

EUKI-project Humus per la Biosfera Q3 2021: Young international volunteers meet in Sicily to contribute to climate action



The EUKI project “Humus per la Biosfera”, implemented by Manfred-Hermesen-Stiftung (MHS) and Giacche Verdi Bronte (GV) focuses on carbon sequestration in agriculture, accompanied by scientific research, municipality composting and environmental education for school children. The two-year project started in August with the arrival of European volunteers and students, who are going to join the different activities and transfer the lessons learned into their home countries. Today GV hosts 11 young people from Germany, Holland, Polonia, Spain and Colombia.



Volunteers learn about the local agriculture from Prof. Paolo Guarnaccia (Uni Catania) and Giuseppe Rizzo (Sicilian Agri. Department) / first photo, second and fourth from left; participation in harvesting Bronte’s speciality: Pistachios.



Traditional hand sowing of a mixture of local seed like vetch, sulla, barley, black and white oats for the first field experiment gets fulfilled by GV’s president Gino Montagno (centre photo) together with the volunteers.



Left: One of the weekly Italian lessons with Selin Poti (second from right) /Right: First scientific study gets discussed with the Dutch bachelor student Pippelijn Wijnen, Prof. Guarnaccia, GV and MHS staff



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EUKI-Project “Humus per la Biosfera” Q4 2021– Knowledge gain and idea exchange

Aiming on humus growth and carbon sequestration in Sicily’s agriculture, the project starts with diverse communication and formation events, organizing and discussing ideas and activities for the next two years.



08.10.2021 Agriculture High School Bronte: The Conference “Soil quality and climate change” discusses sustainability topics of the project. 100 participants. Speakers: Senator P. Firrarello (Mayor of Bronte), Prof. G. Emmanuele (school director), Prof. P. Guarnaccia (Uni Catania), S. Hermsen (MHS), A. Aidala (GV) – from left to right on the first photo. Open discussion with pupils and teachers (also from similar schools nearby). The school becomes our project partner.

11.11.21 Natural history course during the Etna climb with Antonio Fresca. Photo at the left: The lava from the 2002 eruption on the northern slope of Etna destroyed some mountain huts on its fast way down the valley and stopped at this point, 8 km before reaching Linguaglossa.



14.11.21 Experience exchange on outdoor environmental education methods between multipliers of the Alpine Club Sicily and GV staff and volunteers. The training of 60 participants took place along the bee trail on GV’s education area “Bosco Brignolo”, in 2018 enriched by contributions through the former EUKI project “Boschi per la Biosfera”.



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EUKI-Project “Humus per la Biosfera” Q4 2021 – Syntropic Agriculture is in planning

Agroforestry is an interesting approach to soil protection and shall be explored for its practicality in local crops.



Determination of suitable plots of land in Bronte for experimenting with Ernst Götsch’s method “Syntropic Agriculture”, established mainly in Latin America.

Picture left: Alessandro Rigano (Uni Catania, scientific assistant within the project), Jonathan Scharf (German student, intending Master's thesis on the topic), Gino Montagno (GV president), Dott. Salvatore Vinciguerra (GV staff, forest expert).



Syntropically planted areas are forest gardens that combine agriculture with forestry.

They have a particularly high potential of carbon sequestration, as permanent pruning creates organic compostable matter that is incorporated into the soil, and below ground, after pruning, redundant roots die and naturally store organic material there. Soils basically remain covered and, in the best case, rooted. This soil protection prevents erosion, keeps moisture in the soil, invigorates soil activity, continuously returns nutrients to the soil, suppresses weeds, improves soil structure and water absorption capacity. (PPP slide J. Scharf)



14.12.21 *Formation on syntropic agriculture for GV-volunteers and 25 students of the Agriculture High School through a PowerPointPresentation by the master student Jonathan Scharf and the GV research assistant Alessandro Rigano. The agroforestry method “Syntropic Agriculture” shall become one of our model field experiments, accompanied by a scientific study with the involvement of pupils from the Agriculture High School in Bronte. Parallel to this, the Agriculture High School in Paternò, will study an already syntropic working farm and share their experience with Bronte’s pupils.*

When planning a dense planting or interplanting between existing crops, one also has to consider the space for harvesting. Photo: The two volunteers Klara Bruns and Ruby Quarten help with the harvest of olives, they empty the net with the previously combed off olives.



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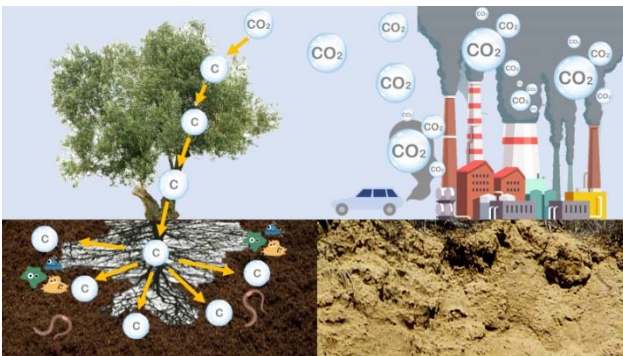


EUKI-Project “Humus per la Biosfera” Q4 2021 – Environmental education

The project starts with its most important activity: Inspiring children for nature and climate protection through composting. The environmental education is divided into two units per school class, a theoretical one in the classroom, which we now do in winter, and a later, practical one in the schoolyard on compost building.



From 10.11.2021 to 23.11.2021 lessons and small soil experiments were fulfilled in Bronte’s elementary schools “Circolo didattico-Plessi Marconi”, “Mazzini”, “Sciarotta” and the middle school “L.Castiglione”. 450 school children involved. (Monday 20.12.2021 there will be lessons with students from Maletto - due to the covid emergency, lessons will be held in distance learning on Zoom - with 90 students). Teachers: GV staff Lidia Marullo (photo above) and Andrea Aidala (left, together with volunteer Ingram Huisman).



Pictures: Two from 37 slides of the PowerPointPresentation, which tells a story about the farmer Pietro’s lessons learned on carbon storage, humus growth, soil fertility and healthy products. This PPP was mainly realized by GV’s trainees and volunteers after a training on the topic.

Small experiments follow directly after the presentation to deepen the children’s knowledge. Three types of soil (lava sand, compacted clay and humus) demonstrate their different water storage capacity. This explains the issues of water availability and erosion risk.

Per lesson only one of our volunteers could join (covid regulations). Photo left: the German volunteer Magdalena Markgraf helps to experiment.



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EUKI-Project “Humus per la Biosfera” Q4 2021 – Soil biodiversity assessment

We are curious to find out, if there is a difference of soil’s life between extensive and intensive treated fields.



From 25.11.21 the biodiversity study takes place at GV's recently bought (traditional) organic cultivated olive and pistachio field and the intensively used almond and pistachio field directly bordering.

Photos from left to right: Trainees Teresa Freundorfer (Germany), Monika Szafranec (Poland), Aurora Martin Gonzalez (Spain) and Gersey Vargas (Colombia) place insect traps and control them regularly.



Below: study area in Bronte



Green – organic study field
Orange – intensive study field



The study is not ready yet, but differences in the quantity of soil fauna is already noticed. Photo below: Aurora, Monika and Gersey.



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EUKI-Project “Humus per la Biosfera” Q4 2021 – Volunteer’s activities

The project participating volunteers try a more sustainable lifestyle, plant and experiment....



Composting and growing their own vegetables are of course part of the volunteers' daily routine.



Student Julia Kleinlein explores the practicability of Terra Preta in smallholder agriculture, so that the tree cuttings can serve as a CO2 and water reservoir in the soil when charred. Pictured here with Enrico Roets (South Africa), Ingram Huisman and Jonathan Scharf (Germany) during an experiment on plant carbonisation. At the end, feel, smell and taste test - good result!



A tree nursery for oak trees was established; the young trees will later be given as gifts to guests at baptisms, weddings, etc., thus raising awareness for the project topic of humus and climate protection.



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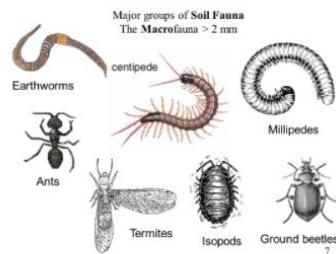


EUKI-Project “Humus per la Biosfera” Q1 2022 – Training on organic humus production and lumbriculture

Organic humus is a valuable ally for soil fertility and counteracts climate change through carbon storage

04.02.2022 - Lumbriculture training by Biotica Maletto

Giacche Verdi (GV) organised a training day for it’s staff, volunteers and trainees at "Biotica", an organic lombriculture farm in Maletto. The company owners Luca Tirendi (second from left in the photo) and Salvatore Caserta explained that this type of humus, which was made from manure and "Eisenia Fetida" earthworms, contains not only the main nutrients that plants need, namely nitrogen, potassium and phosphorus, but also many micronutrients such as calcium and manganese. In addition, earthworm humus, which contains large amounts of humic acid, also improves the condition of the soil.



The addition of organic humus, in order to revitalise the soil, results in a significant increase in the amount of organic matter, which in turn affects the physical properties of the soil: It improves the structure of the soil, facilitates the presence of beneficial aggregates through the formation of "bridge" bonds with the mineral components: this allows better aeration and infiltration of water; it also significantly increases the fertility of the soil, increasing the activity of microflora and microfauna.



ESC-volunteer Ingram Huisman and trainee Monika Szafraniec collect manure from GV’s donkeys and horses for the creation of their own compost.



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EUKI-Project “Humus per la Biosfera” – Q1 2022 Creation of composters and bird houses

In preparation of the second educational activity in schools, composters and bird houses are built



Under the supervision of GV staff Ricardo Sampieri volunteers Laura Serra, Ingram Huisman, Magdalena Markgraf und Ruby Quarten build composters for a total of 10 schools. At school the composters get filled by children with compost starting organic material. It is foreseen, that the fresh waste will be thrown in the box, which after the first mature process will be shovelled on a heap beside it, before being used as humus for the school gardens.



*Volunteer Kerem Yasar from Turkey (left) and student Esperanza Smith from Chile build bird houses under the advice of Daniele Schiliró. Each school will get one of them.
Above: Proud volunteers Ruby and Magda.*



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EUKI-Project “Humus per la Biosfera” Q2 2022 - Environmental education in the schoolyards
 The second didactic phase are outdoor activities for the former indoor educated school children



The composters get installed, explained and filled.

For those schools, which still don't have a garden, a vegetable bed gets created with the children. (At the left and right, GV staff Antonio Fresca).



The activities incorporate also themes of biodiversity, both below and above ground - according to the motto: Humus is the basis of all life. A touch station with earthworms, shown to the children in self made boxes and the birdhouses that are hung in each schoolyard are deepen the knowledge. A special fruit celebration day was organised by the school of Adrano, where GV repeated a lesson from the former EUKI project “Frutti per la Biosfera”.



EUKI-Project “Humus per la Biosfera” Q2 2022 – Biochar production

First step towards carbon sequestration in the soil and improvement of soil fertility



Until now, GV has shredded its tree cuttings and enriched the organic portion of the soil with the shredded material (photo at the right). However, this is not necessarily a permanent carbon sink. In comparison, plant carbon binds CO₂ in the soil for more than a thousand years. A very common but highly impacting method by local farmers is the tree cut burning directly on the field.



In order to convince farmers, not to burn their tree cuttings, GV experiments with biochar and will public the advantages. Biochar is the solid material obtained from the thermochemical conversion of biomass in an oxygen-limited environment. For the biochar production, Giacche Verdi builds a coal kiln from an old cistern. The charring takes place according to a certain method that leads to a high temperature of the charring process and prevents the formation of toxic gases. The charcoal will then be used as a component of Terra Preta.



Kon-Tiki building above by Gino Montagno and Ricardo Sampieri (GV staff), with the help of volunteers Linda Schnabel (D) and Arda Basaran (TR).

Coal production by Gino Montagno, Ingram Huisman (D), Esperanza Smith (CL), Laura Serra (D) and Kerem Yasar (TR).



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