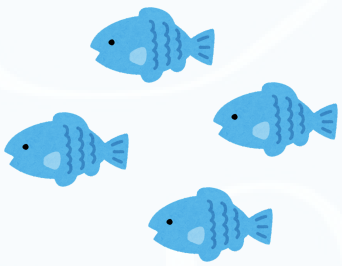
Guidance on best practices in Education for Sustainable Development in the Mediterranean region



CONTENTS

Sustainable Development Goals (SDGs)

Sustainable development, which was made official at the Rio Earth Summit in 1992, is defined as **"development that meets the needs of the present without compromising the ability of future generations to meet their own needs"**. It aims to improve current living conditions while preserving the resources needed for future generations. It is now threatened by climate change, which is closely linked to various issues such as biodiversity, food, health, and sustainable production and consumption. Given the urgency of the climate crisis, we must act quickly to change behaviours, particularly through Education for Sustainable Development (ESD).

The purpose of this education is to equip individuals with the knowledge and skills they need to make informed decisions and act responsibly in order to protect the environment while promoting sustainable economic development and equitable societies. **In 2021, the Berlin Declaration on Sustainable Development established a framework for action calling on countries to implement education for sustainable development without delay. This approach places education at the heart of efforts to achieve the 17 Sustainable Development Goals set out in the United Nations 2030 Agenda.**

What are the 17 Sustainable Development Goals (SDG)?

Sustainable development aims to achieve development that is often said to be based on "three pillars":

- economically viable (meeting the needs of the present and future generations)
- socially equitable (solidarity between societies)
- ecologically reproducible

Education for Sustainable Development (ESD)

Education for sustainable development refers to educational activities that raise awareness among different generations to the fragility of our ecosystem and encourage behavioural changes that promote a multidisciplinary approach to environmental and social issues. It aims to equip individuals and communities with the knowledge, skills, attitudes, motivation and commitment to work individually and collectively to solve current problems and prevent future ones.

Education for sustainable development sees education as the key to advancing the implementation of all sustainable development goals. It enables people to make informed decisions and take action, both individually and collectively, to transform society and protect the planet. It equips learners of all ages with the knowledge, skills, values and abilities needed to address challenges such as climate change, biodiversity loss, resource overexploitation and inequalities that undermine the well-being of people and the planet.

ESD promotes education that is:

- **Cognitive:** improves the way we think and understand information,
- **Socio-emotional:** strengthens our social skills, empathy and emotional intelligence,
- **Behavioural:** encourages positive behaviour and action.

ESD is a potent strategy for transforming education that affects what we learn, how we learn and the environment in which we learn. **It is a lifelong learning process that is integral to high-quality education**.

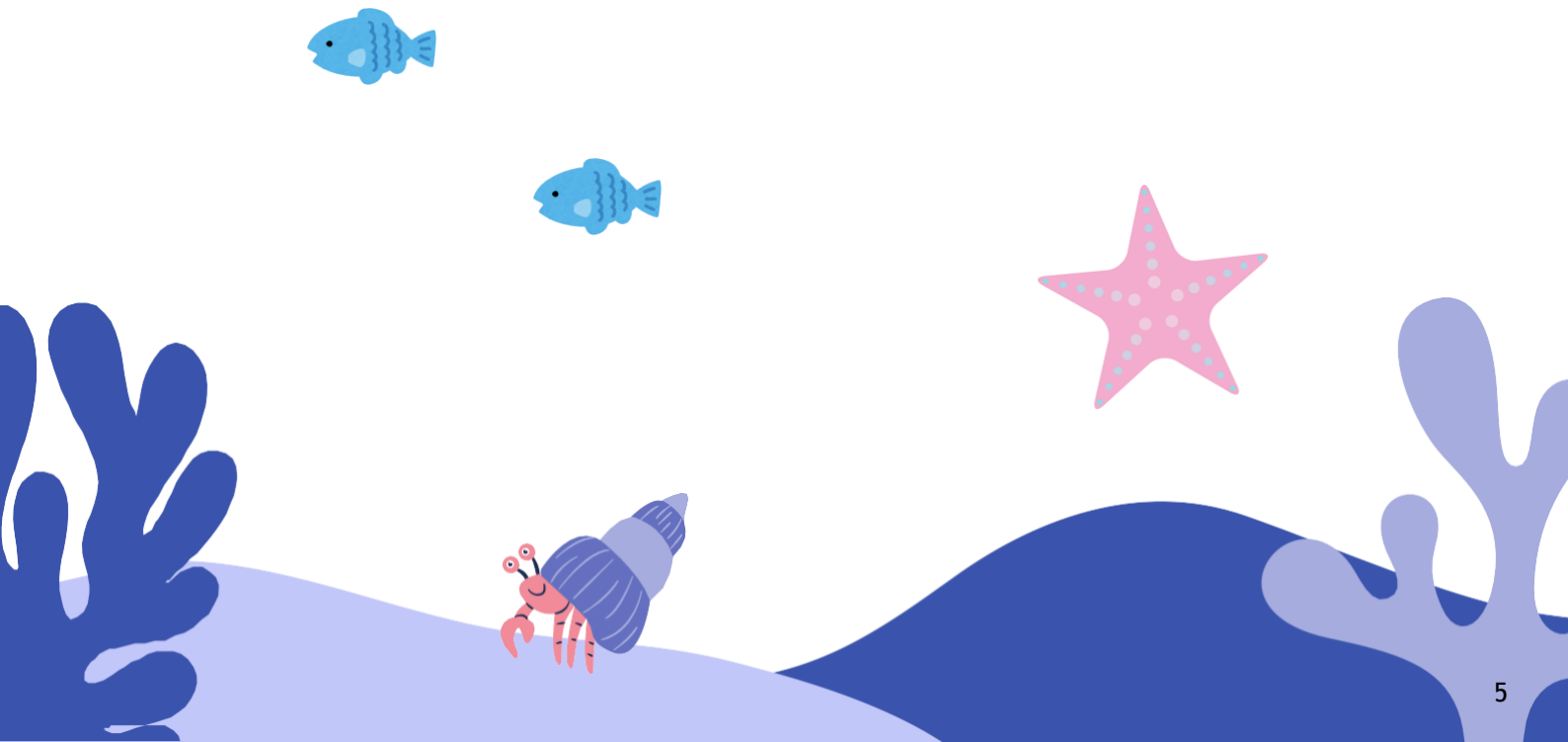
The Mediterranean Region : a hotspot of biodiversity

The Mediterranean basin, with 46,000 km of coastline, has been identified as one of the **35 global biodiversity hotspots** and the region with the third richest plant diversity, with around 30,000 plant species, 13,000 of which are endemic.

The Mediterranean Sea, the largest intercontinental sea, covers an area of 2.9 million square kilometres. Located between Europe, North Africa and Western Asia, it is, as its name suggests, “in the middle of the land” (mediterraneus). The Mediterranean Sea is also one of the **most important reservoirs of marine biodiversity in the world:** although it represents only 0.82% of the ocean's surface area, the Mediterranean is home to 7% of the world's marine fauna and 18% of its marine flora. It is estimated to contain a wealth of more than **17,000 species, 25% of which are endemic**.

Mediterranean land and marine ecosystems are under pressure from various human activities. Fishing and aquaculture, industrial and domestic pollution, and habitat loss and degradation are all putting strain on ecosystems. As an example, pieces of plastic break down under the effects of UV rays, wind, salinity and wave action. In the Mediterranean, the release of this plastic is becoming increasingly problematic, as microplastic concentrations are reaching record levels: **1.25 million microplastics per km2.** This trend is exacerbated every summer with the arrival of large numbers of tourists: 200 million tourists are responsible for a 40% increase in waste.

In light of the rapid development of human activities and mass tourism in the Mediterranean region, this guidance document aims to draw on best practices in education for sustainable development among civil society organisations in the Mediterranean region.



Background and methodology of the guidance

The **project for the sharing of best practices in education for sustainable development in the Mediterranean region**, coordinated by the association **1 Déchet Par Jour**, was carried out as part of the call for projects "Education for sustainable development in the Mediterranean region" launched by the Interministerial Delegation for the Mediterranean (DIMED) of the Ministry of Europe and Foreign Affairs (MAE) in France. This call for projects seeks to develop common practices for education on sustainable development in countries on the southern shore of the Mediterranean.

The project has brought together five civil society organisations from countries on the northern and southern shores of the Mediterranean to share, analyse and build on their experiences in education for sustainable development. **The main goal is to promote replicable educational practices that encourage eco-friendly behaviour while raising awareness of the links between pollution, biodiversity and sustainable development**. Launched in January 2024 for a period of 12 months, the project was structured in several stages: networking among partners, self-capitalisation of practices, discussion workshops and finalisation of the guidance.

Each participating association chose, from among its Education for Sustainable Development initiatives, **the practice that it considered most effective and replicable in other socio-geographical contexts.** As such, each organisation identified and capitalised on one of its successful ESD practices, analysing the key factors for its success, the difficulties encountered and the adaptations needed for other contexts. The self-capitalisation work was informed by at least two interviews with target audiences and stakeholders. The workshop gave participating associations the opportunity to discuss their experiences, share educational tools and develop solutions tailored to Mediterranean environmental challenges. To minimise its environmental impact, the workshop favoured online collaboration using digital tools (Google Drive, Meet, Slack). This approach avoided carbon-intensive travel while promoting remote teamwork.

This collective effort led to the creation of the guidance on best practices for ESD, which summarises the lessons learned from the project. The guidance is a compilation of methodologies, teaching tools and feedback from the various participating organisations. It aims to:

- Foster the dissemination of innovative educational practices and help adapt them to different socio-geographical contexts;
- Strengthen the ability of local players to carry out effective ESD actions;
- Promote education for sustainable development throughout the Mediterranean basin.

It is a valuable tool for educators, teachers, instructors, facilitators, scientists, associations and local authorities seeking to draw inspiration from tangible ESD experiences and implement sustainable development initiatives in the Mediterranean region.

Participating associations

Association Citoyenneté et Développement durable (ACDD)

ACDD (Association for Citizenship and Sustainable Development) is a non-profit association founded in 2012 in Gabès, Tunisia. Its activities include implementing sustainable and inclusive development initiatives and projects, mainly in rural and vulnerable areas (oases, mountains, arid zones, etc.). It also promotes a sense of civic responsibility as a guarantee of local governance and the preservation of human values. The ACDD bases its projects on a participatory approach that ensures the responsible involvement of the local population.

Association d'Education relative à l'environnement de Hammamet (AERE)

AERE (Hammamet Association for Environmental Education) is a non-governmental organisation created in Tunisia in 2001. It aims to raise awareness of environmental issues among individuals and communities, promote a culture of environmental protection by encouraging environmentally friendly behaviour, and develop the skills and expertise of school staff in environmental matters through training, information and the dissemination of educational materials.

Association Tunisienne d'Énergie, d'Eau et d'Environnement (AT3E)

AT3E (Tunisian Association for Energy, Water and the Environment) is a non-profit organisation founded in 2015 with the primary purpose of improving living conditions in oasis areas, particularly in the Governorate of Kebili in Tunisia, through the sustainable management of natural resources. The association has a wide range of objectives, including promoting innovative projects, disseminating best practices for the preservation of natural resources, and supporting farmers and citizens in adopting innovative technical solutions for energy production, irrigation and waste recovery.

Mediterranean Centre of Environment (MCE)

The Mediterranean Centre of Environment (MCE), based in Athens, is a non-profit organisation founded in 1992 by a team of French and Greek professionals to promote sustainable development and intercultural cooperation, particularly in rural areas of Mediterranean countries. The MCE focuses on empowering communities — particularly young people — to protect their heritage and environment, as well as promoting sustainable local development grounded in a preserved and enhanced natural and cultural heritage.

Association 1 Déchet Par Jour (1DPJ)

1DPJ (1 Piece of Rubbish) is an association founded in 2016 in Marseille, France, dedicated to reducing waste pollution and protecting the environment by galvanising citizens through various initiatives. It carries out awareness-raising activities, particularly in schools, to educate pupils about waste sorting and inform them about the impact of pollution on biodiversity, particularly on the Mediterranean coast. The association also organises monthly waste clean-up events open to the general public and works in priority neighbourhoods to raise awareness of better waste management.

Common lines of action and recommendations for best ESD practices in the Mediterranean region

The first common line of action is **the participatory and collective dimension of practices**. The practices studied bring together knowledge producers (scientists, experts), those who transmit knowledge (teachers, facilitators) and the target audiences who acquire it (students, citizens, economic actors, etc.)

The second involves **disseminating and transferring technical and scientific knowledge to make it accessible to everyone**, including those with no background or formal education. This multidisciplinary approach makes it possible to transform complex knowledge into understandable educational tools, thereby stimulating interest and knowledge acquisition.

Our recommendations for developing ESD practices in the Mediterranean region:

Actively involve target audiences and stakeholders in ESD practices
A participatory approach encourages the involvement of target audiences. For example, in the composting initiative run by the AT3E association in Tunisia, young people were directly involved through practical training and awareness-raising sessions. Similarly, the artificial reef initiative (ACDD) rallied subsistence fishermen throughout the process, from the initial consultation to implementation.

Propose practical and visible actions
Learning should go beyond theory and include real-life experiences. ESD comes into its own through practical, visible and hands-on activities that enable target audiences to understand the issues at stake and try out sustainable solutions. Fun and accessible field activities are an effective educational tool. The community clean-up initiatives led by 1DPJ are a perfect example of this approach: participants pick up litter while learning about waste sorting, the impact of litter on biodiversity and best eco-citizen practices. As part of the eco-schools programme (AERE), students have been involved in practical activities such as educational gardening, installing recycling bins and reusing rainwater.

Making the practice part of everyday life and promoting local heritage
The aim is to embed the principles of sustainable development in the daily lives of target audiences while promoting innovative educational approaches. Initiatives such as Sustainability Makers in Europe demonstrate the effectiveness of this approach: interactive digital tools train teachers while raising students' awareness of the Sustainable Development Goals (SDGs). For its part, the eco-school initiative links topics such as energy, water and biodiversity with practical actions within schools and in students' everyday lives. Educational gardening and rainwater reuse directly connect students to environmental issues in their everyday school life. The citizen clean-up campaigns organised by 1DPJ bring together awareness-raising, eco-friendly actions and learning about the impact of waste on biodiversity.
Successful ESD practices take into account local heritage and specific characteristics (cultural, economic and environmental) in order to propose actions that are adapted to the local context. The more practices focus on locally rooted issues, the more relevant and effective they become, as demonstrated by AT3E's composting practices and ACDD's collective ecosystem restoration initiative.

Train and work with teachers, who are key stakeholders in ESD
Teachers are key to spreading knowledge and values about sustainable development. But to do this properly, they need the right training, innovative teaching tools (like digital platforms and textbooks), and logistical and financial support to organise school trips and interdisciplinary projects. The Sustainability Makers project gives educators practical resources to make the SDGs part of their lessons.

Sheet 1

Sustainability Makers - Using digital tools to train future sustainable development professionals

"Teachers as agents of sustainability" with MCE

PLACE

Greece (Athens)
Spain (Burgos)
Portugal (Santa Maria da Feira),
Italy (Trento)
Romania (Arad)
Belgium (Brussels)

THEME

The 17 SDGs

TARGET AUDIENCE

Vocational teaching staff and educators (vocational schools, training centres

Students of vocational schools (17 to 25 years of age)

TIME

36 months (2021-2024)

TOOLS

Trainer's Manual

Online platform for vocational education and training (VET) professionals

Learning platform for the SDGs with a 2D game and digital activities

The association

MCE promotes sustainable development and intercultural cooperation, particularly in rural areas of Mediterranean countries. MCE focuses on empowering communities - especially young people - to protect their heritage and environment.

Context

There is a general consensus that sustainability is linked to key skills that enable citizens to become constructively and responsibly involved in today's world. However, teachers and educators sometimes find it difficult to integrate sustainability and the SDGs into their teaching due to a lack of knowledge, time and/or resources. Students have varying levels of interest and understanding of sustainability, with some eager to learn and others having little experience in the field.

Most existing tools are designed primarily to inform learners, but few encourage them to take responsibility and change their behaviour towards greater sustainability.
The Sustainability Makers project focuses on integrating sustainable development goals (SDGs) into vocational education through an online learning platform (Sustainabilitymakers.eu) and a structured methodology aimed at empowering educators and engaging students in sustainability practices.

Aims and results

This project meets the growing demand for comprehensive sustainability education in vocational and technical schools by integrating the SDGs into their practices and systems. The aim is to train young people and future professionals in skills related to sustainability and the SDGs and to help them integrate these into their practices. The intention is to help vocational education trainers become "Sustainability makers" and play their full role in the acquisition of these skills and in changing behaviour.
More specifically, the key aims of the project are:

- Using innovative methods and tools, including digital platforms and interactive games, to make sustainability principles appealing and practical for educators and students.
- Encouraging students to change their behaviour through thought and action, with a view to integrating sustainability into their daily lives.
- Helping VET teachers to integrate one or more SDGs into their students' learning process.

The project has created an online learning platform in seven different languages (English, Spanish, Italian, Romanian, Belgian, Greek and Portuguese) with digital activities and suggestions for activities for each SDG, as well as a 2D game to engage students and encourage them to practise sustainability in their daily lives. To date in Greece, 20 educators have been trained in the use of the tools offered and/or have used them in their classrooms, two vocational high schools have implemented an educational project, and 27 students have participated in the project. In June 2024, more than 500 people were already users of the learning platform.

Methodological approach

The project began with a co-production phase for the manual and online platforms. This stage brought together 23 teachers from seven different countries. It began with transnational training in Trento, where educators worked together to create the training content. Subsequently, two co-production sessions were organised in Greece, involving 20 teachers, in order to better tailor the tools to their specific needs. This process included a presentation of the project, brainstorming sessions and collaborative activities to share ideas and test the content developed.

The jointly produced manual aims to improve the digital skills of all stakeholders in the education community and to educate them about the SDGs. After a general introduction to the concept of sustainability and the SDGs, teachers are invited to choose the SDGs they wish to work on and follow a flexible three-step process clearly explained in the manual for trainers.

Know

In this step, students learn about the themes related to the SDGs and get a deeper understanding and knowledge. Sustainability and the SDGs are introduced through engaging introductory videos, interactive exercises, lively discussions, and shared feedback.

Explore

This step focuses on areas of action related to the SDGs. It includes three different activities and is meant to connect theory to real-life issues. Focusing on one or more SDGs, teachers begin by giving their students a self-assessment test to encourage further exploration and a better understanding of the chosen SDG. They show videos, organise quizzes, discuss feedback and lead group activities to develop a shared vision of how to adapt the SDGs to everyday life and work.

Act

The students took part in an activity (taking action) to encourage them to develop tangible actions to address the challenges explored in the first two steps. The teachers then used a game-based learning approach with a 2D game to reinforce the concepts of sustainability.

Impacts and accounts

An improved understanding of the SDGs and the concept of sustainability, and their application in the daily lives of teachers and students. According to one partner, “thanks to the use of the e-learning platform, teachers have shown increased interest in education for sustainable development and better planning and implementation of interdisciplinary projects.” “The online modules included in the platform were excellent in every way and allowed me, as a teacher, to learn more about sustainable development and the various SDGs! They will be very useful in my future teaching, as I intend to use this content, as well as its interactive games, in my lessons,” said one teacher.

Positive changes in behaviours and attitudes towards sustainability among participants, as evidenced by this teacher's comments: “After this project, I noticed that students were more involved and had a better understanding of sustainability through the interactive modules. This gave me more confidence and improved my ability to integrate sustainability into my teaching.”

Success factors	Constraints
• Participatory approach and collaboration between stakeholders • Training in SDGs for teachers and educators • Strong commitment and involvement of participating educational institutions	• Uneven digital skills among educators • Lack of flexibility in the curriculum, insufficient time for teachers to integrate the SDGs • Limited access to digital tools (internet, computers)

The stakeholders

Sustainability Makers is an initiative co-funded by the European Union (Erasmus Plus Programme) and implemented by the following organisations: Amycos (project coordinator) and Idycos in Spain, Mediterranean Centre of Environment in Greece, Odisee in Belgium, Rosto Solidario in Portugal, Tyto in Italy and Predict in Romania. The platform was developed with the assistance of 23 teachers involved in the collective creation of the training tools.

Sheet 2

ESD workshop on litter and its impacts

"The best waste is the waste we don't produce" with 1 Déchet Par Jour

PLACE

Marseille, France Southern Region

Educational institutions, community centres, sports clubs, SESSAD/IME and any other organisations working with children

THEME

Plastic pollution and litter

Selective sorting and waste reduction

Local Mediterranean biodiversity

Consumption and resources

TARGET AUDIENCE

Children from 9 to 12 years of age

TIME

1-3 hours

TOOLS

Reusable cut-resistant gloves, bags in various colours, pliers, waste scales.

Classroom, computer, video projector, calculator

The association

1DPJ encourages every citizen to reduce litter and preserve biodiversity. Given how much litter there is, everyone has a role to play in reducing its impact. Individuals can adopt simple everyday habits, such as not throwing rubbish on the ground or picking up one piece of rubbish a day.

Context

Every year, around 600,000 tonnes of plastic waste ends up in the Mediterranean, which is equivalent to dumping 33,800 plastic bottles every minute. It is estimated that over 80% of the waste found in the Mediterranean Sea, whether on beaches, on the surface or on the seabed, comes from land. France contributes 80,000 tonnes of plastic waste to the Mediterranean every year, much of which comes from poor waste management practices on the coast. The city of Marseille, with its 57 km of coastline on the Mediterranean Sea, is particularly affected by land and marine pollution. Our current consumption patterns and the waste we produce are having a devastating impact on the environment and biodiversity. To change the situation and our behaviour in the long term, we need to raise awareness among young people.

Aims and results

This initiative to promote education for the environment and sustainable development (EESD) initiative is designed to complement the French public education system by empowering students to become actors in sustainable development. The workshop encourages questioning, collective intelligence and learning by doing. Educating children about environmental issues, waste sorting and reduction is important because it raises their awareness of climate change, gives them practical experience and develops their social and civic skills.

- Educate about the environment and sustainable development
- Teach proper waste sorting
- Educate about the impact of pollution and litter on biodiversity and our health
- Learn through action to encourage young people to get involved in sustainable change
- Teach everyday eco-friendly habits that will last
- Develop critical thinking and an awareness of being part of a shared ecosystem

In 2023, the association significantly increased its school and extracurricular activities, raising awareness among 6,882 children.

Methodological approach

Step 1: Knowledge transfer and discussion (40 minutes)

The workshop begins with a period of listening, information and discussion. Environmental issues and their links to waste management are presented in a fun way using a projected presentation.

We present SDGs 6, 12, 13, 14 and 15 and their links to waste issues with figures and scientific data. In this section, we outline the current global situation and show the life cycle of waste and the impact of our waste on human health and biodiversity. We also present the 5R method, which encourages individual and collective contributions to building a united and sustainable world by reducing our waste production through five steps: Refuse, Reuse, Reduce, Recycle and Return to the earth (composting).

Step 2: Litter clean-up and sorting (1 hour)

A litter clean-up session near the primary or secondary school is organised as follows:

- Give safety rules to the students.
- Give supervision rules to the teaching staff (1 adult for every 8 to 10 children).
- Explain the sorting process and instructions.
- Hand out gloves and disinfectant spray.
- Hand out the sorting bags and explain their purpose.
- Clean-up time

Step 3: Analysis of collected waste (40 minutes)

At the end of the clean-up process, we weigh the waste that has been collected. This allows us to see how much litter there is and helps the children understand the impact of their behaviour on the environment. The different types of waste found are analysed collectively and the children work together to find alternatives to reduce it.

- Disinfection of children's hands.
- Storing gloves in pairs.
- Tying bags with knots and weighing them.
- Simple sorting of waste according to local sorting rules.

- Congratulations to the students and distribution of rewards (certificates, stickers).
- Organisation of a prize-giving ceremony (e.g. funniest piece of rubbish)
- Disposing of rubbish in the bins with the students.

Impacts and accounts

The school awareness campaigns run by 1DPJ play a vital role in educating responsible citizens by instilling eco-friendly practices from an early age. They generate collective impact, with students becoming ambassadors for awareness within their families. By educating young people about the consequences of littering and pollution, we are fighting to prevent these behaviours from becoming normalised. As one teacher said, “The format is really fun for schoolchildren, whether they are participants or not. I find it very interesting and it sticks with them: they tell each other not to throw things on the ground. When we walk around the neighbourhood, they comment on how clean it is.” Understanding the environmental impact of waste, particularly on biodiversity and health, by combining scientific knowledge with tangible action, has a lasting impact on children. “There was the theory and then practical exercises. As soon as you offer children something new, they usually like it. If it were only theoretical, it wouldn't be as effective,” pointed out another teacher.

Success factors	Constraints
• Complementary subjects taught by the French national education system (life and earth sciences, physics/chemistry and civic education) • Flexibility and partnership-based relationships with teaching and supervisory staff	• Supervise and ensure the safety of the group • Weather conditions: Inclement weather may limit outdoor activities.

The stakeholders

The **operational, scientific and technical partners** are The Ligue de l'enseignement association, community centres, Maisons pour Tous, CPIE, teachers and head teachers from primary and secondary schools, and volunteers from 1DPJ.

Financial partners include the city of Marseille, the Aix-Marseille Provence metropolitan area, the department, the South region, DREAL PACA (Regional directorate for the environment, planning and housing for the PACA region), the Maison Colin Seguin and Crédit Mutuel Alliance Fédérale foundations

Sheet 3

Creation of pilot eco-schools in Hammamet

"The eco-school empowers students to become the driving force behind a positive and practical project to improve their living environment from an early age" *with AERE*

PLACE

Hammamet
Tunisia

THEME

ESD

Developing educators' environmental skills

Youth volunteering for the environment

TARGET AUDIENCE

800 primary school pupils aged between 6 and 12

National education stakeholders and teachers

Youth associations and local communities

TIME

12 months
(30 days of activities on average)

TOOLS

Virtual exhibition

Video about biodiversity

A room, laptop, video-projector, pens, paperboard

The association

AERE informs, trains and educates people to discover and understand the environment and play a responsible and civic role in its management. It raises awareness of environmental issues, develops the environmental skills of those involved in education and conducts research on environmental education.

Context

The initial observation was that sustainable development is still a vague and theoretical concept for a large number of people. This observation was widely shared by institutional actors and civil society. It was confirmed by the survey carried out at the start of the project (State of Education for the Environment and Sustainable Development EESD) in schools in Hammamet.

Teachers lack the resources and methodology to implement sustainable development education activities and need support. Although aware of environmental issues, those involved in national education are hampered in their efforts by bureaucracy. Associations have a good level of environmental awareness but lack material support and educational tools.

Given this observation, the challenge is to familiarise people with the principles of sustainable development and make them more tangible and understandable.

The answer is therefore clear: educational programmes on the environment and sustainable development must be introduced into schools.

Aims and results

The project seeks to promote EESD in schools in Hammamet, Tunisia, and to make the principles of sustainable development more understandable to students, teachers and national education stakeholders.

The aims are:

- Raising students' awareness of the different aspects of sustainable development
- Developing the capabilities and skills of teachers and educators in the field of the environment and sustainable development
- Promoting youth volunteering in the field of the environment and sustainable development
- Improving the school environment in line with the principles of sustainable development (facilities, amenities, etc.)
- Fostering partnerships between schools and encouraging their interaction with the community
- Building bridges between EESD in formal (school) and informal (youth associations) settings

The results are promising, as the practice has spread to six schools, directly affecting around 100 students, 12 educators, 30 youth volunteers involved in the projects, and indirectly affecting around 1,000 students and their parents. Some schools have been inspired by the project to replicate the experience, and the Tunisian Ministry of National Education has launched a programme to equip around ten schools with solar panels.

Methodological approach

The AERE took a participatory approach, as several discussion meetings were held with the target audience and the schools involved in the project, culminating in a partnership agreement.

Activity 1: Assessment of EESD in schools
This activity helps refine the initial findings, establish an accurate diagnosis and identify needs. It involves collecting data, conducting interviews and questionnaires, and summarising the diagnosis (using a SWOT analysis grid).

Activity 2: Youth volunteer workshops
Fifteen young volunteers aged between 15 and 25 work on two seven-day projects during the school holidays. The projects take place in schools and involve gardening, cleaning, masonry and putting up awareness-raising posters.

Activity 3: Training of activity leaders
Teachers receive training on how to lead activities and use educational resources. Ten educators participated in five training sessions delivered by an environmental education specialist.

Activity 4: Educational workshops
Five groups of 20 students were formed in five schools on a volunteer basis (50% girls and 50% boys). Fifteen activities were planned for each group, involving ten facilitators and mentors, on the themes of recycling, waste reduction and management, and biodiversity protection (in and out of the classroom).

Activity 5: Arrangement and refurbishment of the pilot school (throughout the project)

- Installation of solar panels to heat a school block and provide lighting for the school
- Installation of tanks to collect rainwater for irrigation and for the sanitary facilities
- Installation of three bins for selective sorting
- Creation of an educational garden

Activity 6: Communication and visibility
A communication plan is developed: design of a project brochure, a Facebook page specifically for the project, media coverage. A final public exhibition is organised at the end of the project.

Activity 7: Completion and presentation of the project
This closing event is organised within the pilot school and showcases the work done by the schoolchildren to the general public.

Impacts and accounts

From an environmental perspective, students and young people have adopted eco-friendly behaviours. They are now more careful about collecting and recycling hazardous waste and about domestic water and energy consumption. This project also has a socio-economic impact, as it involves schools in both urban and rural areas, and the selection of candidates for youth projects takes into account gender, socio-economic conditions and potential vulnerabilities.

The project has had a significant impact on the target audience, as one student who took part in the initiative explained: “I've learned to behave like an eco-responsible citizen by not wasting water and electricity and not throwing rubbish on the ground.” As one teacher said, “The students have become more aware of biodiversity, they are more careful when using water and electricity, and above all, we see less rubbish thrown away in the schoolyard or classrooms”.

Success factors	Constraints
• The creation of a network of eco-schools • The Ministry of Education’s commitment to the project • Media coverage of the activities	• Little involvement from the monitoring committees tasked with monitoring and assessing the project • Establish formal partnerships with stakeholders from the outset

The stakeholders

The technical partners are the Regional Directorate of Education in Nabeul (logistical support and coordination with schools), the Municipality of Hammamet (logistical support), the Hammamet International Cultural Centre (in-kind support), and the Tunisian Organisation for Education and the Family (technical expertise). **The financial partners** are Mitsubishi Corporation (financial assistance), the NGO AVIPA International (financial assistance). The **schools** (Joumhouria, My School, Yasmine Manaret Hammamet, Mohamed Boudhina High School, Atef Chaieb High School, Al Monchar primary school), and **the facilitators** who led the classroom and extracurricular activities on a voluntary basis.

Sheet 4

Collective restoration of the Mediterranean coastal ecosystem in Ghannouch.

"Towards Environmental Governance of the Gabès coastal region" with ACDD

PLACE

Ghannouch
Tunisia
Gabès coastal region (south east Tunisia)

THEME

Environmental governance and eco-responsible citizenship

Restoration and protection of marine habitats

Mediterranean marine biodiversity

TARGET AUDIENCE

200 subsistence fishermen and their families

250 women (making and maintaining fishing nets)

Local officials and local representatives

Students, researchers, and residents of the Gabès region

TIME

27 months (2016-2018)

TOOLS

"Sacré Village"

Report

Documentary

The association

ACDD works towards sustainable development in vulnerable areas of Tunisia. Its focus is on building strong relationships between local stakeholders and authorities to foster eco-responsible citizenship and environmental governance.

Context

On the Mediterranean coast of Ghannouch, fish stocks and marine biodiversity were severely affected by illegal trawling in shallow waters (8 to 14 m), compounded by industrial pollution. Economically, subsistence fishermen suffered heavy losses as their nets and equipment were damaged by trawlers.

These practices have jeopardised the livelihoods of subsistence fishermen, forcing nearly 50% of them to give up fishing after 2011. Marine desertification, with an alarming loss of marine fauna and flora, is destroying habitats that are vital for the reproduction of local species.

From a social perspective, local tensions arose due to a lack of consensus on fishing practices. The issues at stake were protecting the marine ecosystem and restoring a habitat conducive to biodiversity, ensuring the economic viability of small-scale fishing, and guaranteeing fair and sustainable working conditions for local communities.

Aims and results

The purpose of the project is to assist the ecological, economic and social restoration of the Gulf of Gabès by strengthening local environmental governance mechanisms and involving the population in the protection of the coastal region.

The aims are:

- Education on biodiversity and environmental governance for local stakeholders
- Protection and restoration of local wildlife through the creation and immersion of 110 reefs covering an area of 960 hectares
- Combating illegal fishing that is destructive to wildlife
- Improving the living conditions of subsistence fishermen and the sustainability of their practices
- Creation of habitats conducive to the reproduction of aquatic wildlife

Ecologically speaking, the gradual return of several marine species such as the red mullet has signalled the regeneration of local marine ecosystems.

On a socio-economic level, 70% of local fishermen now practise line fishing. This has led to a significant increase in their daily income, directly benefiting a total of 600 people. At the same time, the project has contributed to the almost total eradication of illegal fishing in protected areas. From a social perspective, the project has strengthened community cohesion by directly involving fishermen in the management of protected areas.

Methodological approach

ACDD took a participatory, scientific, and practical approach that made sure everyone involved was on the same page throughout the project, in line with environmental governance tools.

Step 1: Consultation and EED

Participatory meetings and training sessions on Local Environmental Governance and eco-citizenship were organised, bringing together fishermen, local associations, local authorities and universities. The programme included a screening of the film 'Sacré Village - Ungersheim, village en transition' (Sacred Village - Ungersheim, a village in transition), followed by a debate on the role of civil society in the process of assessing the environmental situation in Gabès and its involvement in decision-making on environmental protection.

Step 2: Technical study

A technical study defined the specifications for the artificial reefs. This included the number, weight, and shapes of the reefs, as well as the identification of strategic locations for their immersion.

Step 3: Creation and submersion of reefs

110 artificial reefs were manufactured in various sizes and weights (3 tonnes, 2.3 tonnes and 0.8 tonnes) to meet the needs of local marine ecosystems. These reefs were designed to recreate habitats conducive to marine wildlife. Each reef was then transported and submerged in targeted areas of the coastline.

Step 4: Awareness-raising and community involvement

Training courses were provided for stakeholders on blue crab (an invasive species with high nutritional value), the protection of fishery resources in the Gulf of Gabès, and biological wastewater treatment and recycling for irrigation of green spaces (including a visit to a wastewater treatment plant). This helped build trust and synergies for effective education on sustainable development.

Success factors	Constraints
• Participatory approach and creation of synergy between stakeholders • Engagement and involvement of beneficiaries through targeted training and awareness-raising activities	• Obtaining permits to submerge reefs at sea • No fishing port in Ghannouch • Fishermen reluctant to change their practices

Impacts and accounts

In protected areas, fish species that were once rare are returning, and marine ecosystems are being restored. "The sea is healthy again!" says a local fisherman.
Economically, it has made fishing more sustainable and profitable for subsistence fishermen. Lastly, socially, it has strengthened community engagement by encouraging fishermen to become active guardians of these protected areas. This involvement has fostered the emergence of new sustainable practices and a new local economic activity in line fishing.
The project has really made a difference, as the president of the fishermen's association explains: "The reefs have eliminated illegal fishing and improved the quality of life for subsistence fishermen."

The stakeholders

The **operational, scientific and technical partners** are the Oxygène Ghannouch association, the Ghannouch Coastal Fisheries Development Group; subsistence fishermen from the Ghannouch region (planning, implementation, coordination), the Ghannouch Town Council (logistical support, social facilitation, management of equipment needed for the project); the Ministry of Agriculture (authorisation and location of reefs); the Higher Institute of Water Sciences and Technology of Gabès (ISSTEG); the University of Gabès (training and scientific support for biodiversity and marine ecosystem restoration studies). The **financial partners are** the EU and Expertise France.

Sheet 5

Organisation of collective and inclusive litter clean-up initiatives

"An ESD tool at your fingertips" with 1 Déchet Par Jour

PLACE

Marseille, France Southern Region

Coastal areas, urban areas or protected natural areas

THEME

Plastic pollution and litter

Selective sorting and waste reduction

Local biodiversity

Solidarity and eco-citizenship

TARGET AUDIENCE

Young people, students, families, and residents of the city of Marseille

TIME

1-3 hours

TOOLS

Reusable cut-resistant gloves, bags in various colours, pliers, waste scales, tables

Context

Every year, 600,000 tonnes of plastic waste are dumped into the Mediterranean, which is equivalent to dumping 33,800 plastic bottles every minute. It is estimated that more than 80% of the waste found in the sea comes from land. The city of Marseille, with its 57 km of coastline on the Mediterranean Sea, is particularly affected by land and marine pollution. Our current consumption patterns and the waste we produce are having a devastating impact on the environment and biodiversity. To change the situation and behaviour for the long term, we need to raise awareness among people and stop litter from ending up on land and in the sea. Marine litter poses a direct threat to marine species and their habitats, which play a really important role in regulating the climate by capturing CO2 emissions. The fight against litter is a challenge that affects the environment, public health, the economy and the social fabric. Waste that is scattered and abandoned, often referred to as litter, is thrown away by humans on streets and in the countryside, and inevitably ends up in the sea via sewers and rivers.

The association

1DPJ encourages every citizen to reduce litter and preserve biodiversity. Given how much litter there is, everyone has a role to play in reducing its impact. Individuals can adopt simple everyday habits, such as not throwing rubbish on the ground or picking up one piece of rubbish a day.

Aims and results

1 Déchet Par Jour organises a monthly litter clean-up event open to the general public in the city of Marseille, both in urban areas and in the Calanques National Park and along the coastline. During these weekend clean-ups, participants learn about the environment, waste sorting and the impact of waste on biodiversity and human health. To reduce this impact, participants are made aware of zero-waste eco-friendly practices and presented with various alternatives. The aim is to show participants that they can find inexpensive and practical alternatives and thus take simple steps to reduce the amount of waste they produce on a daily basis. Once the clean-up is complete, the waste is sorted and weighed collectively. The activity is rounded off by snacks and refreshments providing an opportunity for participants and volunteers to share their experiences and chat.

The aims of the initiative are to make a lasting contribution to the prevention and reduction of litter and to reduce its impact on biodiversity in Marseille and the Mediterranean Sea. They therefore seek to reduce domestic pollution, a factor in biodiversity loss identified by IPBES, an international group of experts on biodiversity:

- Raise awareness and educate people of all ages in Marseille about the environment through action, focusing on the issue of waste
- Teach everyday eco-friendly habits that will last
- Encourage collective action and civic involvement for lasting change in human behaviour.

Since its creation, the association has rallied and raised awareness among more than 50,000 people during 250 clean-up operations, collecting 42,900 kilograms of waste that did not end up in the sea.

Methodological approach

Collective litter clean-up initiatives take a behavioural, participatory, fun and scientific approach, combining practical action, education and citizen science. These initiatives do more than just protect the Marseille coastline: they also offer a simple and effective ESD opportunity for participants.

Mobilisation, synergies and empowering communication

Public clean-ups involve various local stakeholders (land managers, associations, citizens, elected officials and scientists) and thereby promote synergy between the people, partners and institutions of Marseille in prevention and clean-up initiatives. The clean-ups are sometimes both land-based and sea-based, with the help of maritime diving associations, freedivers and kayakers. The involvement of volunteers from the association is key to supervising the clean-ups. Each volunteer is assigned a specific role, whether it's picking up litter, sorting it or helping with logistics, ensuring that everything runs smoothly and efficiently.

Characterisation and citizen science

1 Déchet Par Jour supports citizen science, developed by MerTerre and the ReMed Zero Plastic networks (in southern France), to reduce marine pollution. Following a protocol for collecting and analysing data on the nature, volume and origin of the waste collected, the waste is categorised to obtain quantitative and qualitative data on pollution.

Success factors	Constraints
• Participatory approach and creation of synergy between stakeholders • Structured organisation: Effective planning through clearly defined roles. • Fun, friendly and educational dimension	• Human resources: A good number of people is key to making sure everything runs smoothly. • Weather conditions: Inclement weather can limit outdoor activities. • Accessibility

This data is used to identify the geographical origins and flows of waste, target the behaviours that generate waste, and identify the economic sectors responsible for waste generation.

Educational and recreational activities

Stands are organised for children and young people, offering entertainment and games, as well as interactive workshops such as “Fishing for rubbish” and “The recycling wheel”. A sustainable village is set up at the clean-up site, where local environmental associations are invited to present their initiatives, such as Sauvage Méditerranée, which makes eco-friendly jewellery from litter, and Les Flamants Verts, which offers DIY workshops using natural products to make cosmetics and household products, for example.

Impacts and accounts

Collective clean-ups can have a big impact in a number of ways. Environmentally, they help reduce waste and marine pollution. Socially, these initiatives strengthen community ties and support networks, while helping volunteers build lasting relationships. According to Julien, a volunteer at 1 Déchet Par Jour, "these events create a collective energy. We no longer feel alone in our fight for the environment!”.

Finally, in terms of behaviour, they encourage the adoption of eco-friendly practices, such as sorting and reducing single-use plastics, contributing to sustainable changes in daily habits to reduce the environmental footprint. “Taking part in these clean-ups has made me aware of the scale of pollution and inspired me to make a long-term commitment. I've learned to sort and reduce my waste!”. By getting involved in litter clean-up initiatives, people directly adopt eco-friendly behaviours, such as sorting waste and reducing plastic use, and are encouraged to incorporate these actions into their daily lives.

The stakeholders

The **operational, scientific and technical partners** are the volunteers of 1DPJ, the MerTerre association (citizen science and characterisation), MerVeille, Boud’Mer, AVA (maritime clean-up/planning and implementation), Recyclop, Sauvage Méditerranée (recycling of collected waste), local town halls, Métropole Aix Marseille, Véolia (logistical support, social facilitation, management of equipment necessary for the project); Comme Avant, Les Flamants Verts (zero waste companies).
The **financial partners are** the city of Marseille, the Aix-Marseille Provence Metropolitan Area, the Fondation pour la Mer, and the Crédit Mutuel Alliance Fédérale Foundation.

Sheet 6

Establishment of a green waste composting platform

In Kebili, Tunisia, with AT3E

The association

AT3E aims to improve living conditions in oasis areas through sustainable management of natural resources. It promotes best practices in nature conservation and supports citizens in adopting innovative techniques related to energy, water and waste management.

PLACE

Kebili

Tunisia (South-west Tunisia)

THEME

Collective management of organic waste

Composting platform

Training young people for green jobs

TARGET AUDIENCE

70 young people targeted, including 15 young science graduates aged between 25 and 35

Students, children, teachers, associations and women.

TIME

18 months

TOOLS

Training rooms, computers

Grinder, lab kits, raw materials

Context

The Kebili region was facing serious environmental problems related to poor management of organic waste, particularly palm residues. This waste was often burned or left to rot, leading to soil degradation, air pollution, and health risks for local residents. At the same time, the region struggled with a lack of economic opportunities, especially for young people, which fuelled unemployment and social inequality.

To address this issue, the "Waste Management: Young Agents of Change" project was launched to transform this waste into high-quality compost, while creating economic opportunities for young people in the region.

Aims and results

The project focuses on getting young people in Kebili involved in environmental protection and increasing their participation in environmental initiatives, particularly waste management action plans. This is achieved by training and supporting young people in green jobs in order to create innovative green projects.

The aims are:

- Protecting a specific area: Contributing to the preservation of local farmland by improving soil quality with the compost produced, thereby reducing dependence on chemical fertilisers.
- Enforcing regulations: Ensuring that organic waste management complies with environmental standards, thereby limiting pollution and related nuisances.
- Reducing high-impact behaviours: Reducing the burning or abandonment of green waste, which causes environmental damage, by transforming it into useful compost.
- Promoting eco-friendly practices: Encouraging farmers and the community to adopt sustainable practices, such as composting, for more environmentally friendly waste management.
- Sharing knowledge about local biodiversity: Raising participants' awareness of the importance of maintaining healthy soils, which are key to preserving local biodiversity.
- Sharing knowledge about local environmental issues: Informing the community about the positive impact of composting in combating soil degradation and climate change.

Methodological approach

AT3E took a participatory approach at every stage of implementation. Young participants played an active role in planning, managing, and carrying out activities. The local community was also involved through awareness-raising workshops and training sessions.

The project focuses on taking action by setting up real composting platforms. This allows participants to experiment directly with composting techniques. Knowledge is shared through theoretical training and workshops:

Training workshops
Theoretical and practical training sessions are organised to teach waste management and composting techniques. These workshops provide participants with an understanding of the fundamental principles and how to apply them in the field.

Awareness raising sessions
Awareness days are organised to inform the general public and young people about the challenges of waste management. These sessions aim to raise awareness of the environmental impact of waste and the importance of composting.

Working collaboratively
The workshops include dialogue between local stakeholders, young people and institutions (associations, local authorities, etc.), fostering engagement and collaboration for joint environmental initiatives.

Site visits
Visits to composting sites and other facilities allow participants to see the methods in action first-hand and gain a better understanding of how they work.

Practical sessions
Practical experience with composting units means participants can put what they have learned into action, making it a hands-on, collaborative approach.

Impacts and accounts

From an environmental perspective, the project has yielded tangible results, including the conversion of green waste into high-quality compost, thereby helping to improve soil quality and reduce the amount of organic waste sent to landfill.

The project also had a socio-economic impact, as it was launched to transform this waste into high-quality compost while creating economic opportunities for young people in the region. It has encouraged young women to get involved in agricultural initiatives, strengthening their role in sustainable resource management and their economic independence. As one project participant said, it has helped her to “develop confidence in her entrepreneurial abilities” and encouraged her to start her own project.

There has also been a collective shift in awareness among young people (graduates, students and unemployed), civil society (associations) and teachers about waste management. As another participant put it: “This practice is effective because it meets the environmental and economic needs of the region while offering sustainable solutions that benefit the community.”

Success factors	Constraints
• Targeted training and capacity building • Support from international partners • Engagement and involvement of the local community	• Coronavirus pandemic: lockdown restrictions and difficulties in organising gatherings • Delays in compost maturity due to climatic factors

The stakeholders

The **financial partners** are the French Embassy in Tunisia, the French Institute in Tunisia (co-financing and logistical support) and the PISCCA Programme (grant to support civil society initiatives). **The technical partners** are the Regional Agricultural Development Commission (CRDA) of Kebili (technical and logistical support), the Espace Entreprendre de Kebili (co-organisation of workshops on green investment, support for young entrepreneurs), the Municipality of Kebili (collaboration on waste management diagnostics and the organisation of workshops), the Higher Institute of Technological Studies (ISET) in Kebili (partnership for awareness-raising workshops on waste composting), and the "Ghadwa - Youth and Environment" network.

GLOSSARY

Capitalisation:

The capitalisation process involves systematically identifying, analysing, explaining and modelling the knowledge acquired during a sustainable development education project so that others can learn from it, use it, adapt it and avoid repeating the same mistakes. It looks more closely at certain aspects of the action and analyses the ways in which change has happened.

Education:

The action gives people enough information so they are able to discuss and understand a specific topic, with reliable data and arguments about the issues.

Education for Sustainable Development (ESD):

ESD involves learning about the relationships between environmental, economic, social and cultural issues and should help participants gain a better understanding of:

- the interdependence of human societies and ecosystems;
- the need to make informed and responsible choices and adopt behaviours that take these ecosystems into account;
- the importance of global solidarity.

Best practice:

Best practice is a successful experience that has been tested and replicated in different contexts and can therefore be recommended as a model. It is worth being shared so it can be adapted and adopted by a wider audience.

Citizen science:

Citizen science is a way to work together to create and use scientific knowledge in different areas, like biology, meteorology, astronomy, coastal erosion, air quality, and more.

Stakeholder:

Any player (individual, organisation, group) involved in a project, decision or action, and whose interests are affected in some way by its implementation. Here, the term “target audience” can be considered as a stakeholder.

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Liberté
Égalité
Fraternité

Délégation interministérielle à la Méditerranée

With

Coordination : 1 Déchet Par Jour

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