

Malta - Reducing the carbon footprint in Agribusiness Education

Title of inspiring practice	Reducing the carbon footprint in Agribusiness Education
Geographical area	Mosta, North-central Malta Maria Regina College Mosta Żokrija Secondary School
Period of implementation	The initiative started on May 2022 and is planned to end in May 2023. Two workshops with VET Agribusiness students and eEducators within this school will be organized. Final summary of the project will be published by the Ministry for Education, Sport, Youth, Research and Innovation as part of the project dissemination.
Rationale	As response to the increased popularity of Agribusiness and Eco-education within Malta, in conjunction to the Green Deal targets, this is a project that highlights education for sustainable and environmentally conscious farming within the Maltese context focusing on manure and fertiliser management.
Scope of the practice	Auxiliary to the current VET Agribusiness programme offered in secondary schools, such project is intended to showcase real industrial scenarios and also equip future farmers with 21 st century skills within this context.
Educational level	EQF levels 1-3 offered within secondary schools (ages 12-16)
Introduction and context	<p>As a form of early VET, Malta has adopted the concept of offering a number of elective/option subjects that follow VET programmes and form part of their assessment forms part of the Secondary Education Certificate issued by the University of Malta. Agribusiness, being one these VET subjects, is offered in a number of secondary schools, including Maria Regina College, Mosta Żokrija Secondary where this initiative was taken. Majistral Action Group Foundation released an expression of interest for funding to local entities to produce green projects under “<i>The Rural Development Programme for Malta 2014-2020</i>” project. The working group for this initiative, consisting of officials from Maria Regina College and the Directorate for Learning and Assessment Programmes within the Ministry for Education, Sport, Youth, Research and Innovation of Malta came up with a project that addresses the regulations concerning fertiliser and manure management (Nitrates Action Plan programme). Being an educational institution offering Agribusiness education, Maria Regina College is fostering good practices in agriculture. The objectives being: Shifting to an agriculture that is environmentally conscious; Reduction in the carbon footprint especially targeting the release of methane from manure: Reduction in the use of synthetic fertilisers by utilising the mineral fertiliser extract through the utilisation of a bio-digester.</p> <p>The project was co-funded through local funds (25%) and EU funds (75%) from the European Agricultural Fund for Rural Development (EAFRD). Funds required for the purchase of the bio-digester amounted to a total of EUR 4 354.20, excluding VAT. Other minor expenses were required for the preparation of the site for installation which were borne by the school.</p>
Key activities and outcomes	<p>A 1.7m³ bio-digester was installed to process the manure produced from the small-scale rabbit farm (25%) and the chicken farm (50%) at the school.</p> <p>The manure indicated is produced during most of the colder months of the year during which it is prohibited to scatter the manure in open fields.</p> <p>This manure is digested together with pond water that is also found on the same premises and hence also promotes water conservation.</p> <p>Rather than releasing methane in the atmosphere while this manure is being fermented, through the use of the bio-digester, this gas is captured and utilised for various activities such as operating a gas stove.</p>

	<p>Additionally, the solution that is left within the bio-digester tank after fermentation, is a concentrated solution of nutrients that after dilution is utilised instead of synthetic fertilisers and hence helps pave the way to ultimately achieve organic farming practices and reduce the dependency on the synthetic sources.</p> <p>Students are involved during all parts of the project and are given practical hands-on tasks to use and monitor the system. One the workshops (March 2023) will involve students and educators in establishing the nutrient content of the fertiliser solution produced annually by the bio-digester and also produce a cost effectiveness case study through the use of this digester with respect to utilisation of gas and fertilisers. The case study will also estimate the carbon footprint reduction as a result of using such apparatus.</p> <p>A summary of the whole project and the results will be published in May 2023 on the Ministry for Education, Sport, Youth, Research and Innovation as part of the project dissemination. Results will include the type a nature of nutrients in the mineral fertiliser solution, the estimated saving in fertiliser as a result of using the bio-digester bi-product, the amount of methane and carbon dioxide that was not released in the atmosphere.</p> <p>The main challenges of the project included to get the school farmers to get accustomed to use the bio-digester and its products and the fact that most of its operation is during the winter months where the bio-digester is at its lowest performance due to a decrease in temperature.</p>
Contacts and sources	<p>Vocational and Applied Agribusiness Maria Regina College Secondary school, Żokrija, Mosta Malta.</p> <p>Ministry for Education, Sport, Youth, Research and Innovation of Malta Directorate for Learning and Assessment Programmes</p>
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