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SUSTAIN NEWSLETTER #1

Welcome!

We are glad to share our latest contents, discoveries and news, so you are part of our journey and learn together with us about how to make our landscapes more sustainable. Enjoy!

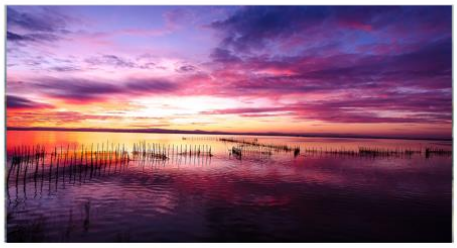
Three different European regions team up to target issues of sustainability in their landscapes

The Netherlands, Spain and Cyprus are partners in the Erasmus+ project "SUSTAIN" with the aim to organize a series of online learning modules on sustainable landscapes for secondary schools' pupils. **The goal?** To raise awareness about the urgency to contribute to the local environment, in the three project regions. Each partner region will address one urgent local sustainability issue and will develop a teaching module around that issue. The ultimate goal is that the modules will be **exchangeable between the three countries**.

So, what's the local urgency?

In the Netherlands it is all about the decline in populations of meadow birds and food chain sustainability; in Spain it is the issue of water management and the circular economy, taking the Albufera lake as a case study; in Cyprus the issue is large scale trapping and consumption of migrating birds and the way the landscape is altered by humans in order to accommodate this trapping.

Black-tailed Godwits -80% is breeding in Fryslan



Albufera lake – Valencia

This picture by Kumarmp82 - Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=69584481

Migrating birds in Larnaca Salt Lake - Cyprus

Why does it matter?

Birds – but also animals in general - have been part of our everyday environment, our history and our culture for thousands of years adding colour and sound wherever we are. Changes in bird populations reflect changes in our

environment often indicating that there is something wrong and that we need to take action. Loss of birds is a threat to other species, nature and ultimately to humankind. Every living organism, including birds, is part of a food chain so every piece of this chain is important in order to keep the ecosystem balance. A disturbance to the balance could have an effect on humans. Some bird species provide practical solutions to problems, such as controlling insect and rodent populations. Others disperse seeds, helping to revegetate habitats and allowing the survival of many species. Other bird species act as pollinators, ensuring the survival of many flowering plants, trees and shrubs. The term for the many ways birds (and other animals, plants and landscapes) support and improve human life is “ecosystem services”. A healthy and diverse ecosystem means a healthy world for us now and for generations to come.

The Netherland´s teaching modules

The Netherlands is a country located in North-western Europe. 'Netherlands' literally means 'lower countries', which refers to its low land and flat geography. Only about 50% of The Netherlands exceeds 1 metre above sea level! Most of the areas that are below sea level are the result of land reclamation resulting in large areas known as polders that amount to nearly 17% of the country's territory. With a population of 17.25 million living in an area of roughly 41,500 square kilometres, the Netherlands is one of the most densely populated countries in the world. Nevertheless, it is the world's second-largest exporter of food and agricultural products after the United States, owing to its fertile soil, mild climate, and intensive agriculture.

Dutch meadows and their community of species

The wet, green and open land turned out to be very good for dairy farming. The vast open spaces also attracted a group of bird species we call meadow birds. The meadow birds feel very much at home in vast open areas without trees or other vertical landmarks. They use the areas to breed in and to raise their chicks till they are independent.
However, over the past decades the meadows have changed a lot. Due to the intensification of agriculture the wet and herb-rich meadows changed into dry rye-grass monocultures.
Intensification, because: 1) Dairy farmers like to sow their meadows with rye grass as this is a protein rich grass, that results in protein rich milk that the cow produce. 2) intensification of mowing, that do not coincide with the breeding season of the meadow birds. As a result, the community of the species that rely on the meadows has changed a lot. The numbers of meadow birds have declined dramatically. For some species, 70% of the world population is breeding in the Netherlands, we need to take action to stop the decline in numbers and make the birds feel home again in the meadows.

Involvement of the pupils

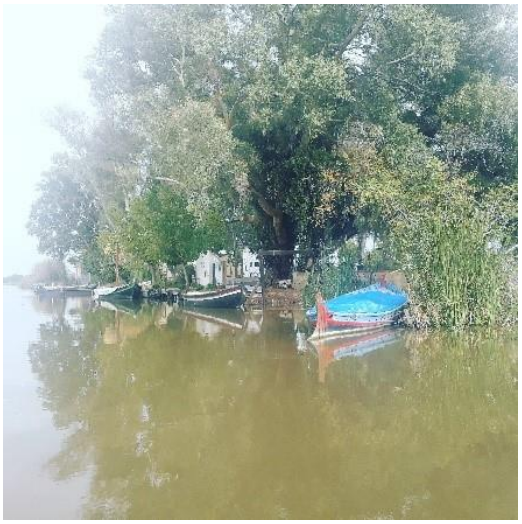
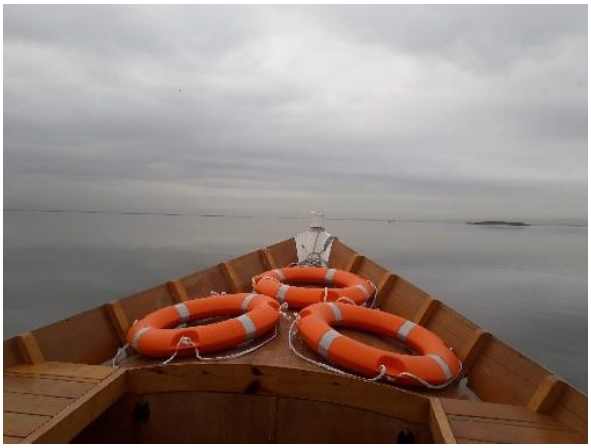
Taken the regional topic of the decline in population of meadow birds in relation to agricultural land use, the Dutch module will focus on food web structure and their stability against disturbance by human impact. During the module, pupils will interview a number of stakeholders that play a role in the meadows, such as nature conservationists, farmers and local politicians. Each group of 3 to 4 pupils is going to interview two different stakeholders to learn about their work and their stand view. Pupils get a picture of the different viewpoints/interests – economical, ecological and social – of all the different stakeholders that play a role in the management of biodiversity in the meadows. Additionally, pupils are going into the field themselves. They are going to measure the number of plants, insects, bird and mammal species that are present in meadows with different agricultural management and build together the food web structure for the different areas. As final product of the modules, pupils are going to present the results of their study to their parents and local stakeholders.



Spain's teaching modules

Spain is the largest country in Southern Europe located on the Iberian Peninsula. The fauna and vegetation are rich and diverse. This is largely due to the geographical position of the Iberian Peninsula between the Atlantic and the Mediterranean and between Africa and Eurasia. But also, the diversity in relief, climate and latitude is of influence on the diversity of fauna and vegetation. Only 10 kilometres from València you will find the Albufera Natural Park, a Mediterranean ecosystem with unspoiled dune beaches, forests, rice fields. The park is home to the largest lake in Spain and one of the most important wetland areas in the Iberian Peninsula. It is a place of great ecological interest with rare species of wading birds and a rich variety of wildlife. Its waters have been traditionally worked by fishermen and rice growers

Based on the issue of water management and circular management around the Albufera lake, the Spain's online teaching modules are developed around the central question: What is the effect of water management on biodiversity (fauna and flora) due to human activities (agriculture, leisure, hunting). During the module, pupils will focus on important issues such as: How does the biodiversity structure look like in wetlands with either natural or humanized management? What type of innovation occurs in water management? The module is developed in such a way that pupils will discover that in countries like Spain and Cyprus the lack of water is the most important issue to deal with, while in the Netherlands the opposite - surplus of water - is the most important issue to deal with.

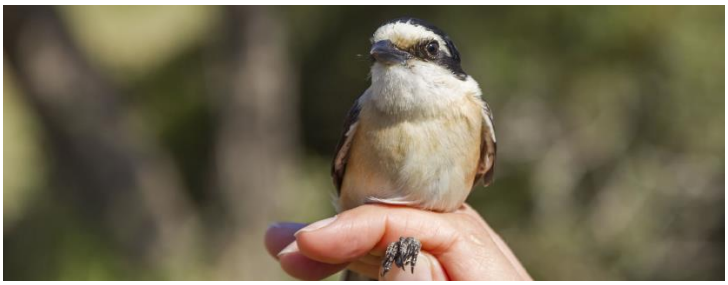



Cyprus' teaching modules

Cyprus is the **third largest island** in the Mediterranean covering an area of 9250 km^2 and lies on one of the major bird migration routes across the Mediterranean. With Africa to the south, Turkey and central Europe to the north and Syria and the Middle East to the east, Cyprus is a major staging post used twice a year as birds move between Africa, Europe and Eurasia, with over 200 species occurring as regular passage migrants in varying numbers.

Greater Flamingos: Some of the flamingoes first head to the Akrotiri Lake (also known as the Limassol Salt Lake) in November–December and wait until the water level of Larnaca Lake increases sufficiently.

The birds that occur regularly on passage form a large percentage of the Cyprus 'list' that totals around 400 species. Of these, only around 60 species are resident and around 30 are migrant breeders who regularly or occasionally breed.



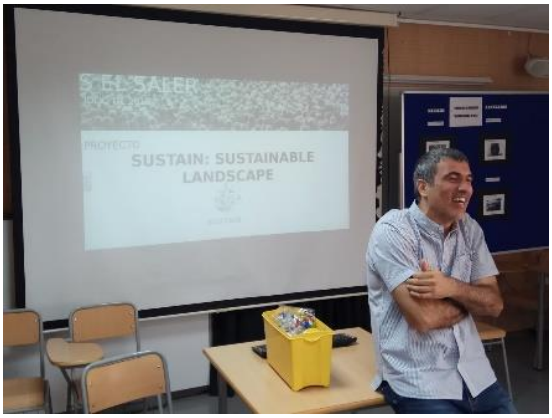
It is time to crack down on Mediterranean's biggest songbird massacre

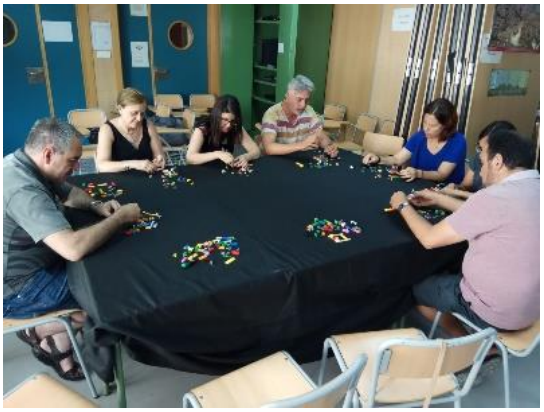
Cyprus' learning modules will focus on migrating birds that pass from Cyprus on their way to hotter climates and the illegal trapping of birds on Cyprus is taking place on an industrial scale. The biggest hotspot is on a British army base in Cyprus where over 800,000 birds were killed last year. Trappers also change the environment by planting invasive species (Acacia bushes) in which the birds are trapped in order to later on sell them as delicacies or through away the rest. Trapping with mist nets and lime sticks is illegal both at national and European level due to the non-selective nature of these methods i.e. it is not possible to select which bird species gets caught. According to field surveys nearly half of the bird species recorded in Cyprus, i.e. 155 different bird species, have been found trapped on lime sticks or in nets.

The Cyprus' learning module focusses on bird migration and what dangers birds encounter on their travel to and from their wintering area to their breeding areas. Pupils learn about the consequences of these dangers for the bird populations.

A different toolbox!

When working on the **citizen science projects** on sustainable landscapes, pupils will increase their knowledge and skills on how to do research and present the result of their projects. To be able to support the pupils in their development, the SUSTAIN project will provide a toolbox with information such as: on how to set up an interview, how to design and perform an experiment in the field and how to present the data to a broad audience, to name just a few examples. This toolbox will support the pupils, as well as their teachers with specific information on the skills they want to develop. In addition, the SUSTAIN supports teachers by providing them with **innovative teaching skills** that help creative thinking. These include: Breamstorming, Teamstorning, WOW technique, LEGO® SERIOUS PLAY ® just to name a few!



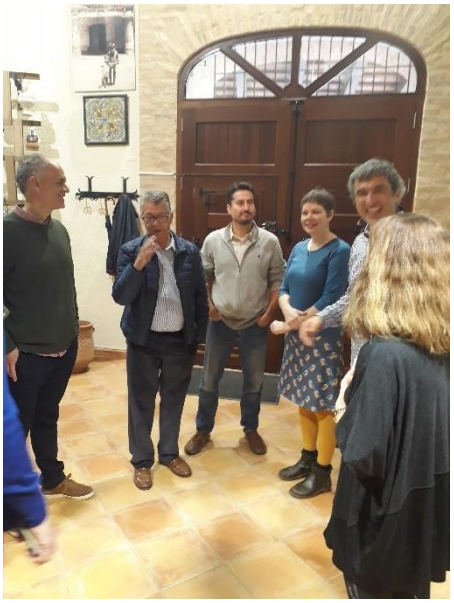


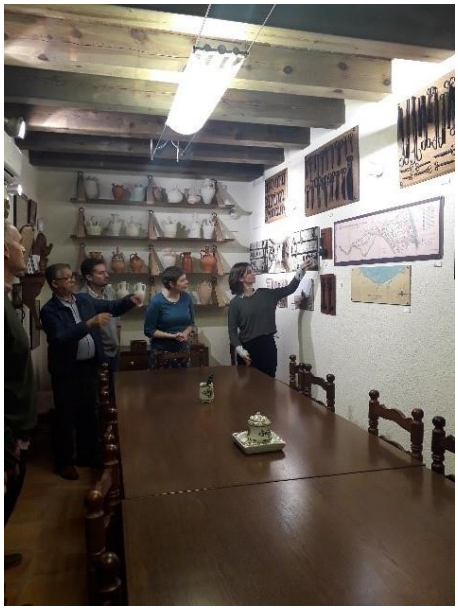
Project meeting in Valencia: time to play, reflect and visit the Albufera lake.

Our project partners held a fruitful meeting in Valencia, Spain, last November 12-13. Hosted by the Politechnical University of Valencia, our team gathered to fulfil the ambitious agenda, that included a workshop and a field trip. This is the second meeting to discuss the progress of the SUSTAIN project.

The SUSTAIN had their meeting in Agromuseu de Vera, a beautiful venue and museum. It is located in the old mill of Vera Channel, built in the XV century and belonging to the ancient irrigation system of La Vega de Valencia, which was built by the Moorish in the XI century and still manages the irrigation water around the city of Valencia. The mill was restored in 2006 by the Valencian Government and was transferred to the Universitat Politècnica de València for its management during the next 50 years. The museum hosts a unique library with very valuable agricultural books and a permanent exhibition of traditional agricultural tools. This ethnographic museum is also used for meetings and workshops.

The meeting began with a presentation of the three learning modules on sustainable landscapes that are in development by the Dutch, Spanish and Cypriote team: the program of the modules, the contents and the exchangeability of them, between the countries. Next, we exchanged ideas about the toolkit that will be developed for both the secondary school pupils and the teachers and discussed the contents given of the three modules on sustainable landscapes. At the end of the day, the Dutch, Spanish and Cypriote team pitched the network of stakeholders that are or will be involved in the SUSTAIN project and we discussed afterwards how we want to involve them in the project. It was a day of lively discussions and good to learn from each other about the differences between countries concerning education, local nature conservation and policies, that are of value to the SUSTAIN project.





During the second day, the SUSTAIN team visited the Albufera lake. The lake lies approx. 12 km south of the city Valencia, the third greatest Spanish city with approx. 700,000 inhabitants. The shallow lake is separated by a sand barrier from the Mediterranean Sea. The fresh water lake covers a surface of 27 sq. km. Six small islands are lying in the Albufera Lake. Our SUSTAIN team visited this area to get more insight in the issues that play a role in the management of the area

The Albufera is one of the most important wetlands in the Iberian Peninsula. In 1986, an area around the lake with a size of 211 sq. km was declared a Natural Park- Parque Natural de l´Albufera de Valencia- by the regional authority. And in December 1989, Albufera Lake and its surrounding wetlands were nominated as Ramsar site. Furthermore, the area was declared as a bird protection area, because till 250 different bird species have been living here.

The great diversity of natural habitats makes the Albufera Natural Park a very attractive space for a large number of plants, fish, invertebrates and birds. Waterfowl are, without a doubt, the most numerous and outstanding group of species in this area throughout the year, and that justifies that l'Albufera is included in the List of Wetlands of International Importance according to the criteria of the Ramsar Convention. Throughout the nesting period, l'Albufera receives a high number of birds, the most numerous being different species of gulls and terns, waders and herons, totaling over 7,000 breeding pairs. During the winter this space also receives a large number of birds – above 20,000!- and especially ***Anatidae***, the scientific name for the biological family of birds that includes ducks, swans and geese, as well as herons, waders and seagulls. The SUSTAIN team had the chance to experience the wonders of the lake, spotting a big number of birds along the way with rarities like the purple swamp-hen and booted eagle!

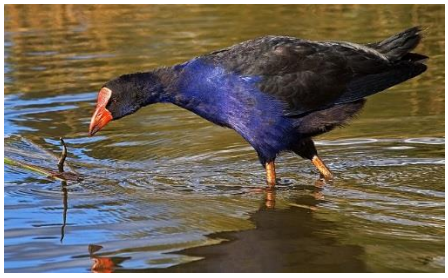
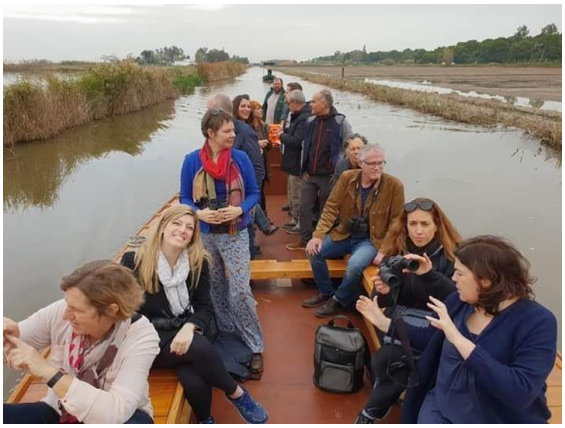
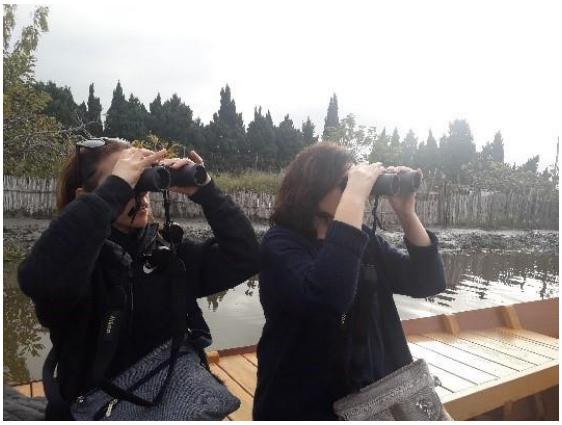


Photo: Richard Taylor *

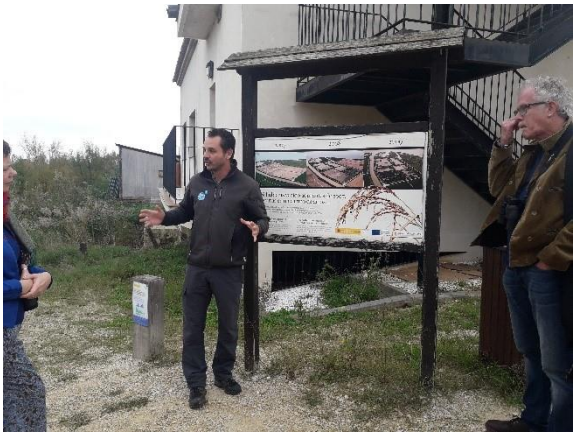
Photo: Juan Lacruz**





Other important ecosystems with a high ecological value that we can find in the surroundings of the lake are the beach, the dunes, the "malladas" (temporary small lagoons between the fringes of dunes), the wetland and the Mediterranean forest.

A highlight was the educational tour during which we were informed on the actions of Tancat de la Pipa by one of their ecologists. Tancat de la Pipa is a Nature Reserve within the Albufera de Valencia Natural Park, located on the north shore of the lake and is the result of a process of ecological restoration carried out in 2007 by the Jucar Hydrographic Confederation. Forty hectares of rice fields were transformed into a freshwater wetland habitant that now functions as a biodiversity reserve thanks to the continual process of water improvement that takes place in its green filters and lagoons.

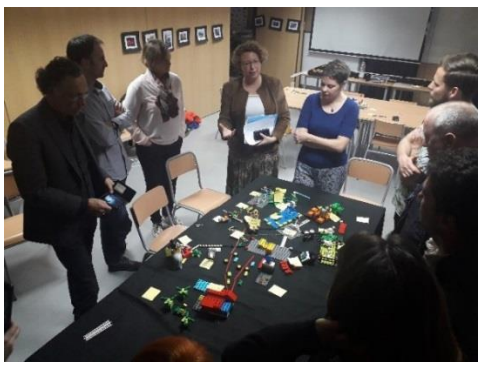


The reserve is open to the public and to educational organizations. The SUSTAIN group had a brilliant guided tour in which we were introduced to how the vegetation that is grows in the green filters improved the quality of the water, and how the fauna that thrives the benefits from this. The existence of Tancat de la Pipa is possible because of the collaboration of various organisations such as Accio Ecologista-Agro and SEO/BirdLife that monitor its wildlife, vegetation and biodiversity as well as carrying out extensive work in the areas of environmental education and awareness via tours and citizen science projects with local schools in which pupils are involved in the monitoring of invertebrates and other wildlife.

Training session

After the fantastic visit at Albufera, the SUSTAIN group had a training session about "LEGO® SERIOUS PLAY ®", a facilitation methodology created by The Lego Group with the goal of fostering creative thinking. After some warming-up exercises, we used the Lego to visualise the different stakeholders in the SUSTAIN project. Each member of the team then visualise the connections between stakeholders and the tools we need to address that specific stakeholder to get them involved in the SUSTAIN project. The LEGO® SERIOUS PLAY ® Play turned out to be a very inspiring and fruitful way to discuss the theme. At the end, we had a list of dissemination tools we need to develop to address our stakeholders.

This winter and spring, secondary school pupils and teachers in each of the three countries will run and test the three learning modules on sustainable landscapes. They will also use the toolbox. After this first run, we will evaluate the three modules and the two toolkits and improve them where needed.



This Newsletter was coordinated by Myrtani Pieri, University of Cyprus and Andrea Troncoso, EUSEA, with contributions from Maaike de Heij, University of Groningen and Guillermo Palau, Unversität Politécnica de Valencia. Thanks to all!

All pictures were taken by Consortium members. When not, it is clearly mentioned.

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SUSTAIN- Sustainable Landscapes

European school pupils engaged in citizen science projects on bird migration and water management

SUSTAIN

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