well as the inclusion of existing modules.

- Promoting interdisciplinary research: Research is a fundamental part of the integration of ESG skills and green issues. Institutions can promote interdisciplinary research, encouraging collaborations between departments and different colleges to address complex sustainability problems.

- Resources and financing: It is important to allocate adequate resources and financing to support ESG and Environment -related initiatives. This may include the granting of research scholarships, the creation of cutting -edge laboratories and the promotion of innovative projects.

- External Partnerships: Establishing partnerships with external organizations, such as companies, NGOs and government agencies, can expand the impact of ESG and green initiatives. These partnerships can provide internship opportunities, additional financing and access to specialized resources.

- Promoting awareness: holding educational events, seminars, lectures and workshops can help promote awareness of ex-and environmental issues. This involves not only student education, but also the awareness of the entire academic community and society in general.

- Evaluation and Monitoring: It is crucial to implement evaluation and monitoring systems to measure progress in the integration of ex -expert and green skills. These systems can help identify areas that need improvement and adjust strategies as needed.

- Policies and Regulations: Government policies play an important role in promoting ESG and Green integration. Educational institutions can advocate for policies that encourage sustainable practices and offer financial incentives for ESG-related initiatives.

- Community Involvement: Encouraging the involvement of the local and global community in ESG-related projects can expand the impact and promote a broader understanding of these issues.

- Supporting innovation: Encouraging innovation and entrepreneurship related to ESG and environment can lead to creative and sustainable solutions to complex challenges.

Skills integration and green issues in education and research is a continuous process that requires long-term commitment. With the support of a solid and effective national regulatory structure, along with the commitment of academic institutions, it is possible to create an educational and research environment that actively promotes sustainability and social responsibility.

3.1.1. Portugal: The 2030 Agenda for Sustainable Development

The 2030 Agenda for Sustainable Development is an ambitious global picture that guides the efforts of all participants in the search for a more inclusive and sustainable world. Its amplitude and complexity represent both a force and weakness, as they reveal some limitations, inconsistencies and risks that must be considered during its implementation.

Civil society's contribution to boosting and accelerating the execution of the agenda goes beyond simply achieving sustainable development objectives (SDGs). It encompasses its role in the representation of marginalized social groups, regulation as guardian of public interests, the transmission of ideas and information between policy formulators and the general public, promoting partnerships and proposing new approaches and solutions. In turn, Agenda 2030 offers civil society a guide to guide its actions within a global view of development. It acts as a tool for defense and political influence, a common language for dialogue and mobilization around shared objectives, an instrument to strengthen citizenship for inclusive and sustainable development, a way to communicate the actions undertaken and a way to drive New partnerships and financing opportunities.

The intervention of civil society in implementation and monitoring of the 2030 agenda becomes even more relevant in a global context where its space of action is under threat and in a conjuncture where the impacts of Covid-19 pandemic especially affect countries and groups poorer and vulnerable population, reversing advances and compromising the achievement of development objectives.

The principles of universality, interconnection and indivisibility of the SDGs highlight the need for an integrated approach, which consider interconnections between internal (regional, national and local) and external dimensions (foreign policy and international development cooperation) in the search for development sustainable global.

In the European context, it has been observed that the European Union (EU) has demonstrated limited leadership and effectiveness in the integration of Sustainable Development Goals with EU policies, relevant European instruments, such as the European semester, and the monitoring of commitments related to the SDGs. To date, the EU has not developed an integrated strategy or a comprehensive plan for the implementation of Agenda 2030, despite the recommendations of the European Council and Parliament in this regard.

This gap in the integration of the SDGs into EU policies can be attributed in part to the low relevance attributed to the subject in European political agendas. SDGs are often perceived as an issue related mainly to the development cooperation sector, rather than being considered an essential part of EU's internal and external policies. In addition, institutional and leadership issues have also played a role in the lack of effective coordination.

Although the European Commission in the 2019-2024 term has declared sustainability as a political priority and committed to putting the 2030 agenda at the center of European policies, the practical implementation of these intentions has been challenging. This requires concrete actions in various areas, including strategies, institutions, mechanisms and instruments. To date, the EU has faced difficulties in effecting these actions since the adoption of the 2030 agenda in 2015.

The situation in the EU Member States varies significantly. Some countries have successfully incorporated SDGs into their strategic levels, developing specific strategies and integrating SDGs into sectoral planes. In addition, they have established effective institutional models to coordinate and implement these goals and have more comprehensive monitoring systems than simply reporting statistics or presenting Voluntary National Reports (RNV).

The involvement of civil society in the implementation of the SDG is also diversified in European countries. This reflects the different approaches and priorities of each nation in relation to the participation of civil society in the achievement of the SDGs.

The number of countries that incorporate civil society participation in their structures and government mechanisms is lower than cases where specific dialogue and coordination structures were created to involve a large group of actors. In some countries, governments have taken advantage of specific moments or processes to promote a more organized and systematic involvement of civil society organizations (OSC) in the coordination and implementation mechanisms. This includes the definition of National Strategies/Plans for SDGs or the discussion and elaboration process of the Voluntary National Report (RNV), with cases

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where OSC collaborated in the joint newsroom of the report. The elaboration of alternative reports and the formation of coalitions or alliances of civil society for the SDGs have played a key role in implementing the agenda in several European countries. There is no unique formula applicable to all countries for the incorporation and implementation of the 2030 Agenda; This model must be created, applied and adapted according to the reality of each country and the lessons learned. However, from case analysis and experiments, it is possible to identify some common elements that favor faster, faster, effective and effective implementation. This includes the recognition of the SDG as a national priority on the political agenda, with a centralized institutional structure, for example, at the first minister level. In addition, it is important to have a clear view of the implementation of the SDGs, with defined goals and goals, division of tasks and responsibilities. It is essential to adopt a multisectoral and multidimensional approach, including the nature and functioning of the structures and mechanisms created, through a "whole government" approach and ensuring effective conditions for these mechanisms, such as proper mandate, competencies and decision power, well as representativeness. Promoting the involvement of various actors in the definition, implementation and monitoring processes is crucial. It is also essential to establish and apply monitoring and reporting systems that complement each other and make a comprehensive effort of communication and awareness of the 2030 agenda, adapting it to the national and local context. In Portugal, the analysis of this study shows that the dynamics that began in 2016-2017, which suggested a possible deepening of the integration of the SDGs in strategic, institutional and monitoring, has not continued in recent years. Strategically, Portugal is the only European country that does not have a strategic framework for sustainable development or the 2030 Agenda. The definition of a concrete plan at the national level that can clarify strategic guidelines, set priorities and policies, national goals, paper of the various interveners and resources available, it would be important to boost the implementation of the agenda, especially in an area that requires a coordinated effort of multiple sectors and interveners. Some sectoral strategies mention or incorporate contributions to the SDGs, but the lack of visibility of the 2030 Agenda and its absence in national political discourse have not favored an efficient translation of commitments through true redefinition and alignment of public policies. The theme is mainly present in foreign policy issues, participation in international forums and Portugal's positioning regarding certain issues in the international scenario. The operation of the institutional model established for the implementation of the 2030 Agenda, in practice, does not facilitate the connection between the external and internal dimensions, does not promote the coordination and structured dialogue between various levels of governance in this

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matter and does not include dialogue mechanisms with the Parliament or civil society. On the other hand, it is crucial that the Voluntary National Report (RNV) is an essential part of an internal and national debate process that includes a regular and systematic monitoring and monitoring system. Currently, the monitoring of the implementation of SDGs is performed only at the statistical level, through the analysis of applicable UN indicators. There are no specific national indicators, nor a more qualitative monitoring of the effective impact of measures and policies on the achievement of the SDGs.

Regarding the participation of organized civil society, it is important to note that the period of negotiations of the post-2015 agenda, in which civil society actively participated in the definition of a Portuguese positioning document, contrasts with the subsequent process of Implementation and monitoring, where involvement has been limited. This occurs both within the established institutional model (where civil society does not participate in coordination mechanisms), as well as monitoring and reporting mechanisms (where their opinions were not incorporated in the elaboration of the RNV).

The main mechanism of articulation and dialogue involving civil society and other actors is, in practice, the Forum of Development Cooperation. However, for several identified reasons, this forum has not effectively fulfilled its function as a mechanism of articulation related to the 2030 Agenda. In the context of coordination within civil society, the Civil Society Forum for the SDG play an important role, promoting consultations Public and debates with political representatives about the 2030 Agenda. However, it would be beneficial to deepen the reflection on how to ensure the sustainability of this forum, define more concrete goals and results to be achieved.

The Platform of Non-Governmental Organizations for Development (NGOs) and its associates have been focused mainly on SDG 17, addressing partnership issues and participation of various actors, aids to the development and coherence of development policies. It is important to find ways to further mobilize the organizations and networks of Portuguese civil society in relation to the SDGs, both for a more coordinated joint action in this area and to exert greater influence with public interlocutors, in order to put this theme on the discussion agenda and advance in the implementation process.

Development cooperation policy plays a key role in fulfilling the 2030 agenda, as all SDGs incorporate goals related to support for developing countries and contribution to global development. The elaboration of the next Strategic Document of Portuguese Post2020

Cooperation represents a significant opportunity to concretely and detailedly align the objectives of Development Policy with Agenda 2030. This allows for a deeper analysis and reflection on role and contribution from Portugal for global development. Overall, it is positive that the main cooperation programming instruments have been adapted to the new context of global development, including strategic bilateral cooperation programs.

In the field of development education, in addition to the explicit integration of SDGs into the Strategic Plan (ENED 2018-2022), it is encouraging to see that the process of definition, implementation and follow-up involves a wide range of actors in a form integrated and systematic. This approach is considered a good practice, both nationally and international, and can serve as an example for other strategies and action plans.

It is important to note that various international processes related to development cooperation are increasingly requiring countries to specify and demonstrate their contribution to the SDGs. In the case of Portuguese cooperation, the incorporation of the SDG is present in several areas, such as the report and annual calculation of public aid to development, the assessments of the OECD Development Assistance Committee (CAD) to Portuguese cooperation and European certification in the field delegated cooperation. However, it is essential that this incorporation of the SDGs is not limited to the fulfillment of external requirements, but also includes concerted efforts to promote the 2030 agenda within the national public policies.

3.1.2. Portugal: National Development Education Strategy

The 2018-2022 National Development Education Strategy (ENED) plays a key role in reinforcing Portugal's political commitment in the field of Development Education (DE), especially in a new institutional context in which Camões-Institute of Cooperation and Language, I. P. (Camões, I. P.) plays a central role in the areas of development cooperation and ed. This involves Portugal's participation in international instances with DE responsibilities, such as the Global Education Network Europe or Development Assistance Committee (CAD) of the Organization for Economic Cooperation and Development (OECD) [9].

This political commitment is of utmost importance given the increase in challenges to solidarity and citizenship in the current international scenario. Ed is a powerful tool for challenging stereotypes and combating all forms of discrimination, including those related to gender, race, ethnicity, nationality, age, deficiency, religion, sexual orientation, gender identity and sexual characteristics, among others. In addition, Ed contributes to strengthening principles and

commitments that fight fear, xenophobia, social exclusion, violence, inequality and environmental degradation, thus creating the foundations for a more inclusive, peaceful, fair and sustainable world.

The promotion of DE and, through it, of active and responsible citizen engagement, also plays a fundamental role in achieving the SDGs. Specifically, the strategy aims, by 2030, to ensure that all apprentices have acquired knowledge and skills necessary to promote sustainable development, including aspects such as sustainable education, sustainable lifestyles, human rights, gender equality, culture of peace and nonviolence, Global Citizenship and Appreciation of Cultural Diversity.

Based on the lessons learned and the experience acquired during the process of creation, implementation and evaluation of ENED 2010-2016, this strategy aims to act in this challenging context, aligning with the principles and goals of DE and SDGs, in order to promote a fairer and more sustainable world.

ENED 2018-2022 is inserted in a broad international and national institutional reference, consisting of official documents and initiatives of relevant actors in the DE area, which contributes to the deepening and consolidation of DE conceptions and practices to the most different levels.

DE is an educational process that unfolds throughout life and encompasses a wide variety of educational contexts, which can be classified into three main categories: formal education, non-formal education and informal education [9].

- Formal Education: Formal education occurs in school environments and follows an official curriculum, resulting in recognized diplomas and qualifications. Its main objective is the learning and development of skills and knowledge. In the context of DE, formal education involves the integration of content and methodologies related to sustainable development in the curriculum areas, interdisciplinary initiatives, school projects and the initial and continuous training of teachers. This covers all levels of education, from preschool to higher education.

- Non-formal education: Non-formal education refers to organized, intentional and structured educational initiatives, but not necessarily lead to formal certificates. This includes training actions, workshops, seminars and activities promoted by civil society organizations (OSC), government agencies or other actors. In the context of DE, non-

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formal education can cover the continuous education of teachers, clubs, school library networks and other activities involving educational and OSC communities.

- Informal Education: Informal education refers to the learning that occurs spontaneously and not structured in everyday life, through everyday experiences, interpersonal relationships, work and leisure. It is usually not oriented for specific educational purposes and does not result in formal certificates. In the context of DE, informal education may involve actions that seek to indirectly influence public opinion and attitudes through activities with opinion makers, conventional media messages or social networks and other forms of communication.

It is important to highlight that these categories are not mutually exclusive, and DR initiatives can occur in various educational contexts simultaneously. The interconnection between these contexts is fundamental to an DE's holistic approach, which aims to promote awareness and action in relation to the global sustainability challenges in all spheres of life.

The ENED 2018-2022 establishes the objectives that the strategy seeks to achieve over the next five years. The achievement of these objectives will be detailed later in an action plan, which is an integral part of this strategy. To guide the achievement of these objectives, ENED adopts a structural approach based on essential action principles. These principles include coherence, cooperation, cooperation, equity, equality, social justice, non -discrimination, participation and solidarity. The strategy is supported by the collaboration and articulation between several actors [9].

Based on the previous ENED experience (2010-2016) and the search for a more inclusive approach, ENED 2018-2022 aims to involve a more diverse set of actors working in the field of development education, covering a wide variety of sectors and representing different geographical regions. This includes the participation of public bodies and civil society organizations in partnership.

In addition, the strategy recognizes the importance of producing and disseminating reference content and scientific knowledge about development education, preferably in collaboration with other actors.

ENED 2018-2022 establishes four fundamental objectives [9]:

1. Reinforcing the ability to intervene in development education: This implies improving the ability of relevant actors to act in the field of ed, strengthening their skills and

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knowledge to effectively promote awareness and action in relation to global sustainability challenges.

2. Extending the reach and quality of development intervention for development: This goal aims to expand the impact of ed initiatives, making them more comprehensive and ensuring that they reach a wider audience while maintaining high quality standards.

3. To affirm the political commitment to development for development: this objective seeks to reinforce Portugal's political commitment to the ed, highlighting the importance of the approach to policies and practices.

4. Consolidate the implementation of ENED: To ensure the effectiveness of strategy, it is essential to consolidate its implementation at national level, ensuring that DE's objectives and vision are effectively incorporated into policies and practices.

These objectives are fundamental for the construction of fairer, solidary, inclusive, sustainable and peaceful societies, aligning with the principles and goals of development education. They reflect learning and experience with the previous ENED and were developed after collaborative reflection and discussion.

3.2. Institutional regulative framework (policies, regulations, procedures, toolkit etc.) for promoting education for sustainable development and green curriculum

An institutional regulatory structure plays a fundamental role in promoting education for sustainable development (EDS) and a green curriculum. This regulatory structure covers a set of rules, rules and guidelines established by educational authorities or governance bodies to guide and direct the educational system. Its importance is profound and comprehensive, as it shapes the way education addresses sustainability and environmental issues at all levels, from preschool to higher education.

First, an institutional regulatory structure ensures the consistency and quality of education. It defines clear patterns and expectations for the development and delivery of the curriculum, ensuring that sustainability and environmental education are not treated as peripheral topics, but integrated to the core of educational systems. This structure is also essential for maintaining a long -term view for Eds. Sustainability issues require long-term approaches, and a solid regulatory structure allows educational institutions to plan continuous implementation

of these initiatives, adapt to changes in environmental needs and challenges, and provide a solid base for the future. In addition, regulation creates accountability mechanisms. It blames educational institutions for the fulfillment of their commitments to sustainability and environmental education. This encourages schools, colleges and universities to prioritize these initiatives and allocate resources necessary for their effective implementation.

A regulatory structure also influences the allocation of resources within educational systems. It can direct financing for teacher training, curriculum development and infrastructure that supports EDS. This financial support is essential for the effective implementation of sustainability -related projects. Standardized evaluation is another crucial aspect. Regulations often include standardized evaluations and evaluation criteria. This ensures that students are not only exposed to the concepts of sustainability but are also evaluated in their understanding and application of these principles. This approach motivates educators to emphasize these topics in their teaching. The regulatory structure may require or encourage professional development of teachers in the area of EDS and green curriculum. Educators need the skills and knowledge necessary to effectively teach these concepts and integrate them into various disciplines.

In addition, regulations can align education with national and global sustainability goals, such as the United Nations sustainable development objectives. This allows countries to make significant progress towards their sustainability goals.

The interdisciplinary approach often needed for sustainability is facilitated by regulation. It can promote collaboration between different academic disciplines to address complex sustainability issues in a comprehensive way.

Regulation also ensures that Eds and the Green Curriculum are accessible to all students, regardless of their origin or location. This promotes inclusion and equity in education, addressing issues related to socioeconomic disparities in access to sustainable education.

In a world facing complex environmental and social challenges, regulatory support for EDS and the green curriculum helps prepare students with the global competence necessary to face and contribute to a more sustainable future. The promotion of sustainable development education and the integration of a green curriculum into educational institutions requires a robust regulatory structure that includes specific policies, regulations, procedures and tools. Here are the main elements that can compose this structure:

- Sustainable educational policies

This involves the creation and adoption of education policies that place sustainability in the center of the educational system. These policies can set long -term goals, guidelines, and objectives for the integration of sustainability in the curriculum, as well as the allocation of financial resources for initiatives related to sustainable education.

- Laws and regulations

Laws and regulations can be established at state or national levels to ensure that education for sustainable development is mandatory in all educational institutions. This may include the definition of specific learning patterns and accountability through evaluations.

- Curriculum Standards

Curriculum standards define the topics, skills, and competences that students should acquire in relation to sustainability. This may include the inclusion of topics such as climate change, biodiversity, green economy, and environmental ethics at all levels of education.

- Sustainable didactic resources

Develop and regulate the use of sustainable teaching materials, including textbooks, online resources and educational tools that promote environmentally and sustainable environmental practices. This may involve the selection of materials that are printed on recycled paper, digital rather than printed, ecological and low energy consumption.

- Teacher training

Implement teacher training programs that address sustainable development education by enabling educators to effectively incorporate these principles into their classes and teaching methods.

- Evaluation and monitoring

Establish assessment systems to measure students' progress in relation to sustainability and monitor the impact of sustainable teaching practices. This may involve specific assessments related to sustainability and participation in environmental projects.

- Community participation

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Encourage community participation in the definition of educational policies related to sustainability. This may include school advice, parents and partnerships with local organizations.

- Interinstitutional partnerships

Establish collaborations between educational institutions, local governments, non -profit organizations and companies to share resources, experience and best practices in promoting education for sustainable development.

- Incentives and recognition

Create incentive programs for schools and educators that stand out in the effective implementation of sustainability in the curriculum. This may include prizes, additional financing and public recognition.

- Universal access

Ensure that all children, regardless of their socioeconomic origin or geographical location, have equal access to education for sustainable development and green curriculum.

- Extracurricular Environmental Education

Support the creation of clubs and extracurricular activities related to sustainability and the environment, providing students with practical opportunities to engage in sustainable projects.

- Promotion of sustainable practices in schools

Implementation of regulations that encourage schools to adopt sustainable practices in their daily operations. This may include the reduction in energy and water consumption, the implementation of recycling and composting programs, the use of local and organic foods in school canteens and the promotion of sustainable transportation for students and staff.

- Periodic evaluation and adaptation

Regularly review and adapt policies, regulations and practices related to sustainable development education and green curriculum as new challenges and opportunities arise. This ensures that the educational system remains relevant and effective in promoting sustainability over time.

3.2.1. Tool Kit: Institutional Regulatory Framework to promote sustainable development education and green curriculum

Introduction:

A brief overview of the purpose and objectives of the tool kit.

The importance of EDS and the green curriculum in modern education.

A summary of the content of the tool kit and how to use it.

Section 1: Policy Development

1.1 Policy model:

Provide a customizable policy model for educational institutions to adapt and adopt EDs and green curriculum policies.

1.2 Policy Implementation Guide:

Guidelines on how institutions can effectively implement their EDS and Green Curriculum policies.

1.3 Policy Communication Plan:

Strategies to communicate policies to staff, students, parents, and the general community.

Section 2: Curriculum Integration

2.1 Curriculum Integration Framework:

A framework to integrate EDS principles into existing curricula with a step -by -step guide.

2.2 Resources for the Green Curriculum:

Selected resources, class plans and teaching materials related to EDS and green curriculum.

Section 3: Teacher Training and Development

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3.1 Teacher Training Modules:

Modules and resources to train teachers in EDS principles and green curriculum integration.

3.2 Good Practice Guide:

Examples and case studies of successful teacher development programs for EDS and green curriculum.

Section 4: Evaluation and Evaluation

4.1 Evaluation tools:

Tools and Rubrics to evaluate students' progress in relation to EDS and the green curriculum.

4.2 Monitoring and Report Framework:

Guidelines for institutions monitor and reported the implementation and impact of EDS and the green curriculum.

Section 5: Community involvement

5.1 Community involvement strategies:

Strategies to involve parents, local communities and other stakeholders in supporting EDS and green curriculum.

5.2 Collaborative initiatives:

Examples of successful partnerships between educational institutions and community organizations in ED projects.

Section 6: Financial Planning and Resource Allocation

6.1 Budgetary Guidelines:

Guidance on budget allocation for eds and green curriculum initiatives.

6.2 Subsidies opportunities:

Information on subsidies and financing sources available to support EDs and green curriculum projects.

Section 7: incentives and recognition

7.1 Recognition Programs:

Ideas and models for recognition programs that reward schools, teachers and students for their contributions to EDS and the green curriculum.

7.2 Award criteria:

Criteria and guidelines for winning prizes and recognitions related to EDS and the green curriculum.

Section 8: Legal and Compliance Considerations

8.1 Legal Framework Overview:

An overview of the relevant laws and regulations related to EDS and the green curriculum.

8.2 Compliance Checklist:

A checklist to help educational institutions ensure that they are in accordance with all the necessary legal requirements.

Section 9: Sustainability initiatives in institutions

9.1 Guide to Sustainable Practices:

Guidelines for implementing sustainable practices in educational institutions, including energy efficiency, waste management and ecological facilities.

9.2 Sustainability Report Models:

Models to report sustainability initiatives and their impact.

Conclusion:

Summary of the main points of the tool kit.

Encouraging educational institutions to start their journey towards Eds and the Green Curriculum.

Providing contact information for additional assistance or questions.

Appendices:

Additional resources, references and example documents that institutions can find useful.

This tool kit will serve as a comprehensive guide for educational institutions to establish and implement an institutional regulatory framework to promote sustainable development education and a green curriculum.
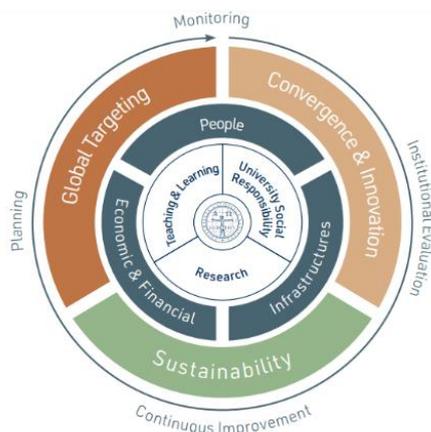
3.2.2. Universidade Católica Portuguesa: Regulative framework for promoting education for sustainable development and green curriculum

In the long run, life on this planet is becoming unsustainable in many areas, from the environment to human rights, from ethics to gender and racial discrimination, from poverty to working conditions. In environmental terms, science has labored to offer incontrovertible evidence that climate has changed drastically, and that the future of the planet is at risk. On the other hand, in social terms, the current pandemic has exacerbated social inequalities, a realization that is already evident and undeniable. The recognition of our planet's unsustainability has been globally accepted, and the phenomena of globalization and new technologies will continue to heighten this awareness [10].

Therefore, concepts such as the Common Home, Fraternity and Integral Ecology are instrumental in the pursuit of a better Humanity. And it is from these concepts that the proposed strategy derives. Universidade Católica Portuguesa has been, is and will remain an institution at the service of a better Humanity – and the society in which we live can rely, more than ever, on this university as an entity that, through Teaching and Research, will continuously seek solutions to the challenges facing Individuals and the Planet today. The existence of

geographical, moral, social, religious, cultural and other such borders, whose main objective is the self-preservation of individuals or groups of individuals who share the same space, whether physical or otherwise, implies that protecting Individuals and the Planet becomes reduced to the sum of these different sets of protections. The COVID-19 pandemic has reinforced this idea, as noted by Pope Francis in his Encyclical Letter Fratelli tutti (On Fraternity and Social Friendship), 'the inability to work together became quite evident ... [due to] a fragmentation that made it more difficult to resolve problems that affect us all.' The possibility of inhabiting a common home contrasts with this scenario and hence '[t]he urgent challenge to protect our common home includes a concern to bring the whole human family together to seek a sustainable and integral development, for we know that things can change' (Encyclical Letter Laudato si' by Pope Francis on Care for Our Common Home). It is therefore imperative to defend and develop an integral ecology which calls for an openness to categories which transcend the language of the pure sciences and which connects us with that which makes us human. The road to the future and the protection of Individuals and the Planet must be travelled by practicing Fraternity and Social Friendship and by promoting constructive dialogue. This is the path towards the effective fulfilment of the common good. Only thus can the whole, the common house, become more than the sum of its parts.

Faced with the deterioration of our common home, we have the responsibility to adopt and implementing ways forward guided by strategic objectives that guarantee respect for the human person and social equity, for the environment and for economic development, geared towards the common good, in order to create communities which are prosperous, healthy, supportive, diverse and resilient, for this generation and for the generations to come. Alive to this reality, UCP's SDP (2021-2025) defines the strategic goals that should guide the institution's actions for each key dimension. The nine key dimensions are grouped into three areas – Mission Area, Resources Area and areas Transversal to all of UCP's activities and resources [11].

MISSION	RESOURCES	TRANSVERSAL
▸ Teaching	▸ People	▸ Global Positioning
▸ Research	▸ Economic	▸ Convergence
▸ University Social	and Financial	and Innovation
Responsibility	▸ Infrastructures	▸ Sustainability

STRATEGIC AREAS	STRATEGIC GOALS

Governance
To affirm its governance model in the face of new sustainability challenges.
	▸ **To make an institutional commitment to governance**
	  ▸ Ethics: Code and Process
	  ▸ Strategic Purpose and Quality
	  ▸ Stakeholder Management
	  ▸ Risk and Opportunity Management
	  ▸ Communication and Information Management
	  ▸ Compliance, Transparency and Accountability
	  ▸ Anti-Corruption Plan
	▸ **To commit to the United Nations – 2030 Agenda and the principles of the Global Compact – in the definition of socially and environmentally sustainable policies and practices**
	  ▸ Social Responsibility Policy
	  ▸ Human Resources, Equality, and Remuneration Policy
	  ▸ Active Parity and Work-Life Balance Policies
	  ▸ Environmental Policy (waste, space management, consumption, purchasing/sub-contracting)
	  ▸ Occupational Health and Safety Policy, including risk and contingency plans
	  ▸ Financial Resources Policy (financial and economic management and control, internal allocation model, economies of scale)

Environmental To be an environmentally-friendly university that promotes an environmental ecology.	▸ **To practice the Common Home – preparing citizens for the challenges facing the Planet as the basis of UCP's Mission** ▸ To promote and enhance collaboration in the environmental field, deepening the link to the SDGs (Sustainable Development Goals) and the LSGs (*Laudato si'* Goals)
Social To be a truly inclusive University, open to all, that promotes dialogue and a culture of care and decency of treatment.	▸ **To practice Fraternity and Social Friendship -** Preparing citizens for the challenges facing individuals as the basis of UCP's mission ▸ To promote a constructive dialogue between the University and society ▸ To promote and enhance collaboration in the Social field, deepening the link to the SDGs (Sustainable Development Goals) and the LSGs (*Laudato si'* Goals)
Economic To be a University that cares for all resources efficiently, effectively and fairly, for the common purpose.	▸ **To practice Fraternity and Social Friendship – preparing citizens for the challenges facing individuals as the basis of UCP's mission** ▸ To promote and enhance collaboration in the Economic field, deepening the link to the SDGs (Sustainable Development Goals) and the LSGs (*Laudato si'* Goals)

Sustainability is our responsibility, through the espousal and implementation of strategic goals that guaran - tee respect for the human person and social equity, for the environment and for economic development, geared towards the common good, in order to create communities which are prospe - rous, healthy, supportive, diverse and resilient, for this generation and for the generations to come. In recent years UCP has been developing, among others, the CASUS initiative – CAtólica for SUStainability – to highlight, cluster, and implement sustainability and/or social responsibility dynamics in its four campi, many of them already several decades in existence and widely known to in-house and external communities. UCP is committed to the promotion of sustainable development and the protection of the 'Common Home.' It thus works to make a coherent contribution to the 17 Sustainable Development Goals (SDGs) and

the UN's 2030 Agenda, in accordance with Pope Francis' encyclicals Laudato si' and Fratelli tutti, on Integral Ecology and Social Friendship respectively, from which the Seven Laudato si' Goals (LSG) also emerged. As a Higher Education Institution, it was necessary to resort to specific parameters for sustainability management and/or social responsibility in networks of which UCP is a member. As such, UCP resorted (for inspiration and the construction of its own model) to the parameters developed by the FIUC (International Federation of Catholic Universities) and ORSIES (Observatory of Social Responsibility and Higher Education Institutions). It based itself on FIUC's Newman Referential, due to its vital alignment with the Catholic identity, at an international level, and on François Vallaeys' model, employed in the Green Book on Social Responsibility and in Higher Education institutions, as well as ORSIES, since the latter has also been adopted by around three dozen Portuguese Higher Education Institutions. The construction of a sustainability management model encompasses four strategic areas: governance, environmental, social, and economic [11].

Governance

A sustainable and responsible University requires a commitment to a governance and management model that incorporates sustainability policies and practices. Therefore, UCP is making an institutional commitment to promote national alignment on: Code of Ethics and Conduct; strategic purpose and quality; stakeholder management; risk and opportunity management; communication and information management; compliance, transparency and accountability, and anti-corruption plan. It also embraces its commitment to the 2030 Agenda and the United Nations Global Compact, through the definition of socially and environmentally sustainable policies and practices, promoting, adding value and deepening its connection to the SDGs (Sustainable Development Goals) and the LSGs (Laudato si' Goals). Among others, it implements and monitors the following policies: Social responsibility; Human Resources, Equality and Remuneration; Parity and Work-Life Balance; Environmental; Safety, Occupational Health, and Financial Resources.

Environmental

For UCP, to be an environmentally friendly University that promotes an Integral Ecology means taking care of the Common Home and contributing to the development of an Ecological

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Economy, preparing citizens for the challenges facing the Planet, promoting, adding value and deepening the connection to the SDGs (Sustainable Development Goals) and LSGs (Laudato si' Goals). To be a University with a transformative process based on the search for simplicity that allows us to find financial and environmental sustainability in the efficient use of resources and respect for the Common Home. Thus, through a systematic analysis of environmental impact, there is a firm commitment to give back to the Planet more than we take from it, and to share and promote these values with the Academic Community.

Social

For UCP, to be a truly inclusive University, open to all, that promotes dialogue and a culture of care and decency of treatment, means to practice Fraternity and Social Friendship and to contribute to an Ecological Education, preparing citizens for the challenges facing Individuals, and promoting, adding value and deepening the connection to the SDGs (Sustainable Development Goals) and LSGs (Laudato si' Goals). To be a University that contributes to a better Humanity means knowing how to heed the Cry of the Poor and of the Earth, offering an active and effective response, based on Truth, Science and Christian Values.

Economic

For UCP, to be a University that stewards all resources efficiently, effectively and fairly, for the Common Purpose, means to practice an Integral Ecology, preparing citizens for the challenges facing Individuals and to promote, enrich and deepen the connection to the SDGs (Sustainable Development Goals) and LSGs (Laudato si' Goals). To be a University that promotes an Environmental Economy means to give back to society more than it receives, in the fulfilment of its Mission, guaranteeing its own economic sustainability and creating a virtuous circle of development alongside the community.

The responsibility of governance

Since Governance is understood as the system of rules, practices, and processes by which an organization is managed and controlled, this is a fundamental part of UCP's Agenda for Sustainability (2021-2025) as a strategic area of sustainability. UCP proudly adopts this

governance and management model, which includes sustainability policies and practices, with two goals: an institutional commitment to national governance policies and practices and the reiteration of its commitment to the United Nations and the 2030 Agenda and the Global Compact.

It is thus important to clarify a set of principles, inspired by the example of the FIUC (International Federation of Catholic Universities) and ORSIES (Observatory of Social Responsibility and Higher Education Institutions), which UCP's Governance presupposes and adopts.

a) Defining the goal

The organization's raison d'être, as an expression of the means through which an organization proposes solutions to economic, environmental, and social issues. The organization's goal should create value for all stakeholders.

b) Competences and responsibilities of management bodies

- Independence
- Participatory Management
- Relationship with entities
- representing members of the IES

c) Material issues impacting stakeholder

- Integration of Human Rights into the Institution's management process
- Recruitment and remuneration policy
- Personal and professional development
- Organizational environment and work-life balance
- Integration of School Social Action measures
- Quality of life, Health and Safety on campuses

d) Ethics procedures

- Periodic review of the UCP Code of Ethics and Conduct (CEC) and respective internal and external communication
- Management of knowledge of the CEC during welcoming of students, teachers, researchers, and support staff
- Communication, awareness, and recurrent training suitable for each of the target audiences

- Strengthening of internal and external communications regarding the channels available for information exchange (requests for clarification or complaints), with the explicit presumption of the principle of non-retaliation
- Annual reporting on the (anonymized and consolidated) activity of Ethics Providers on the four campi
- Participation and management of initiatives on Ethics, Social Responsibility or Sustainability.

e) To include the notions of risk and opportunity in the organization's procedures as well as subsequent actions

The organization's risk factor and the dissemination of opportunities that clearly mark out the main material risks being faced and the opportunities available, the organization's willingness to take on these risks, the way in which these risks and opportunities have changed throughout time and the response to these changes. These opportunities and risks must encompass actual economic, environmental and social issues, including climate change and data management.

- Organizational environment and work-life balance
- Environmental management system
- Environmental Education
- Supplier management system
- Communication characterized by Social Responsibility

f) Development of the strategic plan

Strategies for Social Responsibility and/ or Sustainability, namely in the disclosure of the material economic, environmental, and social goals planned for the year, their respective monitoring, and a clear understanding of how these goals contribute to long-term value.
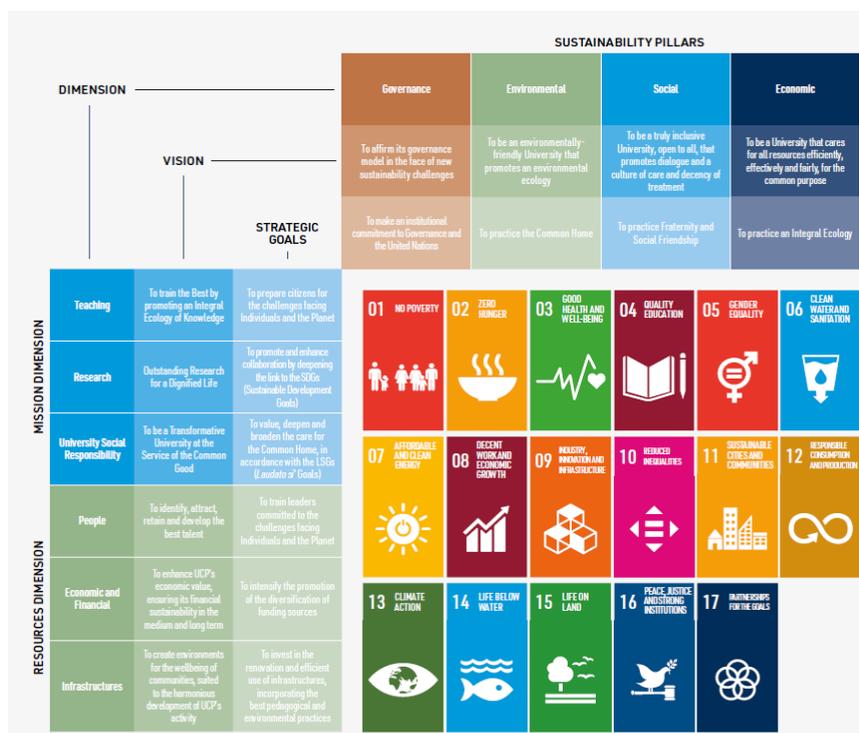
g) Transparency and regularity in the internal reporting of information

Introduction of structured reporting practices involving different decision- making levels, based on exactitude and with a view to an easier and common understanding, by all employees, in an effort of participatory management. Communication with Social Responsibility, through inclusive communication practices, favouring environmentally friendly forms of contact and using, whenever possible, one-to-one contact (providing accurate and complete information, both face-to-face and online during teaching hours.
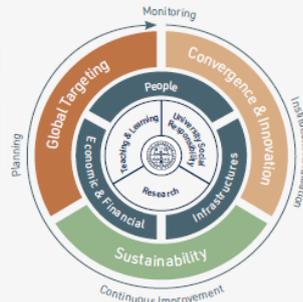
h) Clear communication and regular accountability towards key stakeholders

Existence of a communication policy that ensures timely and clear accountability for all involved, based on regular consultation and follow-up mechanisms. Annual publication of the Sustainability Report.

UCP's Agenda for Sustainability (2021-2025) represents a firm commitment by Universidade Católica Portuguesa over the next five years. The commitment to adopt and implement strategic goals that ensure respect for the human person and social equity, the environment and economic development and that are geared towards the common good, in order to create prosperous, healthy, supportive, diverse, and resilient communities for this generation and generations to come. A transversal and aligned commitment that calls for responsibility and is based on the transparency of the contribution of all towards the whole. An individual commitment to the future of UCP. A commitment based on an efficient management of resources that guarantees the global efficiency of the mission's activities, but also of support activities, through the implementation of projects able to create and add value

 to the University, based on a sustainable and diversified revenue model, sustainable and sustained by the mission. The commitment to do so with global thinking, focusing on the missions of teaching, research, and social responsibility. A solid commitment to the values of UCP, in the knowledge that we inhabit a Common Home, that we defend and develop an integral ecology and move towards the future by promoting a constructive dialogue and practicing Fraternity and Social Friendship [10].

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	MISSION			RESOURCES		
Dimension	Teaching	Research	University Social Responsibility	People	Economic and Financial	Infrastructures
Vision	To train the Best by promoting an Integral Ecology of Knowledge	Outstanding Research for a Dignified Life	To be a Transformative University at the service of the Common Good	To identify, attract, retain and develop the best talent	To enhance UCP's economic value, ensuring its financial sustainability in the medium and long term	To create environments for the wellbeing of communities, suited to the harmonious development of UCP's activity
Strategic Area	1.1. Learning in Innovative Environments 1.2. Global Education 1.3. Professions with a Future 1.4. Pedagogical Innovation 1.5. Formative efficiency / Teaching effectiveness	2.1. Research in context: strengthening discovery, promoting impact 2.2. Funding and Competitiveness 2.3. Open Science 2.4. Interdisciplinarity and Clusters	3.1. Social Empowerment 3.2. Value-added Knowledge and Service to the Community 3.3. Cultural and Artistic Service 3.4. Citizenship and Public Policies 3.5. Pastoral Care	4.1. Development and Management of Individuals 4.2. Talent Management 4.3. Organizational Culture 4.4. Training for the Future	5.1. Economic Perspective 5.2. Financial Perspective 5.3. Activity Perspective	6.1. Infrastructures as Activity Support 6.2. Safety and Well-being in Operation 6.3. Operating the Campus Sustainably

	TRANSVERSAL					
Dimension	Global Targeting	Convergence	Sustainability	Governance		
Vision	To strengthen UCP's global voice towards the Common Good	UCP: the Power of Identity in Diversity	To strengthen UCP's global voice towards the Common Good	To affirm its governance model in the face of new sustainability challenges		
Strategic Area	7.1. Internationalization 7.2. Alumni 7.3. Foresight & Scenarios 7.4. Smart Regions	8.1. Convergence Transformative Projects 8.2. Interdisciplinary Clusters 8.3. Major Infrastructure Projects	9.1. Governance 9.2. Environmental 9.3. Social 9.4. Economic			

Goals	Goal definition per strategic area
Targets	Target definition per goal
Indicators	Indicator definition per target
Initiatives	Presenting a set of initiatives that enable the achievement of the defined strategic goals

3.3. Strategies for integrating sustainable development principles into education at various levels

As humanity advances in the 21st century, the urgency of embracing a more sustainable approach in all areas of life becomes increasingly evident. Climate change, extreme weather events, environmental degradation and the scarcity of natural resources are imminent threats that demand immediate and significant action. In addition, growing economic and social inequality endangers social cohesion and political stability in many parts of the world.

In this context, education plays a central role in building a more conscious, responsible and sustainability-oriented society. The integration of the principles of sustainable development in education is critical to preparing future generations to face the complex challenges of our time and shape a more promising future. This is what gives rise to education for sustainable development (EDS) and the concept of green curriculum.

EDS involves the incorporation of themes, values and practices related to sustainability at all levels of education, from preschool to higher education. It aims not only to provide knowledge about sustainability issues, but also to promote a critical understanding of the interconnections between economic, social and environmental aspects of sustainability. The green curriculum, in turn, emphasizes the importance of addressing environmental issues in all academic disciplines. He acknowledges that sustainability is not only a concern for the environmental sciences, but a dimension that must be integrated into fields as diverse as mathematics, literature, economy, and politics.

The importance of an educational approach focused on sustainability is multifaceted. First, it prepares students to understand the pressing problems that affect the planet, enabling them to make informed decisions in their personal and professional lives. This is essential to address questions such as responsible consumption, resource conservation and climate change mitigation. In addition, EDS and the Green Curriculum foster active citizenship. By acquiring knowledge about sustainability issues, students are encouraged to engage in their community, influence public policies and participate in practical actions that contribute to a healthier and fairer environment. Interdisciplinarity is another key feature of this approach.

The complexity of sustainable challenges requires collaboration between various academic disciplines. Through the integration of sustainability in various areas of knowledge, students are prepared to address complex problems holistically, considering their social, economic and environmental implications. Education focused on sustainability also promotes ethical values, such as equity, environmental responsibility, and respect for diversity. It encourages students to adopt a set of values that enables them to make ethical decisions and to act responsibly in relation to the planet and society.

Strategies for integrating the principles of sustainable development with education at various levels are extremely important as they play a fundamental role in the formation of conscious, qualified citizens and committed to the construction of a more sustainable future. Here are some reasons that highlight the importance of these strategies:

- Awareness and Understanding

The integration of the principles of sustainable development in education allows students to understand the complexity of global challenges such as climate change, loss of biodiversity and social inequalities. This helps create critical awareness of the importance of adopting more sustainable practices.

- Preparation for the future

A sustainability education prepares students to face the challenges of the real world, equipping them with knowledge, skills, and attitudes to deal with complex environmental, economic and social issues.

- Active Citizenship

The incorporation of sustainability principles in education promotes active citizenship. Students are encouraged to engage in local and global issues, participate in community initiatives, and seek solutions to sustainability problems.

- Innovation and Creativity

The approach to sustainability in education stimulates innovation and creativity. Students are encouraged to find creative solutions for environmental challenges and develop new technologies and sustainable practices.

- Interdisciplinary Integration

Sustainability often requires an interdisciplinary approach, and education that incorporates these principles encourages collaboration between different areas of knowledge. This reflects the complex nature of environmental problems.

- Respect for diversity

Education for sustainable development promotes respect for diversity, including cultural, ethnic and biological diversity. This helps build more inclusive and equitable societies.

- Reduction of Environmental Impact

The principles of sustainability in education enable individuals to make informed decisions that lead to less environmental impact on their daily lives, such as dietary, transportation and consumption choices.

- Leadership Development

Through sustainability education, students are encouraged to become leaders in their communities and to promote positive changes toward a more sustainable future.

- Alignment with global objectives

The integration of principles of sustainable development in education is aligned with the United Nations Sustainable Development Goals (SDGs), which are global goals for facing challenges such as poverty, hunger, health and the environment.

- Crisis Resilience

A solid understanding of the principles of sustainability makes communities and societies more resilient to crises, whether environmental, economic or social. This helps to mitigate the adverse impacts of these crises.

- Global Responsibility

Sustainable education promotes global responsibility. Students recognize their interconnection with the world and their role in protecting the planet and supporting communities around the world.

3.3.1. Universidade Católica Portuguesa: Strategies for integrating sustainable development principles into education at various levels

Sustainability goals

- To ensure a system of stakeholder consultation in all strategic processes in order to manage risk and integrate opportunities.
- To regularly report on the institutional commitment to sustainability, ensuring transparency in relation to the progress achieved.
- To develop, create and implement policies within the scope of the Global Compact.
- To promote the implementation of Sustainability Policies at different institutional levels.
- To ensure that all students in degree-awarding courses attend SDG/LSG Modules.
- To raise awareness of and train on SDG and LSG.

These Sustainability Goals were integrated into the Mission or Resources dimensions of the 2021-2025 Strategic Development Plan, depending on their respective strategic objectives.

Sustainability is increasingly becoming a way of life for organizations, and it will only be truly lived and felt by all when it becomes pervasive in all strategic dimensions. We are aware that

sustainability strategies per se should not exist, since, by definition, these are the basis of any organization's strategy. Only then can it truly be an actor in the resolution of the numerous problems facing Individuals and the Planet. As such, the following describes how each of the different Mission and Resources dimensions should be understood from a Sustainability standpoint and the strategic objectives to be incorporated. Namely:

- Preparing citizens for the challenges facing the Planet and Individuals

Education is at the heart of the development of human beings and of the societies they are a part of, and at the core of education is quality and and up-to-date teaching available to individuals. We find ourselves at a crucial moment in the History of Mankind, when life on this planet is becoming unsustainable in many areas, from the environment to human rights, from ethics to all forms of discrimination, from poverty to working conditions. The awareness of these realities and the recognition of the the planet's limitations have been, to a large extent, globally accepted, and certainly the phenomena of globalization and new technologies will continue to exponentially increase this awareness. As such, and through exceptional teaching that enables a better understanding and preparation for action, UCP asserts its share of responsibility in helping the academic community find an answer to the environmental and social challenges that face the Planet and Individuals and that have been listed in the SDGs.

- To promote and value collaboration, deepening the link to the SDGs and LSGs.

Scientific research is one of the mainstays of academic activity that undergirds Teaching. It combines the curiosity that seeks to expand the boundaries of knowledge, the rigor of methodical and teamwork, and the purpose of contributing to the solution of problems and to the transformation of societies. Thus, UCP asserts that its strategic objective is to take the challenge of inter- and transdisciplinarity even further and to decidedly place its scientific research at the service of the SDGs/LSGs. On the one hand, the complexity of reality requires this collaborative work between different knowledges and teams. On the other hand, the magnitude of the challenges of a more sustainable integral development calls for scientific communities to concentrate their efforts on the horizon delineated by the SDGs/LSGs. In this way, UCP's scientific research will have a greater and more lasting impact.

- To add value, deepen and broaden the care for the Common Home, in accordance with the LSGs Laudato si' Goals)

At Universidade Católica Portuguesa we believe that social responsibility is responsibility. We stand before others and declare 'here we are', aware of our mission and bearing witness to the teaching community of our humanist core and Christian values. The moral responsibility of each individual is experienced at all times within a social dimension. Similarly, the social responsibility of each organization cannot be considered in a piecemeal fashion. As such, we want to maintain an open and fraternal dialogue, placing ourselves at the service of others, learning from others and from the community of which we are part, responding to the cry of the earth and the cry of the poor. Called upon to create an 'ecological citizenship' (Laudato si', no. 211), we are committed to training and educating all members of our academic community for a new global model that is fairer, more dignified, and more sustainable for all.

- To train leaders committed to the challenges facing individuals and the planet.
  - To welcome Diversity and ensure Inclusion.
  - To adopt policies and practices that value and promote the wellbeing and cohesion of the community.
  - To ensure the integral and continued training of individuals.

The challenge of leadership (a concept that goes far beyond 'formal leadership' and which should be understood as a continuous learning process leading to 'informal leadership') is by nature one of the greatest obstacles to achieving the goals set by any organization. Given the challenges currently facing humanity, responsible leaders who are aware of the social and environmental challenges ahead are necessary, now more than ever. While the training of leaders is always fundamental, it becomes even more so as we face challenges that can only be resolved through increasingly exacting leadership behaviors. 'Soft is the new Hard,' which is why recognizing the importance of Values, knowing what defines an inspiring Vision, accepting the importance of Innovation and Teamwork, understanding that the Trust placed in those who work with us is at the core of everything, appreciating the importance of recognizing the performance of others, of thanking and celebrating, understanding that human beings must forever remain at the center, all these are behaviors and practices that are increasingly required of responsible leaders. Hence the truly strategic importance of this Goal.

- To intensify the promotion of the diversification of funding sources.
  - o To ensure a Socially Responsible Investment Policy.
  - o To promote a culture and practices of transparency and accountability.
  - o To practice a sustainable purchasing policy and to promote socially responsible consumption.

UCP's very nature, as well as its sense of responsibility, impose a judicious and efficient management of its economic and financial resources. UCP is an institution that belongs to the so-called third sector, which combines institutions whose central element is a sense of mission, as opposed to the resources generated, and which, under no circumstances, are meant for the benefit of those who govern or manage it. In order to fulfil its mission, UCP counts on the resources generated through teaching and other services provided, namely, from its research and study centers, although there are many forms of support it offers those students who would otherwise be unable to meet the costs of tuition. Furthermore, there are several areas in which its teaching and research activity requires a high level of investment, thus being compelled to search for funding essential to add to the resources generated by its activity. The sources for this additional funding must be diverse, in order to reduce the risk of dependence that might jeopardize the effective pursuit of activities that are crucial to its mission. Additionally, the quest for the diversification of funding sources requires the crossing of borders in the search for partners to embark on joint paths with UCP. Quite often, this results in the opening up of new horizons and a joint growth in the development of skills and solutions to the challenges of sustainability.

- To invest in the improvement and efficient use of infrastructure, adopting the best pedagogical and environmental practices
  - o To prepare for the energy transition, and to reduce the environmental footprint
  - o To accelerate the digital transition in its various dimensions
  - o To ensure a responsible management of consumption (Plastic, Paper, Water and Energy)

At UCP, thinking about a digital future means planning and investing in infrastructure where the central focus is the concern for the future of Individuals and the Planet. Hence, the digital transition combines a commitment to pedagogical practices able to prepare citizens to face the

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new challenges and jobs of the future, and the construction or renovation of campuses equipped to resist climate change, thus laying the ground for the energy transition, reducing the ecological footprint, ensuring a responsible management of consumption, and taking into account social inclusion policies, thus ensuring universal accessibility. UCP provides environmental education grounded on sustainability, efficiency and accessibility criteria, providing Wellbeing to the entire academic community and thus promoting the Wellbeing of Humanity [10].

3.4. Best Practices and Case Studies

3.4.1. Conference Cycle on the SDGs

"Universidade Católica Portuguesa is an institution deeply committed to sustainability". It was with these words that Margarida Mano, Vice-Rector of Católica, launched the Cycle of Conferences on the Sustainable Development Goals (SDGs), on March 23. With the aim of leading by example in the fulfilment of the Sustainable Development Agenda, Católica is holding a Cycle of Conferences on the SDGs during 2023, focusing on the Environmental, Social and Economic dimensions. "We can look at the world through two lenses: we can focus on all the problems that exist, or we can look at the world through the lens of hope and the transformation we can make," said Filipa Pires de Almeida, Deputy Director of the Center for Responsible Business and Leadership. The researcher, an expert in sustainable strategies for business, explained that "the SDGs are an agenda that helps us look towards the other side of the world, towards the future. They are the most comprehensive agenda, and the only universal language we have as humans to lead us to the other side of the globe." Launched in 2015, this agenda includes 17 SDGs, agreed upon between 179 States, companies and Non-Governmental Organizations, with 2030 as the deadline to achieve these goals. However, for Mónica Dias, lecturer in the Chair on SDG 16 - Peace, Justice and Effective Institutions, "what matters is not whether we will reach this goal in 2030, but that we are acting". The lecturer and Vice-Director of the Institute for Political Studies highlighted that "these goals are a kind of beacon, a horizon, an expectation, for the future of the planet and of humanity". Also present at the conference, Sofia Monteiro, President of the Academic Association of the Católica Faculty of Law, in Lisbon, spoke about the problems of higher education in Portugal and the SDGs that most impact students: quality education, gender equality, action against global climate change and peace, justice and effective institutions. "We are part of the solution, as leaders of the future," she said about all young people. The law student suggested that for

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young people to get in touch more directly with the SDGs, they should start from the beginning of their degree, with practical projects, in their different areas of study. Closing the conference, Filipe Santos, Dean of Católica Lisbon School of Business and Economics, recalled that "having this agenda is fundamental" for the action of individuals, companies, universities and governments to go beyond what is "comfortable". "We cannot remain indifferent to the challenges that exist in the world and we have to take responsibility," he concluded [12].

3.4.2. SDGs Week

The SDG Week, organized by the Center for Responsible Business & Leadership, was a significant event that aimed to promote knowledge and engagement around the United Nations' 17 Sustainable Development Goals (SDGs) and their strategic importance for the corporate sector. This event, which had already taken place, was designed to foster a deeper understanding of the SDGs and to inspire action among various stakeholders.

The SDG Week comprised six sessions that were held on the CATÓLICA-LISBON campus and simultaneously live-streamed via Zoom, making the event accessible to a global audience. These sessions served as a platform for dialogue, collaboration, and the exchange of ideas among experts, academics, businesses, and students who shared a common interest in sustainability and the SDGs.

One of the highlights of the SDG Week was the participation of renowned guests from various sectors, including representatives from the United Nations, other academic institutions, and businesses that are actively engaged in pursuing sustainable practices. These guest speakers brought diverse perspectives and valuable insights into the importance of aligning corporate strategies with the SDGs.

Throughout the event, attendees had the opportunity to participate in different workshops and panels led by experts. These sessions focused on sharing best practices and showcasing real-world business cases related to the SDGs. By learning from these experiences, participants gained practical knowledge on how to integrate sustainability into their organizations and contribute to achieving the SDGs.

An important feature of the SDG Week was the screening of the documentary titled "The Decade of Action." This documentary, lasting 30 minutes, provided a thought-provoking exploration of sustainability and why businesses need to fully commit to achieving climate

goals and the SDGs. It underscored the urgency of taking action to safeguard the environment for future generations.

In addition to watching the documentary, attendees had the opportunity to engage in meaningful conversations with individuals responsible for its creation. This interactive discussion allowed participants to delve deeper into the documentary's themes and gain further insights into the challenges and opportunities associated with sustainability.

As part of the SDG Week's agenda, an interactive session was organized to celebrate Portuguese National Sustainability Day. During this session, students had the chance to enhance their knowledge through engaging dynamics and a business modeling game. This hands-on approach helped participants develop a deeper understanding of sustainability concepts and their practical applications.

Overall, the SDG Week served as a crucial platform for raising awareness about the SDGs, fostering collaboration among different stakeholders, and showcasing the role of businesses and organizations in driving sustainable development. By bringing together experts, academics, and students, this event not only promoted knowledge sharing but also inspired concrete actions toward achieving a more sustainable and equitable world. It emphasized that collective efforts are essential to address the pressing global challenges and work towards a better future for all [13].

3.4.3. SDGs Curricular Units

The United Nations' 2030 Agenda for Sustainable Development consists of 17 Sustainable Development Goals (SDGs) aimed at creating a global model to eradicate poverty, promote prosperity and well-being, protect the environment and combat climate change. To raise awareness of these common and global challenges, the Universidade Católica Portuguesa launched, as part of its Strategic Development Plan, the innovative Strategic Initiative called

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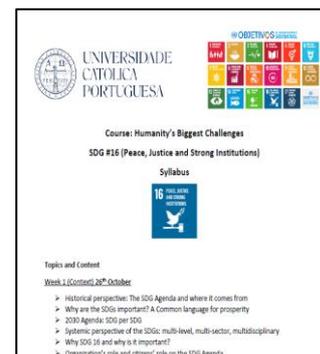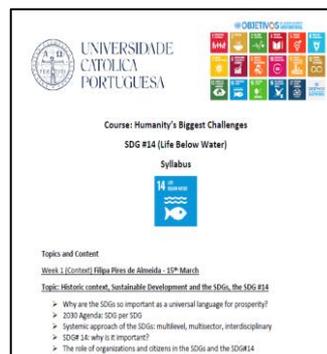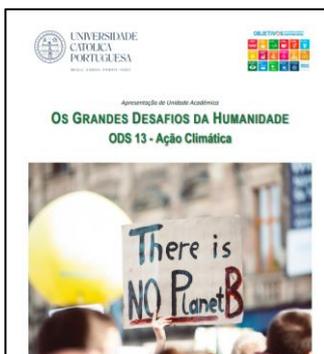
"SDG Curricular Units". This initiative aims to introduce in the academic curriculum of 1st cycle students, subjects specifically dedicated to the study and understanding of several SDGs. Scheduled to start at the beginning of the second semester of the current academic year (2021/22), the "SDG Curricular Unit - Humanity's major challenges" will cover, in a first experimental phase, SDG #13 (Climate Action), due to its importance within all the grand challenges. For the 2022/23 academic year, three more ODS Curricular Units will be developed, which may include students from other study cycles [14].

Characteristics

- Elective (optional) chair of 3 ECTS
- 2nd semester
- Six classes of 3 hours each (18h without total)
- taught by four teachers (from UCP different colleges)
- Online classes
- in Portuguese and English
- The first 5 subscribers from each college have a guaranteed place
- Maximum of 45 students per course

Objectives

- Understanding the challenge placed by SDG 13 (climate action), in the context of the United Nations 17 SDG, as a universal and strategic language for the future of humanity.
- Approach SDG 13 (climate action) from an interdisciplinary perspective: science, theology, law, economics and management.
- Understand the practical scope of SDG 13 (climate action) at the level of state, organizations and civil society.

Topics

- Context: What are the SDGs and why the SDG 13
- Theology: Climate, Common House and Anthropology
- Science and Technology: the facts of climate change
- Law: Global Law of Climate Change
- Management: management that creates value and that extracts value

Methodologies

- Interactive exposure
- Group and individual work
- Video Viewing
- Case discussion

Evaluation

- Group work on recent weather controversy that will be developed throughout the various classes.
- The groups will be composed of students from the various colleges and the interpars evaluation will be a component of the final grade.

3.4.4. Ecothophelia Portugal Competition

The Ecotrophelia Portugal Competition is a significant initiative aimed at fostering innovation, competitiveness, and academic entrepreneurship within the agrifood sector. This competition plays a crucial role in promoting sustainable and eco-innovative food and drink products while also providing a platform for talented students to showcase their creativity and skills. Let's delve deeper into the key aspects of this competition as outlined in its regulations.

The primary objective of the Ecotrophelia Portugal Competition is to encourage innovation and entrepreneurship, particularly within the agrifood sector. By providing a platform for students to develop sustainable and eco-innovative food or beverage products, the competition nurtures a culture of creativity and forward-thinking.

The competition is organized and promoted by PortugalFoods, an association established in 2008. PortugalFoods brings together various stakeholders, including companies, entities from the national scientific and technological system, as well as regional and national entities representing different subsectors of the Portuguese agrifood industry. This collaborative effort ensures a holistic approach to addressing challenges and opportunities within the sector.

One of the key roles of the Ecotrophelia Portugal Competition is to identify the Portuguese representative for the European competition, Ecotrophelia Europe. This provides an excellent opportunity for Portugal to showcase its innovative and sustainable food products at a broader international level. Participation in the competition is open to teams of students who meet

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specific criteria. Each team must consist of a minimum of two and a maximum of six students, all of whom should be aged 35 or under. Moreover, participants must be enrolled in a Portuguese higher education institution. This inclusive approach ensures that a diverse range of students can contribute their ideas and expertise.

The competition benefits from the insights and expertise of a National Jury composed of representatives from the agri-food sector. These jury members are selected for their notoriety, independence, and specialized knowledge in food innovation. Their role is pivotal as they assess the projects and select the competition's winners.

The Ecotrophelia Portugal Competition recognizes and rewards outstanding efforts. The winners are bestowed with prestigious ECOTROPHELIA Portugal awards, including Gold (€2000), Silver (€1000), and Bronze (€500). These awards serve as incentives and acknowledgments of the students' dedication to developing eco-innovative and sustainable food or drink products [15].

3.4.5. Innovation Track Program and Contest

The Innovation Track Program and Contest (ITPC) organized by the Escola Superior de Biotecnologia da Universidade Católica Portuguesa (Faculty of Biotechnology of the Catholic University of Portugal - ESB-UCP) spanned three editions from 2017 to 2020. This initiative had a clear objective: to promote academic entrepreneurship by identifying innovative product and service ideas and supporting participants in their journey towards presenting these innovations to stakeholders in the economic sector and launching them into the market. The program aimed to encourage the presentation of these eco-innovative products at food fairs, technical and scientific gatherings, and entrepreneurship competitions to attract potential investors.

Here's an overview of the key elements and phases of the ITPC:

- Idea Submission and Evaluation: Teams interested in participating in the contest had to complete a survey outlining their project idea. They needed to articulate how their idea addressed market needs, identified their target audience, and highlighted its innovative dimension. A jury of experts in the agri-food sector evaluated these proposals. Only teams with well-structured ideas that demonstrated a strong understanding of sector needs and offered innovative solutions were admitted to the contest.

- Eligibility and Partners: The ITPC was open to student teams with a focus on the agri-food sector, preferably consisting of three or more members who were graduates or had competencies at a higher education level related to product and service development. While teams from any higher education institution could participate, there was a particular emphasis on promoting the contest in the northern region of Portugal. ESB-UCP collaborated with various partners, including agri-food sector clusters, business mentor associations, alumni associations, companies, and investors, to execute the ITPC effectively.

- Four Phases: The ITPC consisted of four phases: Admission, Development of Innovation Plans, Presentation of Products and Services in Media and Events, and Attribution of the BIOTEC INNOVATION Awards.

Participants in the ITPC were required to submit three key deliverables:

- Product Specifications: This included technical details such as product composition, manufacturing processes, safety considerations, materials, providers, storage conditions, packaging, distribution logistics, innovative features, and eco-innovative aspects.

- Business Plan: Teams were expected to analyze their product or service from a market perspective, including market analysis (consumption trends, competition analysis, targeting, and positioning), business strategy (business model, validation by potential customers), "Go to market" plan (development and marketing plans), and financial forecasts.

- Prototype: The final deliverable was a completed version of the product or service, representing a tangible realization of their innovative idea.

Participants in the ITPC were provided with business mentors who guided them throughout the development of their business plans, helping them gain a more realistic perspective of the business landscape. Each edition of the ITPC had two award calls, aligning with the academic semesters. These calls served as milestones for teams to showcase their progress and compete for recognition and awards.

Overall, the ITPC served as a dynamic platform for fostering innovation, supporting academic entrepreneurship, and connecting students with the agri-food sector. It encouraged students to leverage their knowledge and skills to develop sustainable and innovative solutions, reinforcing the importance of higher education in

driving progress and innovation within the industry [16].

3.4.6. Implementation of Problem-Based Learning within the Innovation Track Program and Contest

The implementation of Problem-Based Learning (PBL) within the Master's program involved a strategic approach that aimed to enhance students' engagement and promote real-world problem-solving skills, particularly in the context of circular economy, food sustainability, food security, nutrition, productivity, and related areas. This approach was developed in collaboration with the Innovation Track Program and Contest (ITPC), which served as a motivating factor and a practical application of the skills and knowledge gained during the program.

Here's a breakdown of how the PBL approach was integrated with the ITPC and its impact on the curriculum:

- Problem Identification and Solution Development: At the beginning of the Master's program, students were organized into groups and tasked with identifying a real-world problem related to various aspects of the agri-food sector, including circular economy, sustainability, and nutrition. The challenge was for each group to propose an innovative solution by developing a new product or service that addressed the identified problem. This initial phase allowed students to engage directly with practical challenges in the field.

- Integration of PBL with the ITPC: Simultaneously, the ITPC was launched and integrated into the curriculum as a motivating force for more in-depth work on the identified problems. This integration involved collaboration among different academic units and encouraged interdisciplinary experiences. In other words, students were not only tasked with identifying problems but also with developing tangible solutions that could be presented in the ITPC.

- Alignment with Curricular Units: The deliverables required for submission in the ITPC, such as product specifications, business plans, and communication plans, were also considered as assignments for different curricular units within the Master's program. This alignment ensured that the work done for the ITPC was an integral part of the students' academic journey, reinforcing the connection between theory and practice.

- Benefits for Participants: Students who participated in the ITPC not only had the opportunity to develop innovative solutions but also benefited from various support

mechanisms. This included guidance from business mentors and support for participating in events and engagements with stakeholders. These experiences enriched their educational journey and exposed them to the practical aspects of entrepreneurship and innovation.

- Assessment and Evaluation: The performance on the work related to the PBL approach and the ITPC was a mandatory component of the curriculum, with a minimum weight of 20% in the final evaluation of each relevant Curricular Unit. This approach emphasized the importance of problem-solving and innovation in the students' academic progress.

- Encouraged, but Not Mandatory: While participation in the ITPC was encouraged, it was not mandatory, and there were no penalties for students who chose not to compete. This flexibility allowed students to engage with the ITPC based on their interests and availability.

In summary, the integration of PBL with the ITPC created a dynamic learning environment where students not only acquired theoretical knowledge but also applied it to real-world challenges. This approach promoted critical thinking, problem-solving skills, and interdisciplinary collaboration while allowing students to explore innovative solutions to pressing issues in the agri-food sector. It reinforced the idea that education goes beyond the classroom and should prepare students to address complex, real-world problems [16].

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