GREENING THE CAMPUS

A step-by-step guidebook for Schools

October 2021

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Contents

EXECUTIVE SUMMARY

This guidebook has been produced through the contribution of four international partners within an Erasmus+ KA2 Project No.2018-1-MT01-KA202-038471 with the Title:

Aligning VET curricula to Greening and the

Sustainable Development Goals (SDG)

The partners, all operating in Vocational Education and Training (VET) and hailing from Malta, Spain, Greece and North Macedonia, have collaborated to compile this guidebook that can be referred to by schools and educational institutions as a simple, straight-forward guide on how to embark on the road of Greening and sustainability within a school. The contributors have put their personal experiences in this guidebook to benefit schools of any size and drawing up the guidebook in a step-by-step manner.

THE PARTNERS

The partners to this project are:

- Malta College of Arts, Science and Technology (MCAST), Malta
  - https://mcast.edu.mt/
- Sivitanidios Public School of Trades and Vocations, Greece
  - https://www.sivitanidios.edu.gr/
- Zetva na znaenje, North Macedonia
  - www.znz.mk
- Centro Público Integrado de Formación Profesional Pirámide, Spain
  - https://www.cpifppiramide.com/

INTRODUCTION

The World is facing an urgent and immediate challenge with regards to the environment. We must act fast, in any possible manner, to safeguard our planet and keep it habitable by all the living species for the generations to come. There is a strong consensus about this both in the European Union (EU) and at the United Nations (UN). Yet, various countries are struggling in this regard and lack solid formal preparation and training to address environmental issues.

Vocational Education and Training (VET) plays a very important part in all of this as it prepares learners in a variety of subject fields that are all connected, in some way or another, to the environment and our planet. In fact, they may contribute directly or indirectly to our habitat. Besides, present day students are citizens of the world and will be tomorrow's leaders and policy makers who will have a direct impact on the future of our planet. Therefore, the impact of teaching about Greening to young learners cannot be underestimated.

The subject of Greening (that is the process of becoming more active about protecting the environment) needs to be introduced in schools where it is not yet present, and sustained and supported in schools where it is already present in order to expose and prepare our young generations on this critical subject that is quickly becoming the most important factor that defines the future of life on Earth.

This guidebook offers a simple step-by-step approach that schools can follow to introduce effectively the Greening concept in their local environment, within their organisations.

THE ROAD MAP FOR INSTITUTIONS

The proposed Road Map to Greening and sustainability for schools needs to start from the commitment of top-management to the goal. Greening and sustainability require an institutional commitment that can only occur if the top-management of the school truly embraces the goal. There can be various modes how this can happen, but the most popular and effective is the following two-step approach.

The first step is for the school management to set-up a Greening committee within the institution. Ideally this should be set-up voluntarily by representatives of management, staff and learners. The size of the committee should be between 3 to 7 members in order for it to function properly. The committee should have a degree of autonomy and allocated resources to be able to operate flawlessly.

The next step is for the Greening committee to draw up an institutional policy or document through which the institution commits to Greening. This does not have to be a large and complex document, but rather a simple, clear point-form statement of what the institution commits itself to do in terms of Greening and sustainability. This policy or document is eventually endorsed by the school management.

Once these two fundamental steps are completed, the Greening Committee can proceed to take stock of the local environment, meaning the school or institution in order to identify the areas and aspects that need to be addressed in the Greening and Sustainability actions. Various options exist to complete this process; for example, this can be achieved through a brain-storming process that includes all the committee members or through an institution-wide consultation process. Subsequently, the Greening committee can evaluate and prioritise on the initiatives that address some or all of the areas identified.

One must point out the importance of working in line with the Sustainable Development Goals (SDGs) set out in the 2030 Agenda, as well as our responsibility as teachers to contribute to creating social awareness in our learners about the environmental problems caused by the generation of waste, waste of energy and natural resources.

In order to facilitate this step, we are sharing the most commonly identified areas of interest and impact across institutions. These are:

- Energy (including reducing waste and switching to renewable energy). This activity brings with it substantial financial savings;
- Water (including reducing waste and reusing grey-water). In line with SDG 12, a responsible consumption of the water resources. This can be achieved by raising awareness among the students and users of our schools about rational consumption as well as by adapting water-saving facilities effectively.
- Waste (reduce, reuse, recycle). This includes the reduction or elimination of paper use. Good waste management addresses several sustainable development objectives and a number of examples are included in this guidebook.
- Transport (reducing emissions by opting to environmentally friendly means of transport). The mobility of students, teachers, and all the staff involved in a school for its proper functioning offers an important margin of improvement. Improvements can include the use of public or shared transport (pooling), electric or hybrid two and four-wheel vehicles, among other possibilities.

It is recommended that the Greening committee starts on the minimum number of initiatives/activities in order to familiarise themselves with the process and learn about the methodology. Eventually, as it gains experience, it can initiate activities in parallel, thereby multiplying its initiatives.

THE PROCESS TO GREENING

Having identified and prioritised the areas to act upon, the next critical phase is to adopt an effective methodology to come up with actions and tackle the issue at hand. The following approach, taken from UNESCO UNEVOC's *Greening Technical and Vocational Education and Training guide* is very clear:

First, understand the process of Greening VET institutions. Understand why it is important to undertake a Greening process, and how it could be positioned for an institution within a multi-level and multidimensional approach to reform in the context of sustainable development. This step outlines the scale, scope and range of Greening, including economic, social and environmental actions. Importantly, it helps teams within institutions understand the nature, the broad approach and the scale of the required changes. It offers helpful and quick reference to the five approaches for implementing ESD (Education for Sustainable Development) in TVET institutions.

The second step is Planning the process of Greening. It is important to develop a planning framework and strategy before starting the main Greening process. The step outlines strategic planning approaches, such as building the motivation for a whole-institution approach, developing a vision, the engagement of key stakeholders and help in setting priorities. To give guidance on how these priorities could be implemented, examples are provided. These offer ideas and methods for organizing activities around a green plan.

The third step focuses on developing an implementation strategy. This step builds on the five approaches for implementing ESD in TVET institutions, and identifies opportunities for making them operational within the daily routine of the institution. Its suggestions will assist with the core tasks of creating an institutional policy framework to allow simultaneous work on Greening the Campus, Greening the Curriculum and Training, Greening Research, Greening the Institutional Culture, and assisting the broader workplace and community in their own Greening efforts.

The fourth step is to monitor and assess the efforts and results of the Greening process. This step describes the need both to develop assessment criteria that can be communicated and celebrated, and to recognize that some hoped-for outcomes do not lend themselves as readily to assessment. These more difficult to assess outcomes must not be overlooked in the planning and implementing phases. While quantitative measures indicate progress in, for example, energy and water consumption, it may be necessary to supplement this with qualitative assessment based on the opinions of employers, faculty and graduates.

The approach highlighted in the UNESCO UNEVOC Greening TVET manual helps prepare the Greening committee to face its tasks. Having a clear vision of its objectives and striving through concrete actions to achieve this through its mission. A simple and very

effective method used thereafter to identify, implement ideas and test the effectiveness of the change is the PDCA (Plan-Do-Check-Action) spiral approach. The PDCA cycle is a continuous loop of planning, doing, checking and acting. It provides a simple and effective approach for solving problems and managing change.

FAQs

The following is a set of Frequently Asked Questions about Greening and Sustainability.

Is Greening the same as Sustainable Development?

Although some people think that the concepts of "greening" and " sustainable development" are identical, the two concepts have been differentiated due to the broadening of the approach to education for sustainable development. The environmental problem is no longer addressed from a purely technical or epistemological point of view, but is also considered a social problem of conflict of interest and, ultimately, a problem of human behaviour. The consequence of this is the expansion the subject of the study and solution of environmental problems in social and economic fields, such as human rights and democracy, gender equality, multiculturalism, social tolerance, health assurance. and quality of life, tackling poverty, collective responsibility, the market economy.

What is a Green Campus?

A place where environmentally responsible practice and education go hand in hand and where environmentally responsible tenets are borne out by example.

As values and way of life develop at a young age, education is an essential tool for raising the level of society, achieving conscious decision-making, good governance and the promotion of democracy. Therefore, education for sustainable development is a special category of education. To achieve its goal, it must give people the ability to change mindsets, develop critical thinking, judge and make decisions towards sustainable development.

What is a VET Green Campus?

VET plays an important role in helping make transitions to a low-carbon economy and climate-resilient society.

VET greening involves ad hoc actions, planned on a case-by-case basis, even when there is a strategic policy framework. Compared to the systems of responding to the needs of the professions that are becoming greener, experience in many EU countries shows that the actions within the restructuring is much more ad hoc, as these are opportunistic responses to new market demands, reflected in changing skills.

What opportunities does a Green-Campus offer to institutions?

A Green Campus provides a forum for management, academic staff and students to meet and engage on environmental issues. Furthermore, it:

- empowers students and staff creating a more balanced campus community,
- involves the campus community in environmental decision-making,
- improves learning through of students' development,
- links with other institutions nationally and internationally.
- improves the campus environmental performance, reduce environmental risks and impacts, and achieve financial savings,
- sets a good example in the community, involving local stakeholders, and
- provides positive publicity for the institution.

What does Greening the Campus require?

As all institutional actions, it primarily requires the ongoing support of the Head Management. Equally important, however, are:

- A willingness to involve representatives from all sectors of the campus community in decision-making and action at every stage.
- Active involvement and support from the local community.
- A willingness to take action to instigate long-term change.
- What are the main disadvantages of Greening the Campus?
- May need significant initial investments.
- Going green takes some effort.
- May be time-consuming.

Which skills and environmental considerations should be taken into account for Greening VET?

Changes in occupations and work, the frequent transition from one job to another, learning without frontiers and the need for lifelong skills development also require a deeper understanding of VET skills.

In different sectors served by vocationally skilled and qualified workers, there are important actions to consider. A lack of an adequately trained workforce could create a potential skills gap or skills shortage.

Key considerations for greening the VET agenda to enable sustainable practices in sectors served by a vocationally skilled and trained workforce, involve the following sectors:

- Energy - where individuals should be trained to possess technical knowledge for application of energy-efficiency measures; technical knowledge for application of renewable energy technologies; upgraded skills for emergent energy markets
- Iron and steel – where technicians and professionals should be trained following an established code of practice or adjustments in environmental standards and job sector regulations over a period of time, in efficient use of energy and resources in industrial production, controlling the material cycle and energy-efficient applied technologies.
- Manufacturing - where the trained workforce is needed with the knowledge and skills required to enforce the highest environmental standards and practices throughout the sustainable construction process, including sustainable building design; sustainable building technologies and construction materials; water supply and sanitation; decentralized electricity generation and the integration of renewable energy generation methods into buildings; energy efficiency in buildings; solid waste treatment; reuse of materials and controlled demolitions
- Agriculture - where trained individuals should provide technical knowledge for new practices like organic farming and agroforestry; technical knowledge for the application of energy-efficient technologies in the agriculture sector; efficient use of water and irrigation technologies; use of information and communication technology (ICT) in agriculture.
- Food processing - where a qualified workforce to support processes of: advanced wastewater treatment practices; improved packaging; improved sensors and process control (to reduce waste and improve productivity); food irradiation; water and wastewater reduction using closed loop/zero emission systems.

Will the Pandemic recovery require a "skills revolution"?

According to Jürgen Zimbel, Executive Director of CEDEFOP, a "skills revolution" will require a post-pandemic recovery in Europe and the transition to green, digital and equitable economies, focusing on vocational education and training (VET) and in particular its lifelong form.

This need (for skills upgrading) is becoming more pressing, due to the effects of the coronavirus pandemic that are already profoundly affecting labor markets, in terms of

both job loss and the reconstruction of the work itself (form) through new technologies and digital media.

Does Greening promote the development of business innovation?

International economic trends show the way to the 'greening' of entrepreneurship: the cost of using resources but also of disposing / managing the residues (waste) of the production process increases with the introduction of 'green' taxes and the simultaneous timeliness of materials (resources).

Leading business organizations around the world are already achieving significant (financial) economic and commercial benefits from improving their environmental performance, taking advantage of relevant opportunities that stand out and effectively potential risks.

Is there a relation between EMAS and Greening the Campus initiatives?

Environmental management systems were mainly conceived for companies from the industrial sector (Council Regulation 1836/93). Nevertheless, the current policy of the EU is to extend the implementation of the Environmental Management and Audit Scheme (EMAS) to activities different from the original ones of contaminating industry.

A green campus is one which addresses environmental challenges in all its fields of activity: administration, research and education. Higher education institutions are in an outstanding position to act as incubators, role models and multipliers for sustainable development among researchers, people in leadership positions, and in wider society.

An Environmental Management System according to EMAS is a valuable tool for paving the way to a green campus, helping education institutions exploit their environmental sustainability potential in a systematic and accountable manner. Apart from playing a particularly effective role in reducing the direct environmental impact of the education institution, the implementation of EMAS can also serve as an object of study and as a focus point for environmental learning among stakeholders within the institution and in wider society.

PARTNER EXAMPLES AND BEST PRACTICES

Capacitor Bank

CAPACITOR BANK

1. **AREA/SECTOR**
   - Energy

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   - SDG 12 -Responsible consumption and production
3. **VET CENTRE (COUNTRY)**
   - CPIFP Pirámide (SPAIN)
4. **DESCRIPTION OF INITIATIVE / ACTIVITY**

At the CPIFP Pirámide, there are VET degrees related to electromechanical maintenance, welding, machining, that use electric motors, electric arcs, etc. All these systems are consumers of reactive power. To reduce the consumption of reactive power at the CPIFP Pirámide facilities a capacitor bank has been installed in the electrical substation, improving the power grid quality.

5. **PICTURES**

ZERO KM FOOD

1. **AREA/SECTOR**
   - ENERGY

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   - SDG 12-Responsible consumption and production
3. **VET CENTRE (COUNTRY)**
   - CPIFP PIRAMIDE
4. **DESCRIPTION OF INITIATIVE / ACTIVITY**

Due to the historical function of our center, we have our own kitchen that allows us to produce food not only for ourselves, but also for different schools in our city, Huesca.

The policy of the company that runs the school canteen is to use local products. This way, it contributes both to the improvement of local economy and it also reduces emissions to the atmosphere avoiding food transportation.

5. **PICTURES**

HAZARDOUS CHEMICAL WASTE

1. **AREA/SECTOR**
   - Waste

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   - SDG 11 -Sustainable cities and communities
3. **VET CENTRE (COUNTRY)**
   - CPIFP Pirámide (SPAIN)
4. **DESCRIPTION OF INITIATIVE / ACTIVITY**

The internal management of hazardous waste begins at the place of generation of these (laboratories) following the next premises:

- Minimization: Trying, as far as possible, to generate the minimum amount of hazardous waste, by **reduction or substitution and/ or reuse** of the reagents in the place of generation or in other areas or departments.

- **Disposal:** At the point of generation by chemical reactions that turns them into non-hazardous products.

Physical or chemical treatments may also be used to reduce toxicity, precipitation reactions, liquid separation reactions, neutralisation reactions, etc., using standardised and documented procedures.

In each laboratory generating hazardous waste, an appropriate protocol shall be followed according to the type of waste produced.

At the end, an authorised waste management company is responsible for the removal of waste.

5. **PICTURES**

Charging point for Electrical Vehicles

CHARGING POINT FOR ELECTRICAL VEHICLES

1. **AREA/SECTOR**
   - ENERGY

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   - SDG 12-Responsible consumption and production
3. **VET CENTRE (COUNTRY)**
   - CPIFP PIRÁMIDE
4. **DESCRIPTION OF INITIATIVE / ACTIVITY**

Throughout the 2017-2018 school year, a project to provide Huesca with the first electric vehicle recharging point powered by solar energy was carried out. It was installed in the CPIFP Pirámide to encourage the use of electrical cars among teachers and students. During teaching hours, the battery array associated with a photovoltaics facility provides cars with free power. Again, this measure was thought of as a means of decreasing the VET centre carbon footprint: it actually provides clean, free energy to arrive and leave the centre every day.

This initiative has been so successful that it is daily used by a number of teachers and it is also used by local car drivers. There are also some apps that include this public facility.

5. **PICTURES**

RECYCLING BATTERIES AND LAMPS

1. AREA/SECTOR

- Waste

2. MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED

- SDG 12 -Responsible consumption and production

3. VET CENTRE (COUNTRY)

- Sivitanidios Public School of Trades and Vocation (Greece)

4. DESCRIPTION OF INITIATIVE / ACTIVITY

Batteries are considered hazardous waste as they contain heavy metals such as mercury, cadmium, lead, chromium, etc. which are particularly dangerous to public health. When batteries end up in a landfill, exposure to high temperatures or rain may lead to the release of hazardous components to be transported through the ground to the aquifer and the overall environment. On the contrary, when we recycle batteries, first and foremost, we protect the environment from pollutants, while some of their components can be reused for the production of new batteries or other products, thus limiting the waste of raw materials and reducing the volume of waste.

In addition, lamps contain harmful to the environment materials such as (plastic, mercury, cadmium, etc.), while also materials (ferrous & non-ferrous metals, etc.) that can be used for manufacture of other products.

Since 2015, special transparent collection bins for used batteries (Recycling of Portable Batteries) and permanent lamp collection bins have been installed at Sivitanidios School's laboratories and at its Technical Support department. All types of batteries up to 1500 grams are collected in the bins, whether they are primary (disposable) or secondary (rechargeable), as well as various types of lamps. Batteries are recycled every 1,5 years and the Technical Support Department is responsible for their collection procedure. As far as the lamps are concerned, authorized carriers of "FOTOKYKLOSI SA" company, after consultation with the Technical Support Department, receive the lamps on an annual basis and then forward them to Sorting / Processing / and Recycling Units or to temporary storage ones.

5. PICTURES



Recycling of Electrical and Electronic Devices

RECYCLING OF ELECTRICAL & ELECTRONIC DEVICES

1. AREA/SECTOR

- Waste

2. MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED

- SDG 12 -Responsible consumption and production

3. VET CENTRE (COUNTRY)

- Sivitanidios Public School of Trades and Vocation (Greece)

4. DESCRIPTION OF INITIATIVE / ACTIVITY

By recycling old electrical devices, we reduce the volume of garbage, the need for new landfills (Urban Landfills) and the risk of environmental pollution from the harmful substances that they contain. Recycling of electrical and electronic waste recovers usable materials, such as metals, glass and plastic, which may be reused in the production process.

Since 2016, Sivitanidios School collects and recycles every two years all obsolete electrical and electronic equipment (old, not repairable, not used). Permanent special transparent small equipment collection bins are placed in several School's laboratories. The process is coordinated by the Procurement and Material Management department, which informs the all School's Educational units and administrative services about the collection deadlines, while the equipment is gathered in places accessible to the staff of the Technical Support department. Finally, authorized carriers of "Recycling Devices SA" company, in collaboration with the Technical Support department, collect and receive the equipment / devices to be recycled.

5. PICTURES




SOLAR WATER HEATING

1. **AREA/SECTOR**
   - Energy

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   - SDG 7 - Affordable and clean energy
3. **VET CENTRE (COUNTRY)**
   - CPIFP Pirámide (Spain)
4. **DESCRIPTION OF INITIATIVE / ACTIVITY**

   A solar water heating system was installed on the roof of the halls of our residence in 2015, within the framework of a training course for unemployed workers. The building was equipped with an array of solar panels that provide DHW for the room showers.

   This system is one of the most efficient when we talk about solar energy. It involves heating a fluid in the primary circuit, which reaches a tank in which there is a heat exchanger where the DHW is available for its use, heated and stored.

   Having the water previously heated, drastically reduces the energy necessary for the requirements that it has.

5. **PICTURES**

Water Consumption Reduction

REDUCTION WATER CONSUMPTION

1. **AREA/SECTOR**
   - Water

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   - SDG 12 -Responsible consumption and production
3. **VET CENTRE (COUNTRY)**
   - CPIFP Pirámide (Spain)
4. **DESCRIPTION OF INITIATIVE / ACTIVITY**

A seemingly small step was implemented in 2013, all washbasins in our center were fitted with water saving taps.

5. **PICTURES**

PV Farm

PHOTOVOLTAIC FARM

1. **AREA/SECTOR**
   - Energy

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   - SDG 7 - Affordable and clean energy
3. **VET CENTRE (COUNTRY)**
   - CPIFP Pirámide (Spain)
4. **DESCRIPTION OF INITIATIVE / ACTIVITY**

A small photovoltaic farm formed by 10 solar panels was installed in 2010 and it has been expanding ever since. At present, the installation consists of forty four 225w and 320w panels and yields around 12Kw.

The photovoltaic farm was designed not only as a means of saving on the electricity bill, but also to decrease the carbon footprint of our college.

5. **PICTURES**

EFFICIENT LIGHTING

1. **AREA/SECTOR**
   - Energy

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   - SDG 12 -Responsible consumption and production
3. **VET CENTRE (COUNTRY)**
   - CPIFP Pirámide (SPAIN)

4. **DESCRIPTION OF INITIATIVE / ACTIVITY**

Most of the long halls in the building are lighted with skylights to avoid the use of electricity. However, there are some spots where natural light is too dim and LED lights are used instead. Taking advantage of the design of our center, and given that in most of the halls, there is no other floor upstairs, these types of elements have been installed as they are one hundred percent efficient, at least during the day.
All of the electric light in our center uses LED technology, since this technology has led to a revolution in terms of brightness and efficiency. In addition, it has an increasingly reduced price which makes it more competitive, and one of the most profitable initiatives in our center.

5. **PICTURES**

CHARGING POINTS FOR ELECTRICAL BICYCLES

1. **AREA/SECTOR**
   - Energy

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   - SDG 7 - Affordable and clean energy
3. **VET CENTRE (COUNTRY)**
   - CPIFP Pirámide (SPAIN)
4. **DESCRIPTION OF INITIATIVE / ACTIVITY**

   With the idea of improving student and teacher mobility, four of our students from the degree: Renewable Energy presented a winning business idea in the 2016 Local Entrepreneurship Fair. It consisted of the installation of an electric bicycle recharging point in our center. This project was eventually financed by the Huesca Town Council, which agreed to install another one in the centre of the town (our center is 5.5 Km away from Huesca). This project materialized throughout the 2016/2017 school year.

   Our students won the contest.

5. **PICTURES**

MAKING BIOHUMUS

1. **AREA/SECTOR**
   - Waste

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   SDG 12 -Responsible consumption and production
   SDG 4 – Quality education

3. **VET CENTRE (COUNTRY)**
   - North Macedonia

4. **DESCRIPTION OF INITIATIVE / ACTIVITY**

BIOHUMUS is a high quality organic fertilizer expected from manure with the help of california worms. Our school SOU "Orde Chopela" from Prilep, North Macedonia is a secondary vocational school. In our school, in addition to other qualifications, there are also the qualifications of agro-technicians, phytopharmacists, technicians for farm production.
In the curricula of these qualifications during the practical work, agricultural techniques for production of biohumus are provided and performed.
This practical teaching is performed by students monitored by teachers - graduate agronomists. Because of that, our school regularly produces biohumus which is then used for further safe production of various crops in the greenhouse and in the yard intended for that behind the school.
The process of producing biohumus with the help of California worms is explained below. California worms process manure for a year, then dry, sow and pack. It is rich in all organogenic elements, trace elements and bioactive microorganisms. Ideal for use in organic farming. It is placed next to the root and can not be overdosed, and plants easily and quickly assimilate it. Biohumus contains 54.05% organic matter, 28.80% ash, 3.4% nitrogen and 4.7% potassium.
Microbiological and chemical analyzes have determined that biohumus is a strong biogenic fertilizer that guarantees good soil biogenesis. It does not contain nematodes, protozoa and phytopathogenic bacteria and fungi and it is important to note that the biofertilizer has shown good results in terms of high water retention, so that after entering the soil increases its water retention which is a very important factor because plants have a large need for water.

5. **PICTURES**

WASTE SEPARATION

1. **AREA/SECTOR**
   - Waste

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   SDG 12 -Responsible consumption and production
   SDG 4 – Quality education

3. **VET CENTRE (COUNTRY)**
   - North Macedonia

4. **DESCRIPTION OF INITIATIVE / ACTIVITY**

In the past years our school recycles paper i.e. collects all the waste paper such as books and materials and in collaboration with a paper factory PakoMak the paper is being reused. Twice a year the people from PakoMak come to our school to collect the paper we gather. Also PakoMak has delivered waste bins and placed them in different areas inside the school in order to recycle all types of waste.
Our school has also organised numerous events and fashion shows with creations made of recycledand reused ítems. The school has created an eTwinning Project EcoFashion where students created and sew clothes out of old clothes and bags.

5. **PICTURES**

Recycling

Recycling - Creating

1. **AREA/SECTOR**
   - Waste

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   - SDG 12 -Responsible consumption and production
     SDG 4 – Quality education

3. **VET CENTRE (COUNTRY)**
   - North Macedonia

4. **DESCRIPTION OF INITIATIVE / ACTIVITY**

Discovering information related to recycling programs, designing and manufacturing products using materials that will help reduce environmental impact.

What does the school recycling plan include?

Waste management and recycling are important topics of conversation with school-age children. About 25% of school waste is recyclable paper and 50% of food and paper waste that is not recyclable and can be composted

The plan includes educating the children in the classrooms and describing all the activities they will perform (school staff, students) in the school in order to achieve a successful recycling program. These activities may include changing the waste collection infrastructure, rearranging recycling bins, educating and dealing with problematic waste streams. The plan is tailored to the needs of the school and is based on the types of waste generated.

5. **PICTURES**

GREENING CAMPUS EVENTS

1. **AREA/SECTOR**
   - Waste

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   - SDG 12 -Responsible consumption and production
3. **VET CENTRE (COUNTRY)**
   - Sivitanidios Public School of Trades & Vocations (Greece)
4. **DESCRIPTION OF INITIATIVE / ACTIVITY**

Events of any size can generate huge amounts of unnecessary waste, from both a physical waste and carbon point of view. Waste and catering are key polluters in the events sector.

In our institution since 2017, we try - with a bit of innovative thinking - to organize step by step greener events. In order to minimize waste (& cost), we make event catering as 'green' as possible and minimize food wastage, we use seasonal and sustainable food from local area market (bakeries, bio food stores, small local restaurants etc), we use recyclable or biodegradable utensils, seasonal flowers and aromatic plants for decorations and we ensure that freebies are valuable or edible, so they're not thrown away. Examples of our event goodie bags include: coffee mugs, food items, handmade cosmetics and pharmaceutical products from our students in Chemistry and Cosmetics Laboratories. Sometimes event catering is prepared from our chefs and pastry-bakery trainees at Vocational Training Institute. We also encourage our guests and delegates travelling to our school by public transport or car sharing and provide all information about local public transportation.
Our green tips for meetings and all event activities are the 6 R's: Rethink - Refuse - Reduce - Reuse - Recycle - Responsible Disposal.

5. **PICTURES**



Reducing the use of plastic

REDUCING THE USE OF PLASTIC

1. **AREA/SECTOR**
   - Waste

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   - SDG 11 -Sustainable cities and communities

3. **VET CENTRE (COUNTRY)**
   - MCAST, MALTA

4. **DESCRIPTION OF INITIATIVE / ACTIVITY**
   To reduce the generation of plastic waste on the campus from plastic water bottles, a water bottle cleaning and filling machine was installed. In addition, reusable Aluminium water bottles were purchased and distributed free to the students. The water used in the bottles can be at room temperature or cold and is filtered and provided at the highest quality level.

5. **PICTURES**

LIGHTING CONTROL

1. **AREA/SECTOR**
   - Energy

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   - SDG 11 -Sustainable cities and communities

3. **VET CENTRE (COUNTRY)**
   - MCAST, MALTA

4. **DESCRIPTION OF INITIATIVE / ACTIVITY**
   To reduce the waste of electrical energy due to lights being left on when rooms are not in use, sensors have been installed across the campus in order to switch off lights automatically when rooms are empty.

5. **PICTURES**

WATER RECYCLING

1. **AREA/SECTOR**
   - Water

2. **MAIN SUSTAINABLE DEVELOPMENT GOAL ADDRESSED**
   - SDG 11 -Sustainable cities and communities

3. **VET CENTRE (COUNTRY)**
   - MCAST, MALTA

4. **DESCRIPTION OF INITIATIVE / ACTIVITY**
   To recycle and reuse greywater in agriculture. A roof garden was set up on the campus that is irrigated by recycled water. Grey water collected from the washhand basins of the institute's five-story building's bathrooms is initially stored in a reservoir in the basement. It is then pumped through a polyethy-lene pipe to the three tanks on the building's roof, where it is treated and stored to irrigate the building's green roof. The latter consists of plant trays with species adapted to the local climate, irrigated with treated greywater through a controlled irrigation system.

5. **PICTURES**

REFERENCES

1. UNESCO UNEVOC Greening Technical and Vocational Education and Training https://unevoc.unesco.org/up/Greening%20technical%20and%20vocational%20education%20and%20training_online.pdf
2. SDGs - United Nations Development Programme (UNDP) has been advocating the 17 Sustainable Development Goals (SDGs) – part of a wider 2030 Agenda for Sustainable Development for our planet. http://www.undp.org/content/undp/en/home/sustainable-development-goals.html
3. *Green Guide for Universities* by The International Alliance Of Research Universities (IARU)

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