STRATEGIC PLAN 2021 – 2030

CIÊNCIA VIVA

National Agency for Scientific and Technological Culture
Lisbon, December 2020

STRATEGIC
PLAN
2021
–
2030

CIÊNCIA VIVA

CONTENTS

What's wonderful about science

is that it is Alive.

Richard Feynman

Ciência Viva

Identity, mission, values

Who we are

We inspire and mobilise through science.

This is our identity.

And we can't do it alone: we count on schools, universities and research units, museums and science centres, municipalities, associations and other bodies working in this area.

Mission

Active citizenship based on scientific knowledge.

Values

We believe in social progress based on curiosity, creativity, critical thinking and the involvement of everyone.

Associate members

Established as an association in 1998, with publication in *DR* Series III, No. 256/98, Ciência Viva – National Agency for Scientific and Technological Culture works with the support of a board of associates representing nine associate laboratories of merit in different areas of scientific and technological research and two institutions that promote research in Portugal (FCT) and foster innovation (ANI).

FCT *Foundation for Science and Technology*

CNC *University of Coimbra Centre for Neuroscience and Cell Biology*

CES *Centre for Social Studies*

IT *Telecommunications Institute*

ICS *Institute of Social Sciences*

IBMC *Institute for Molecular and Cell Biology*

IPATIMUP *University of Porto Institute of Molecular Pathology and Immunology*

ITQB *Institute of Chemical and Biological Technology*

ANI *National Innovation Agency*

LIP *Laboratory of Instrumentation and Experimental Particle Physics*

INESC TEC *Institute for Systems and Computer Engineering, Technology and Science*

Strategic Goals

Ciência Viva was formed with a clearly defined purpose in mind: supporting basic scientific education, with experimental science teaching, and promoting scientific culture in Portuguese society.

The projects undertaken and their impact over 25 years are widely documented in the Ciência Viva Archives, which were set up in 2015.

The 2021-2030 Plan presented here is based on five strategic goals that derive from our mission and seek to respond to fundamental challenges for the development of Portuguese society today and over the next decade:

1.

Qualifications and skills in science, technology and innovation

2.

Access to global knowledge for all

3.

Social and geographical cohesion based on knowledge and action networks

4.

Sustainability and social inclusion

5.

Strengthening the internationalisation of scientific education and culture networks

STRATEGIC PLAN 2021–2030

Strategic Goal 1

Qualifications and skills in science, technology and innovation

1.1
Supporting scientific
and technological education
and technology in the school system

1.2
Attracting young people into careers
in science, technology and innovation

1.3
More science and technology
for greater and better employability

Strategic Goal 1

Qualification and skills in science, technology and innovation

The promotion of skills in science and technology, particularly through experimental science teaching, is the basis for the formation of Ciência Viva. Qualification and skills in STEM (Science, Technology, Engineering, Mathematics) have been directly linked to higher levels of productivity and innovation, resulting in higher rates of development and social wellbeing.

The 2018 PISA report, which analysed the results of education in three-year cycles, showed Portugal as one of the 13 countries with a significant rise of a further 4.3 points in science assessment. 80% of Portuguese students achieved Level 2 science proficiency, which was than the 78% average in OECD countries. At performance levels that require mastery of more complex tasks (Levels 5 and 6 on the science proficiency scale),Portugal's results were still below the OECD average[1].

1
http://iave.pt/images/FicheirosPDF/Estudos_Internacionais/PISA/resultados2018/RELATORIO_NACIONAL_PISA2018_IAVE.pdf

With the increasing complexity of societies and diversification of products and services generated by the economy, the STEM paradigm has evolved progressively and resulted in transversal integration of scientific areas. The use of engineering and technology, along with the social sciences, to solve real-world problems highlights critical thinking, creativity, humanities and ethics, which are part of the new paradigm.

Therefore, we soon followed the evolution of the acronym STEM to STEAM

and we have included the arts more regularly in our approach to science, both in school, science and society settings. Artist residencies, music education and partnerships with art schools are evidence of this. One example of the most recent programmes was the jewels of science, which was developed into a remarkable exhibition. But the qualifications and skills that are asserted in the area of innovation must be open to new, intertwined know-how, which evolves into innovative products. We therefore decided to adopt the acronym **STEAMD**, in which design joins science, technology and innovation for technologically cutting-edge products. One example is the spacesuit devised by Dawa Newman at NASA and presented at the Pavilion of Knowledge.

This is where Ciência Viva is currently positioned, in the knowledge that there can be no wellbeing or economic development without a qualified population, or innovation without the skills that stimulate it.

This strategic goal pursues three lines of action.

1.1
Supporting scientific and technological education in the school system

Ciência Viva Academy

The Ciência Viva Academy supports teachers at all levels of education by providing resources and organising training and curriculum enrichment programmes for primary and secondary education. The approach followed is in line with current IBSE (Inquiry Based Education) and Open Schooling trends, with special focus on the following areas:

SPACE | PLANET WATER | LEARNING OUTSIDE THE CLASSROOM | HEALTH

Digital transition in schools

Ciência Viva has been forming partnerships with universities, research units and companies in the digital sector to foster the digital skills of primary and secondary school students. The next decade will witness a significant digital transition for which schools will have to be prepared. It is therefore essential to strengthen existing partnerships, and also introduce new areas such as data science, machine learning and artificial intelligence, with the support of specialists and companies in these sectors.

Partnerships to combat educational underachievement

Portugal stands out as one of the countries that has improved most in terms of school attainment. Early school leaving currently stands at 10.6%, close to the European target of 10% (*Education and Training Monitor 2019*[2]) although it is not yet among the best performing European countries in this area. The Pavilion of Knowledge team and Ciência Viva Centres Network have set up partnerships with municipalities that will continue to help improve these results, which are essential for the development of an inclusive society.

2
https://ec.europa.eu/education/policy/strategic-framework/et-monitor_en, p 52

Support for S&T initiatives for young people

Ciência Viva has been a reference in helping to foster an appetite for and skills in science in primary and secondary school students. The various Olympiads, robotics competitions, Mathematical Games Championship are examples. Up to 2030 we expect to maintain and step up this support and diversify the disciplinary areas included within the context of **STEAMD**.

1.2
Attracting young people into careers in science, technology and innovation

The number of students enrolled in higher education has been increasing in Portugal, especially in the areas of in science and technology. However, the areas of engineering and digital technologies are still insufficient to meet the development needs of an increasingly digital economy. In particular, there is much room for improvement in female involvement in these areas. This line of action consists essentially of the following programmes:

Scientific apprenticeships for youngsters – Ciência Viva in the Lab

This core Ciência Viva programme has been going non-stop for over 20 years. Upper-secondary students join research teams all over the country where they work on tasks ranging from lab or field work to data analysis. The internships take place during school summer holidays and allow students to learn about the methods and procedures of science first-hand. Given the growing involvement of companies in research and development, Ciência Viva will include more and more businesses in its scientific apprenticeships for youngsters.

Promotion of gender equality in engineering and digital technologies

The percentage of girls in STEM areas at universities is 57%, well above the average of 39% in the other OECD[3] countries. However, they are still in the minority in digital technologies and engineering, and the take-up of more girls in these areas of knowledge can also make an important contribution to an overall increase of skills in these areas. Ciência Viva will step up its existing collaboration with the Engineers for a Day programme for women, which has the support of the Secretary of State for Citizenship and Equality, and set up a mentoring programme for girls, involving engineering and digital technology professionals.

Collaboration with the National Space Strategy

The National Space Strategy provides for doubling the investment over the next decade, aimed at creating new jobs for which motivation and qualifications are essential. Ciência Viva works with the Portuguese Space Agency (PT Space) in motivating young people to pursue careers in space engineering and science.

Support for other entities' initiatives

Ciência Viva will continue to form partnerships and support initiatives undertaken by other entities to promote scientific careers among young people.

Promoting an anthropocene observatory

Ciência Viva, in cooperation with universities and research units, will actively participate in the international debate on the Anthropocene, a new geological epoch marked by the profound impact of human beings on planet Earth. There is now a broad mobilisation of public opinion in the discussion on climate change, one of the most obvious manifestations of this new era. National and international partnerships will be formed to provide a comprehensive, transversal and interdisciplinary approach to this scientific subject, which should be included in the education system's syllabus.

3
Education at a Glance, https://www.oecd.org/education/education-at-a-glance-19991487.htm/?refcode=20190209ig

1.3
More science and technology for greater and better employability

Adult education has developed positively in our country but the population covered is still below the European average. There must be a concerted effort among the different national players to meet the needs that still exist. Other aspects to consider are the introduction of science and digital technologies into traditional professions and the emergence of new careers in science and technology.

It should be noted that the percentage of female ICT graduates in higher and polytechnic education went down from 26.24% in 1999 to 21.34% in 2019, (667 of 2,542 in 1999 > 1,425 of 6,679 in 2019). According to EUROSTAT the percentage of female ICT students is below the EU 28 average: 12% vs. 17%. Other EUROSTAT figures also show that the percentage of women enrolled in ICT is lower in the lower levels of education (10.55% at the end of secondary school) and much higher in master's degrees (28.38%) and doctorates (23.63). But it is much lower in vocational technical higher education (7.12%).

Although the use of ICT at work is relatively close to the European average, this is mainly as a consumer/user rather than in the development or maintenance of ICT products (only 3% vs. 6% of men). Compared to the EU28, Portuguese women have less ongoing training in ICT. We therefore believe that there should be better conditions for women's access to ICT, as this is related to better access to sectors and careers with guaranteed growth.

This line of action will build on the European Recovery and Resilience Facility in the following initiatives:

Training of adults in agricultural and environmental technologies

The European "From Farm to Fork" Strategy provides for training farmers to develop safe, sustainable food production strategies that comply with European regulations and to make the most of the EU funds made available for this purpose. Ciência Viva Farms and Ciência Viva Centres will form an appropriate support network for these activities.

Adult Training for the Blue Economy

The European Union Blue Growth Strategy and the Decade of Ocean Science for Sustainable Development make it essential to understand the impacts of human activity on the ocean and the use of new technologies and equipment to improve safety and productivity. We will set up partnerships with research units, non-governmental organisations and public institutes to collaborate in the training effort that will be required over the next decade.

Adult courses in the environment and sustainable development

The European Green Deal Strategy provides for carbon neutrality for Europe by 2050 and a progressive shift towards a circular economy. This strategy is designed to create "green jobs" for which it will be necessary to improve the population's skills.

Adult learning in ICT by fostering improving access to information technologies

Adult training programmes should be created in partnerships with associations, with special emphasis on those working with women.

Strategic Goal 2

Access to global knowledge for all

2.1
Supporting the scientific community
and higher education institutions
in the dissemination of knowledge

2.2
Promoting access to knowledge
and quality of public science communication
and scientific journalism in Portugal

2.3
Promoting science tourism

Strategic Goal 2

Access to global knowledge for all

This strategic goal pursues three lines of action.

2.1 Supporting the scientific community and higher education institutions in the dissemination of knowledge

One of the main purposes of Ciência Viva is motivating and inspiring people to take an interest in science. To this end, partnerships based on mutual trust and respect have been formed with research units, higher education institutions, schools, museums, science centres, municipalities, associations, scientific societies and companies with research and development.
This line of action is currently based on three programmes:

Celebration of important dates relevant to scientific culture

This Ciência Viva core programme began with the celebration of **National Scientific Culture Day**, on 24 November, in honour of Romulo de Carvalho. It evolved into **Science and Technology Week**, where different organisations inform the general public about the science that is happening in Portugal. During the week, research units, higher education institutions, schools, museums, science centres and other bodies organise different types of activities that are run by scientists and open to the public and schools. The Ciência Viva Awards, which recognise people or institutions of high merit in the categories of Grand Prize, Education Award and Media Award in Portugal.

In addition to these dates, in 2016, **National Scientists' Day** celebrated researchers' contribution to society. The Portuguese Parliament set it up for 16 May in honour of José Mariano Gago. Every year, it is celebrated in a theatre in a different city for a wide audience.

Dissemination of science to policy makers: Science Café in Parliament

Ciência Viva core initiative in collaboration with the Parliamentary Science Committee to foster debates among scientists, parliamentarians and entrepreneurs and support political decisions on scientific knowledge. It is designed to disseminate knowledge specifically aimed at Members of Parliament.

Support for S&T initiatives

Ciência Viva supports and encourages knowledge dissemination initiatives on the part of other entities and regularly organises public calls for tenders appraised by external evaluation committees.

2.2
Promoting access to knowledge and quality of public science communication and scientific journalism in Portugal

Partnerships for postgraduate training in scientific culture

After 25 years of experience in scientific culture, Ciência Viva will form partnerships with renowned national and international higher education institutions to share knowledge and validate experiences and good practices. To this end, contacts will be made and strengthened in order to set up postgraduate courses in the promotion of the population's scientific culture and the dissemination of science. The aim is to consolidate a new conceptual and methodological framework that fits in with the dynamic reality of the relationship between science, technology and society.

Cultural cooperation

Coordination with cultural areas is important for the pursuit of STEAMD projects and educational activities by promoting meetings and conferences to share experiences.

Mariano Gago Scholars

The mission of the Ciência Viva Archives is to process, preserve and disseminate their collection, which began on the first day of Ciência Viva's work in 1996. It is a depository of knowledge set up from the document collection of Ciência Viva – National Agency for Scientific and Technological Culture. The Ciência Viva Archives currently consist of about 7,000 files and thousands of iconographic elements. They not only characterise the institution, but also foster an understanding of its path in the promotion and dissemination of scientific and technological culture and the experimental teaching of sciences in Portugal. The Ciência Viva Archives fulfil their role with the public, and especially researchers, as part of a policy of sharing and disseminating knowledge, while also caring for the collective memory.

Beginning in 2021, Ciência Viva will regularly award short-term grants in partnership with higher education institutions, as part of a programme to promote research into the historical role played by Ciência Viva since it started working in the areas of scientific culture and communication. This programme is aimed at researchers with links to national and international teaching or research institutions. It will enable us to increase the visibility of the Ciência Viva Archives and encourage access to their collection.

Science in the Regional Press

A portal for providing validated scientific content to assist regional media that do not have journalists specialising in science and technology. It is important to encourage researchers in this growing collaboration and to permanently embed science in society.

2.3
Promoting science tourism

Ciência Viva Journeys

The Ciência Viva Journeys project was launched on 6 February 2017, with the motto "Let your curiosity guide you!". It was born from the capacity in place across the Network of Ciência Viva Centres with the goal of stimulating science tourism in Portugal. It uses a card, a guide and a mobile phone app to provide suggestions for science, culture and history tours throughout the country. The project is sponsored by the Vodafone Foundation, INATEL, CP, GALP and Movijovem, with more than 200 partners in the areas of leisure, culture and catering that make it possible to offer 19 journeys, 57 tours and more than 200 stages to explore. And it is still growing. The next few years will therefore involve consolidation of all the existing potential while also diversifying tours and expanding the network of partners. This will actively involve more and more interested people. This innovative, high-quality science tourism will grow and develop in partnership with Turismo de Portugal. It aims to soon join the prestigious The Explorers Club, which promotes scientific exploration in real nature environments around the world. Founded in New York in 1904, it has served as a meeting place for global explorers and scientists.

Strategic Goal 3

Social and geographical cohesion based on knowledge and action networks

3.1
Strengthening the role of Ciência Viva Centres as focuses for regional stimulation

3.2
Strengthening the role of Ciência Viva Centres in supporting the education system

3.3
Strengthening the role of the Pavilion of Knowledge in supporting Ciência Viva knowledge networks

3.4
Formation of new spaces to enhance inland areas: Ciência Viva Farms

Strategic Goal 3

Social and geographical cohesion based on knowledge and action networks

The creation of themed scientific cooperation networks has been a priority since the beginning of Ciência Viva.

The question that is always present in this ongoing work is:
what does a network need to exist continuously and sustainably?
Our experience of working in networks tells us that:

a) There has to be a common challenge, a concrete activity, a project;

b) we have to keep the network active; for this to happen, there must be regular interactions between its centres and it is essential for something to always be happening;

c) there have to be results: a functioning network is associated with a gain for its members, which may sometimes be material, but above all must be affective, instilling a feeling of belonging, offering greater access to resources and knowledge and consequent visibility to the general public.

The big challenge is how to permanently maintain, solidify and grow this Ciência Viva Network of ours. And we say our Ciência Viva Network because it belongs to everyone. Researchers, students, teachers, families, people. It is from our country and has extended alliances beyond borders, where its work has been recognised.

How has the Portuguese experience shown that it could be better?

1. It has showed the advantages of distributing communication so that it comes not only from scientific institutions, but also from other participants, such as schools, associations and museums, in order to involve a variety of audiences.

2. It has allowed direct, personal involvement between scientists and non-scientists. And young people in particular benefit from direct contact with researchers.

We know how fundamental schools are. Renovating science education without bringing it closer to science and those who produce it can never result in roots and continuity. There's still a lot to do. While assessing existing barriers, we need to focus our energies on the potential of science and its dissemination.

Political support is essential for the networks to continue to operate. We also need the huge, continuous support of the scientific community, a remarkable example at European level.

We are talking about Ciência Viva Centre Network, the Ciência Viva School Network, the Ciência Viva School Club Network and the Ciência Viva Farm Network.

Ciência Viva – National Agency is the driving force of this network and makes multiple formal and informal connections. There is no network for activity leaders in schools or for the public. There is a common network for scientific culture, dissemination and education at all levels, from cultural and social to territorial and economic. We are talking about cohesion.

This strategic goal pursues four lines of action.

3.1 Strengthening the involvement of Ciência Viva Centres as focuses for regional stimulation

The SARS-CoV-2 pandemic outbreak has posed new and complex challenges to these institutions. To a large extent, they have had to redefine their mission and reschedule their activities, reinforcing their primary mission, which is focused on science education and sharing knowledge.

The next few years will naturally witness a progressive return to normality, and the Ciência Viva Centres must continue to strengthen their relations with institutions and the local community. They must assert themselves as essential intermediaries between science and society and boost new projects as part of the plan for regional development, in line with national scientific policy and with the best international practices.

Since 1997, the Ciência Viva Centre Network has been an important factor in the dissemination of scientific culture in the country. It should be noted that its model is an aggregating force of wills and partnerships, at national and local levels. Scientific and higher education institutions, municipalities and the Ciência Viva National Agency are the driving forces behind these modern scientific museums, which are located in landmark buildings that have been converted into temples of science, knowledge and innovation.

The Ciência Viva Centres are therefore non-formal learning platforms and interactive spaces for scientific dissemination that contribute to regional development. This nationwide scientific and technological dissemination network represents one of the lines of Ciência Viva's action and has already had more than 10 million visitors. This network also represents an important social and economic value involving around 400 qualified personnel.

These resources represent Ciência Viva's action areas in education and scientific culture, with specialisation in science communication.

The training component has been strengthened in Portugal and abroad with powerful, permanent international cooperation and also in exhibitions.

When it comes to sharing of knowledge on a national scale, since 1996 the Ciência Viva Science in Summer Network initiative has been the largest science dissemination programme for the general public in Portugal. This is thanks to the diversity of scientific areas, geographical scope and decentralisation of events, but above all to the number of stakeholders, audiences and developers.

Ciência Viva Centres are the structuring elements of these campaigns. Their basic principles are decentralisation and appreciation of the regions, with the autonomy and capacity to support scientific and higher education institutions that organise thousands of science-sharing events throughout the country. The Ciência Viva Centre Network has 20 facilities. There are still new ideas and plans for their expansion and we intend to respond to new applications for membership, while also developing existing facilities.

3.2 Strengthening the role of Ciência Viva Centres in supporting the education system

The Ciência Viva Centre Network plays a key role in supporting local schools, in close liaison with the education community, especially thanks to the outstanding teachers in the team, and also collaboration with municipalities. In addition to participation in curricular enrichment or educational underachievement programmes, two programmes coordinated by Ciência Viva are particularly important:

Ciência Viva Club Network

Our partnership with research units, municipalities and Ciência Viva Centres is at the base of the Ciência Viva School Club Network. It is coordinated by Ciência Viva in collaboration with the Department of Education. The network currently has **235 clubs**. The number is expected to double within one year and progressively achieve an increase of more than 80% over the next decade.

Ciência Viva School Network

Ciência Viva Schools follow the model of Museum Schools that first emerged in the United States and favour dynamic, interactive forms of learning in science and other knowledge centres. There are currently **11 Ciência Viva Schools**, the first of which was set up at the Pavilion of Knowledge 10 years ago. The experiment has been extended and adapted to other Ciência Viva Centres. This is a project that we consider strategic, and which will be extended and strengthened over the next decade.

3.3
Strengthening the role of the Pavilion of Knowledge in supporting Ciência Viva knowledge networks

Virtual visits

Offering resources for e-learning and products for online distribution will be one of the Pavilion of Knowledge's priorities in the coming years. The COVID-19 pandemic has irrevocably changed forms of teaching and knowledge sharing and has highlighted the potential and limitations of distance education and communication. The present situation has made a more dynamic, active online presence essential and it will continue to be used long after the pandemic, in combination with existing classroom teaching. The Pavilion of Knowledge is setting up virtual tours for different audiences, which include pre-recorded components and also direct interaction with students, teachers and parents.

Training of monitors and educators at the Ciência Viva Centres Network

The training and constant updating for educators and monitors at the Ciência Viva Centre Network are essential to the quality and innovation of activities. The Pavilion of Knowledge regularly organises training courses for monitors and educators (Ciência Viva Training Meetings) and space training courses in collaboration with the European Space Agency (ESA). It is essential to work with science centres and museums in other countries in order to share good experiences and best practices, supported by competitive European funding from the Erasmus+ programme.

Thinker in residence

The *Thinker in Residence* programme will be set up as a strategic initiative that will invite famous international personalities to provide an outside look at our practices and help us innovate and reflect on future developments.

3.4
Formation of new spaces to enhance inland areas: Ciência Viva Farms

Ciência Viva Farms Network

In 2021, a new nationwide mobilisation project will begin to take shape for the decade. It will become a new reference in the dissemination of science and technology, in conjunction with the rural world.

The aim of the Ciência Viva Farms initiative is to set up an innovative national network of diverse units all over Portugal that will form a new reference in the dissemination of science and technology involving experiments, practice and collaboration between scientific or cultural groups or areas as essential pillars.

The country's developmental inequalities call for action programmes that accentuate the harmonious development of all its regions, favouring knowledge as a way of enhancing inland regions, in a strong link between rural and urban areas, the interior and the coast. Enhancement of biodiversity, historical and cultural heritage is a key tool for attracting investment, which is indispensable for economic innovation and the settlement of new generations all over the country.

Access to knowledge for all is a priority for this initiative, through solid alliances between scientific institutions, businesses and central and local public administration. To this end, Ciência Viva, with the idea of open access to scientific knowledge and active public participation is once again committed to creating the right conditions for interaction between scientists, the education community and civil society in order to respond to clearly identified, consensual needs in all regions and communities in the country.

In this context, the goals and challenges of the Cooperating Laboratories (CoLAB) are in line with the strategies of the Ciência Viva Farms. This makes them major partners, particularly in common innovation agendas creating economic and social value.

Ciência Viva Farms are a mission focused on education, knowledge sharing and service delivery in science, technology, culture and creativity. We want to use national and international financial instruments to implement them, in collaboration with the government areas of science, education, economy and cohesion, so that they can strengthen two essential dimensions in response to emerging global challenges:

Culture and creativity

Providing Portugal's cultural wealth with a space where communities can hold vast accumulated knowledge that can also benefit innovation;

Connecting to the economic fabric through innovation

Strengthening the relationship between scientific research and businesses (with traditional practices and know-how that coexist with innovation), bringing innovation closer to practice, with direct effects on society and regional development.

The Ciência Viva Farms concept's mission and performance are guided by five strategic goals:

1. Promoting social and regional cohesion

Through local development and contributions via education and the economic vitalisation of local business;

2. Promoting innovation

Through science, technology, culture and creativity, provided mainly by interconnection and interaction between areas;

3. Bringing the scientific and academic community closer to society and the economic fabric

Interconnecting different fields and putting in diverse actors in contact when they would otherwise be far apart or disconnected;

4. Enhancing local resources

Be they local cultural heritage, Portugal's special natural resources or previous investments in infrastructure or equipment, by recovering or reviving them;

5. Providing technical and scientific support for local economic and business activity

By offering services and access to a large national and international scientific community with which Ciência Viva already has a solid background of cooperation.

Strategic Goal 4

Sustainability and Social Responsibility

4.1
Pavilion of Knowledge Sustainability Plan - Ciência Viva Centre

4.2
Ciência Viva Social Inclusion Plan

Strategic Goal 4

Sustainability and Social Responsibility

Science centres must reflect the concerns and interests of society, and today sustainability is a major issue that arises on a planetary level and in all sectors of human life.

The Pavilion of Knowledge is a reference institution in the debate on science and technology at the service of sustainable development and as an example of sustainable practices. For the Pavilion of Knowledge, sustainability means placing barrier-free knowledge and cooperation at the service of the balance and economic, social and human wellbeing of all people. The scope of this purpose naturally extends in the short run to the whole of Ciência Viva Centres Network.

At the SCWS - Science Centre World Summit 2014 in Mechelen, Belgium, international networks of museums and science centres from around the world signed the Mechelen Declaration "Public Engagement for a Better World", in which they committed themselves to take action that would contribute to the sustainable development set out in the UN Millennium Development Goals.

More recently, at the Science Centre World Summit in Tokyo in 2017, the parties reiterated the importance of the involvement of science centres and museums in application of the Sustainable Development Goals and approved the Tokyo Protocol to this end.

The Pavilion of Knowledge made its contribution to and signed these documents and is now putting these principles into practice in the Ciência Viva Strategic Plan, which is based on the following commitments:

a) commitment to the environment, minimising the pavilion's ecological footprint, continuing an environmental management policy in the efficient management of water, energy, paper, CO_2 and waste and implementing a guide to sustainable events;

b) commitment to people, supporting the opportunities created by science and technology for sustainable development and improving the living conditions of the entire population, fostering the debate on topical scientific issues of social relevance and also providing for the wellbeing of employees by strengthening a quality management policy, with a special focus on continuous improvement and personal development.

Pursuing a policy of social responsibility must, in addition to the direct work at the Pavilion of Knowledge, include setting up social solidarity and inclusion science programmes, seeking new ways to improve the positive impact of our initiatives on the surrounding community and on the general public.

This strategic goal pursues two lines of action.

4.1
Pavilion of Knowledge
Ciência Viva Centre – Sustainability Plan

Ciência Viva has a long history of disseminating and encouraging good sustainability practices, which have already led to measures to reduce energy, water, paper, plastic and waste consumption and the adoption of alternative, more environmentally friendly mobility habits.

The challenge now is to devise a structured sustainability plan. It should include a timeline, targets, gauges, implementation and monitoring indicators. This whole process, which will involve the Pavilion of Knowledge and then all the other Ciência Viva Centres, will require considerable participation, documentation and dissemination, with the involvement of the entire national structure.

4.2
Ciência Viva Social Inclusion Plan

Social inclusion begins at home. Ciência Viva has therefore used public employment support programmes and signed agreements with associations representing different groups of people, who, due to their personal, cultural or social characteristics, may find it more difficult to find jobs. A number of employees are working at the Pavilion of Knowledge as a result of these agreements, and we will continue this work in the coming years within the scope of Ciência Viva's social responsibility.

Our social responsibility policy permeates all Ciência Viva's activity, in programmes and projects undertaken by networks that cover the entire country. However, experience shows that, for different socio-economic or cultural reasons, many communities and groups do not visit science and technology events. We will therefore undertake projects that involve residents of neighbourhoods in difficult socio-economic situations, with particular focus on children and young people, to promote environmental and health literacy and digital skills.

These projects will be set up in cooperation with scientific institutions and associations that work with these communities, with the active participation of their young people.

Strategic Goal 5

Strengthening the internationalisation of scientific education and culture networks

5.1
International cooperation
in education projects

5.2
International cooperation
in open and citizen science projects

5.2
Cooperation in museum science
and science communication

Strategic Goal 5

Strengthening the internationalisation of scientific education and culture networks

This strategic goal pursues three lines of action.

5.1 International cooperation in education projects

Our experience in e-learning and blended learning will be of strategic importance for international cooperation in educational projects. These are the main lines of action:

ESA and collaboration with the ESERO network

Ciência Viva has an education programme contract with the European Space Agency (ESA) and is the European Space Education Resource Office (ESERO) for Portugal. It works towards the joint goal of motivating young people for science and technology by introducing space science into the daily work of teachers of all subjects and at all levels of education. The ESEROs of the different member states work together in close collaboration with ESA and constitute the largest European network for space education.

Ocean Literacy: European coordination and Atlantic strategy

Ciência Viva is one of the founding members of the European Ocean Alliance. It was set up by the European Commission's DG MARE and charged with forming a Network of European Blue Schools, inspired by Portugal's Blue School Educational Programme. It also plays a substantial role in the cooperation in the field of ocean literacy between the Atlantic countries, which is of great strategic interest for our country. Ocean literacy and the creation of blue schools are priorities in the report "Mission Starfish 2020: Restore our Ocean and Waters", which will be the basis of the funding opportunities that Horizon Europe will create.

Participation in European Open Schooling networks

Ciência Viva belongs to European education networks based on active community involvement methods in schools (open schooling). These networks have resulted from membership of Horizon 2020 consortia and have resulted in national collaboration networks. The Ciência Viva Academy is regularly updated with resources that reflect good practices from these international projects and ensures that these networks are mobilised at national level.

Cooperation with the CPLP

E-learning will be a strategic tool for strengthening education cooperation with Portuguese-speaking countries. In particular, we will intensify collaboration with Portuguese schools in order to undertake joint projects and promote good practices.

5.2
International cooperation in open and citizen science projects

Citizen science will be one of the fundamental aspects of the collaboration of science with society in the coming years, in particular within Horizon Europe. Ciência Viva Knowledge Networks are a strategic tool in this field as they foster close contact with the public in all regions of the country. This line of action will be pursued both at national and international level:

Collaboration with the Portuguese Citizen Science Network

Ciência Viva is supporting the Portuguese Citizen Science Network, facilitating the sharing of experiences and good practices and disseminating the results obtained by projects.

International cooperation

Participation in international citizen science projects will be enhanced by forming consortia and funding research.

5.3 Cooperation in museum science and science communication

The sharing of experiences in museum science and public motivation at international level has been a strategic factor in the development of Ciência Viva and the Ciência Viva Centre Network and needs to be extended and strengthened over the next decade. The Pavilion of Knowledge – Ciência Viva Centre is a full member of two major international networks of museums and science centres (Ecsite and ASTC) and also belongs to consortia for the joint organisation of exhibitions for the international market. We belong to the following major international networks:

Ecsite

European network, based in Brussels. The Pavilion of Knowledge has regularly participated as a member of the board of Europe's largest association of museums and science centres, and held the presidency from 2014 to 2015. It regularly takes part in strategy meetings and often takes joint positions in international decision-making forums. The Pavilion of Knowledge also plays an active role in the Space Thematic Group, which is the fruit of cooperation between Ecsite and ESA.

ASTC

American network, based in Washington. The Pavilion of Knowledge has played a regular role on the association's board.

NAMES

The Pavilion of Knowledge - Ciência Viva Centre is a founding member of the EMME Summer School, which trains professionals from museums and science centres in the Mediterranean region and North Africa.

RedPOP

Latin America and Caribbean Network

Organising exhibitions as part of a consortium

The joint organisation of exhibitions in international consortia with science centres for exhibition design and production has allowed us to set up original, high-quality shows and acquire our own skills in order to exploit this market internationally.

With this Strategic Plan we project Ciência Viva and the Pavilion of Knowledge into the coming years from a present of great uncertainty.

But it is also a period in which, more than ever, science and knowledge dictate the paths that criss-cross society. From health to economics, education to scientific research, the arts to the humanities, everything points to forms of cooperation that can overcome barriers. And this cooperation is increasingly international, through partnerships that Ciência Viva has been building and that allow it to share ideas, products and good practices.

This plan points to guidelines that will be implemented in our Annual Activity Plans. This Strategic Plan cannot ignore the maturity that Ciência Viva has reached in its 25 years of education and scientific culture in Portugal, which it will achieve next year, 2021.

Looking to the future with determination and flexibility is the attitude that leads us to innovative practice, reinforcing partnerships for relevant work in society.

Ciência Viva

is the best we have!

José Mariano Gago

in response to the play on words at the end of the interview with Vera Pinto, Rádio Renascença and Bárbara Wong, Público, on the programme "Diga lá Excelência", 6 November 2005. In Mariano Gago - RTP Archives

STRATEGIC PLAN 2021 – 2030

CIÊNCIA VIVA

National Agency for Scientific and Technological Culture
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