SUBSED – Project LIFE17 ENV/IT/000347

“Sustainable substrates for agriculture from dredged remediated marine sediments: from ports to pots”

SUBSED Dissemination Material

at Mid-Term Period

Action D.1

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1. Introduction

This report contains all SUBSED dissemination activities concerning the development and distribution of dissemination material from the start of the project (01/10/2018) until the mid-term period of the project (31/03/2020).

In particular:

- Development of project web site and social pages: Flora Toscana developed and registered the website www.lifesubsed.com and implemented the SUBSED FB page. Recently, Flora Toscana has also created a SUBSED Twitter profile;
- Notice board: Flora Toscana created 12 notice boards displayed in the public places of each beneficiary;
- Dissemination material: all the SUBSED beneficiaries produced the project logo, 3000 brochures, 3 roll-up, 2 banners, 1 poster and 2100 various items as project gadgets;
- Publication, articles and press releases: 1 technical publication and 4 articles.

2. SUBSED website and social pages

2.1 Website www.lifesubsed.com

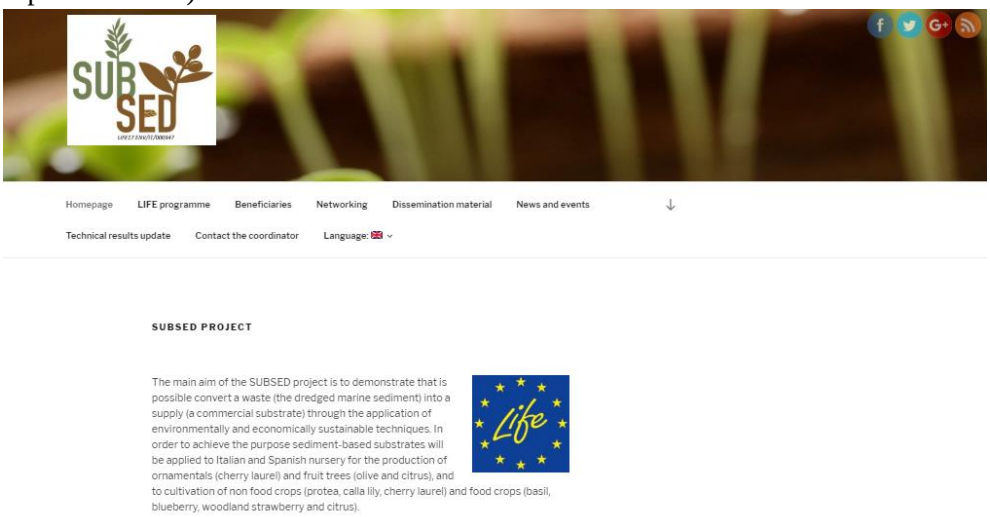
The www.lifesubsed.com website has been published in October 2018. The first following weeks have been necessary for Google indexing and DNS propagation.
Flora Toscana is responsible for the creation and maintenance of this project website and, thanks to the work done collaborating with other beneficiaries, works for its regular updating.

The structure of the site.

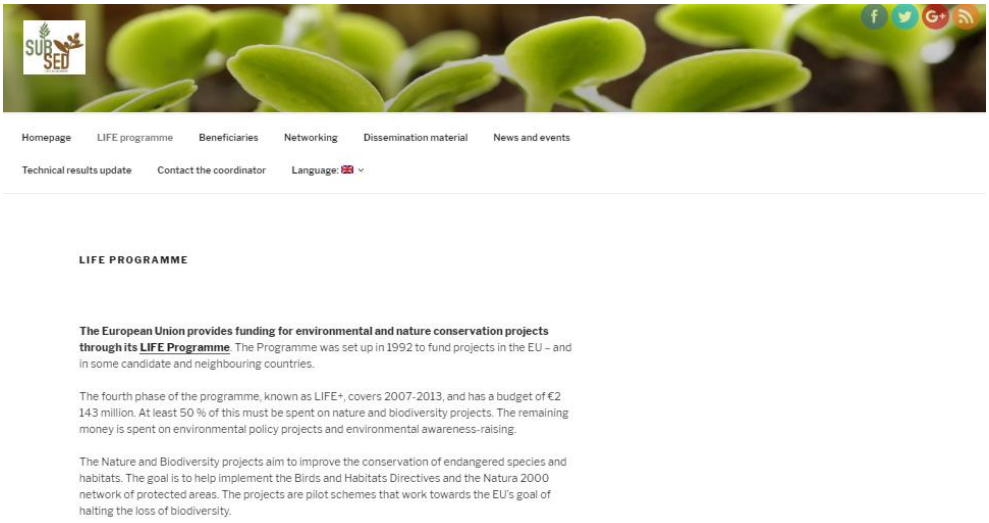
The lifesubsed.com website has been created with a simple and functional interface. The theme used is fully scalable, and the contents can be displayed correctly on both PC and tablet or smartphone. The published contents have been written in English, Italian and Spanish, and a language choice menu is available.

Through the principal menu in the top of each page, links to the 8 main sections of the website can be reached. Each section contains links to events, articles, downloadable material or external pages.

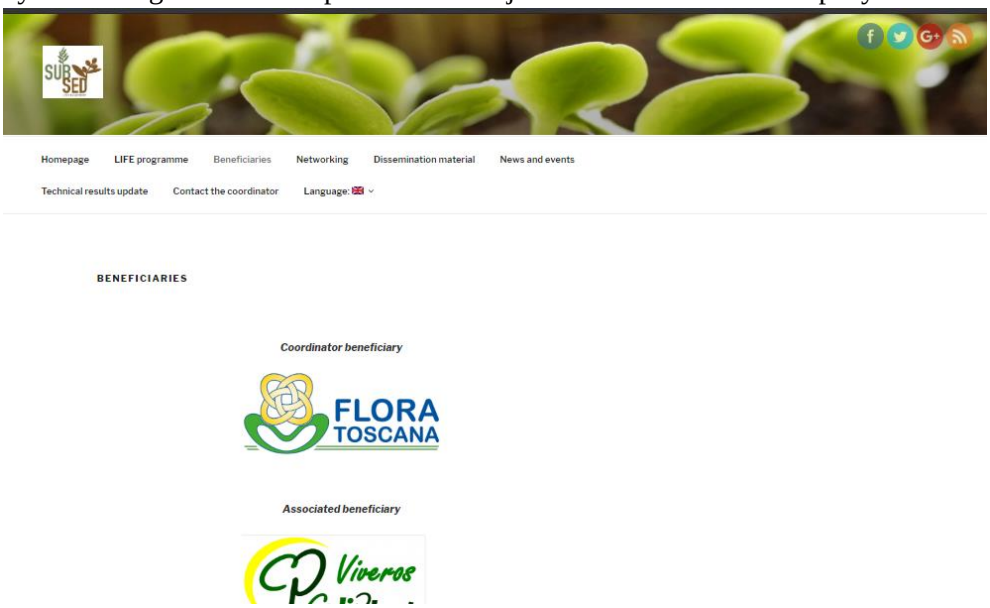
1. **HOMEPAGE** → A summary of the main contents of the project are here available. The LIFE logo has been placed in the foreground, and by clicking on this the user is redirected to the official LIFE programme website. The sections *Objectives*, *Expected results*, *News* and *Contact* can be reached scrolling down (the parallax effect alternates texts with photos of the species that will be cultivated during the planned trials).



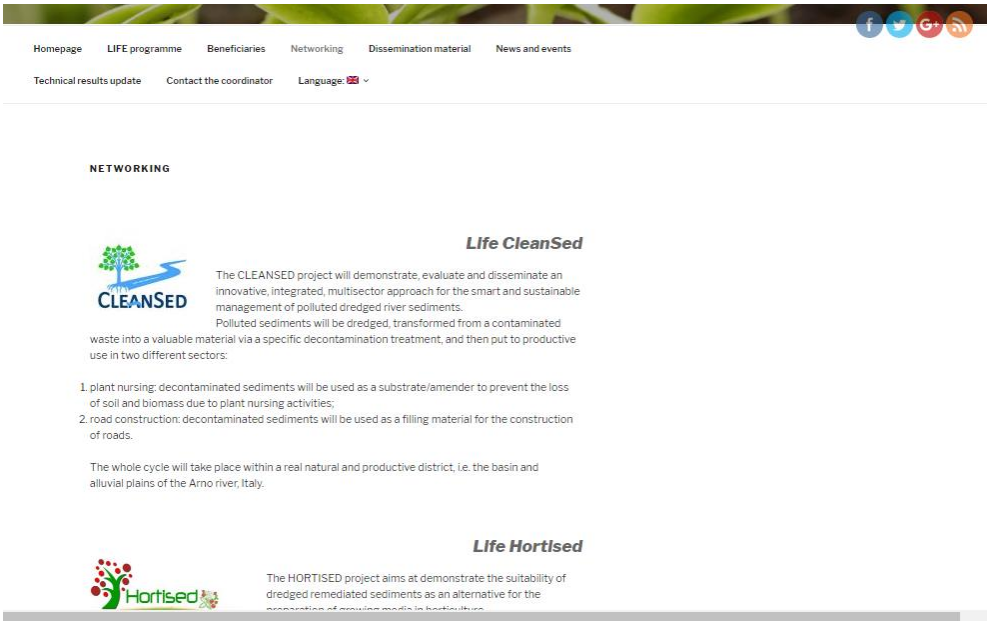
2. **LIFE PROGRAMME** → This page provides main information on the LIFE programme and on its objectives, providing the link to the official website.



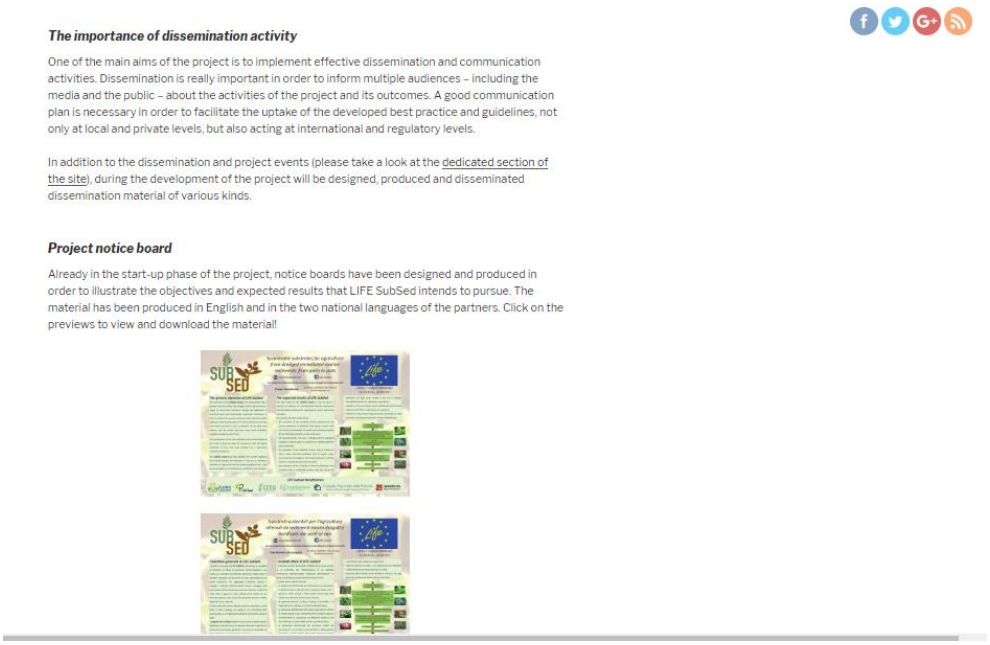
3. **THE BENIFICARIES →** This section the beneficiaries involved in the SUBSED project are listed. By clicking on the logo of each one, the user is redirected to a page dedicated to the individual beneficiary containing a brief description of the subject and the link to its company website.



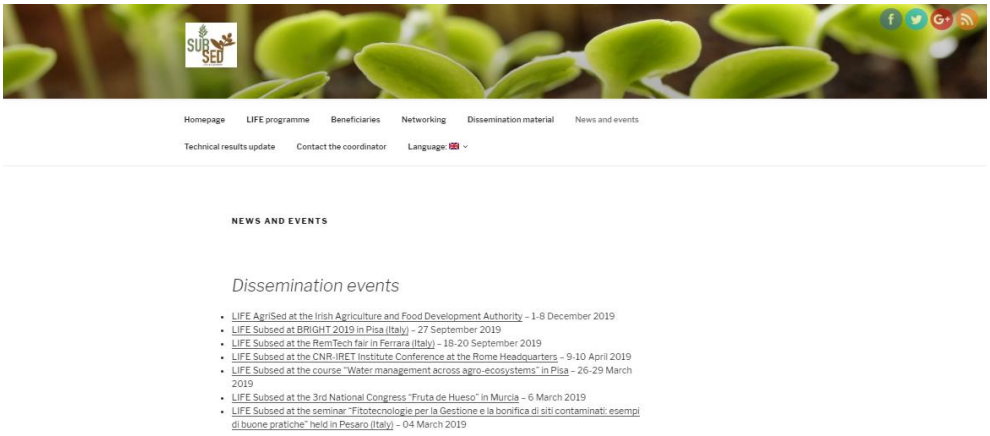
4. **NETWORKING →** This page shows the projects with which SUBSED has started collaboration and information exchange activities. For each project a brief description of its main objectives and the link to its website are provided.



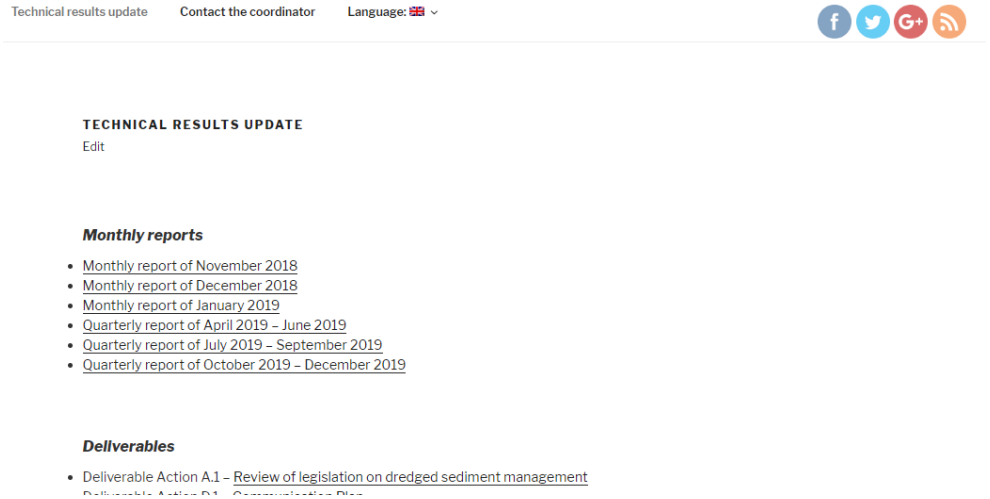
5. **DISSEMINATION MATERIAL** → This section contains the information materials produced during the project (their pdf versions are freely downloadable) and photos of the gadgets produced and distributed.



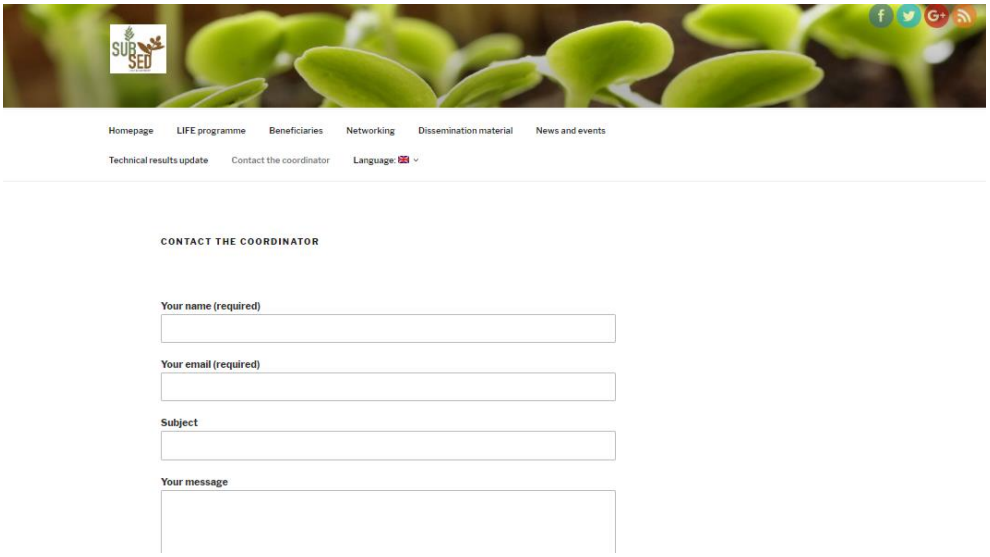
6. **NEWS AND EVENTS** → This section contains the posts relating to dissemination events, project events and articles /press releases. By clicking on each link the user is redirected to the specific post, containing specific photos and textual description of the activity carried out.



7. **TECHNICAL RESULTS UPDATE** → This section contains the periodic reports sent to the monitoring team and the links to the developed deliverables. This section will also contain links to scientific publications relating to the SUBSED project and to posts concerning the "updates from the fields". All pdf contents available in this section are downloadable.



8. **CONTACT THE COORDINATOR** → In this section there is a contact form that allows users to communicate with SUBSED technical responsible, Maria Castellani from Flora Toscana. Her email address has not been published to avoid spam generation.



The website contains also links to the social pages of the LIFE SUBSED project and buttons for immediate sharing of website contents on social media.

Website updating

The coordinator periodically collects updates from the beneficiaries as subject responsible for the website updating. *News and events*, *Technical results update*, *Dissemination material* and *Networking* pages are regularly updated with new visual and textual contents and with links to new informative materials and posts (the other pages can generally be considered "static").
The **posts** published until 12/03/2020 are 25, all written in the 3 project languages. The **media contents** (figures, photos, documents, etc.) uploaded on the site until 12/03/2020 are 260.

Website insights

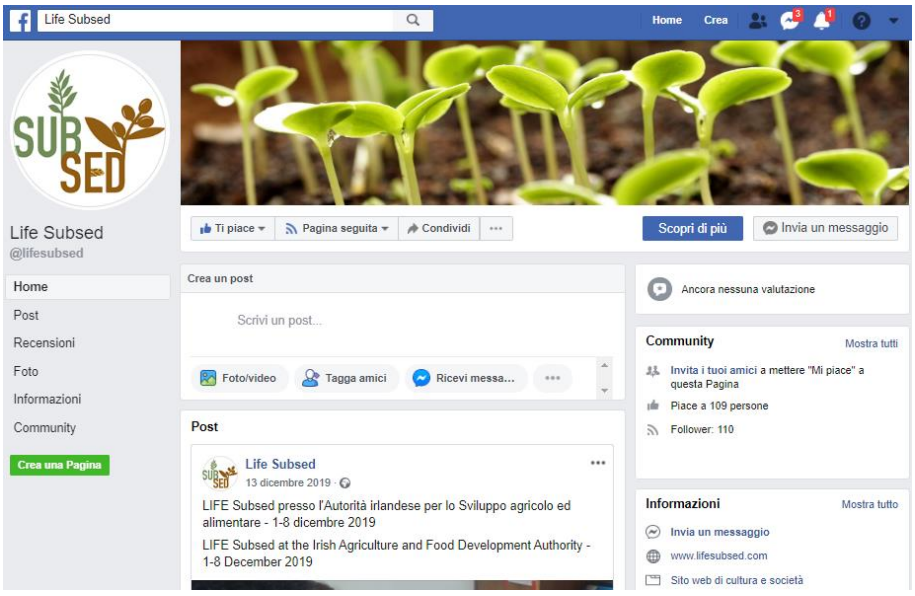
Site performance is monitored both through Google Analytics and through CMS plugins. On the homepage there is also a counter, which measures the number of times that website pages have been loaded. At 12/03/2020 the counter reached 77,324.

The associated Google Analytics profile reports for the period from 1/10/2018 to 12/03/2020 the following main indicators:

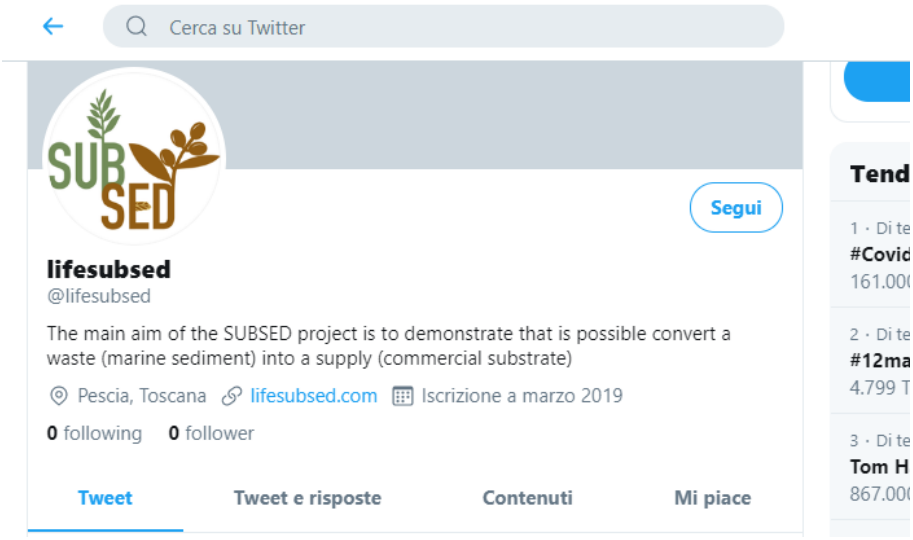
- n. of users → 986;
- n. of new users → 993;
- n. of sessions → 1,333;
- 11.4 % new visitor vs 88.6 % returning visitor

2.2 LIFE SUBSED social profiles

The LIFE SUBSED Facebook page has been created during the first month of the project. Periodically, graphic and textual content and links to the posts published on lifesubsed.com are posted on the page. Currently the page has 109 likes.



The LIFE SUBSED Twitter profile is planned to be launched as soon as the main activities will start. A static profile has been already created.



3. SUBSED Notice Boards

During the mid-term period of the SUBSED project, Flora Toscana developed the project Notice Boards and produced 12 copies of this:

- 6 pieces for the English version;
- 1 piece for the Spanish version;
- 5 pieces for the Italian version.

The Notice Boards have been sent to all partners, that display them in visible spots and public accessible places of their premises.

3.1Flora Toscana Notice Board

Notice board displayed at the entrance of the Flora Toscana premise in Via Caravaggio, 21

Notice board displayed at the entrance of the Flora Toscana premise in Via Montecarlo, 81

3.2 Cali Plant Notice Board

Notice board displayed in the corridor of the CaliPlant premise

3.3 CREA Notice Board

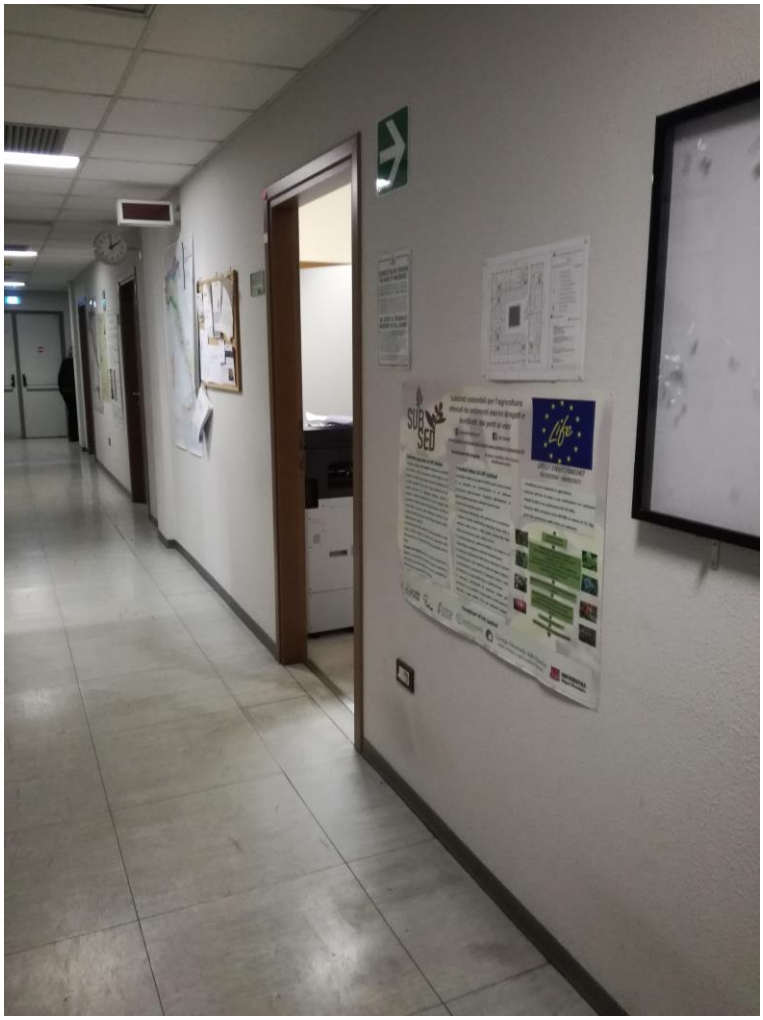
Notice board displayed at the entrance of the CREA premise

Notice board displayed in the corridor of the CREA premise

3.4 Carbonsink Notice Board

Notice board displayed in the corridor of the Carbonsink premise

3.5 CNR Notice Board



Notice board displayed in the corridor of the CNR premise

3.6 UMH Notice Board

Notice board displayed at the entrance of the UMH premise

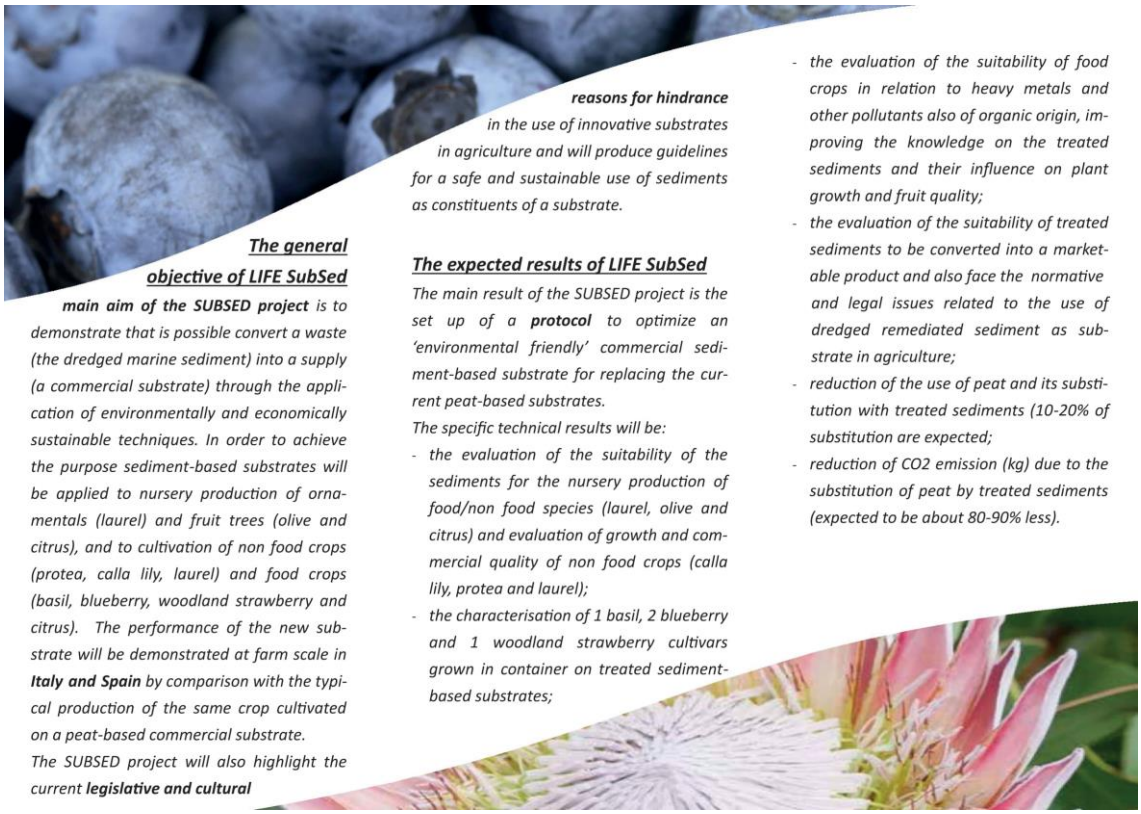
4. SUBSED Dissemination Material

In the following paragraphs the dissemination material produced during the first 18 month of SUBSED is presented.

4.1 Brochures

The production of informative brochures is planned in the project communication plan. This general brochure, which will be joined by others during the project, illustrates the objectives and expected results of LIFE SUBSED. The material has been produced in English and in the two national languages of the partners.

English version (here downloadable) → 1000 copies printed and distributed



The general objective of LIFE SubSed

main aim of the SUBSED project *is to demonstrate that is possible convert a waste (the dredged marine sediment) into a supply (a commercial substrate) through the application of environmentally and economically sustainable techniques. In order to achieve the purpose sediment-based substrates will be applied to nursery production of ornamentals (laurel) and fruit trees (olive and citrus), and to cultivation of non food crops (protea, calla lily, laurel) and food crops (basil, blueberry, woodland strawberry and citrus). The performance of the new substrate will be demonstrated at farm scale in* ***Italy and Spain*** *by comparison with the typical production of the same crop cultivated on a peat-based commercial substrate.*

The SUBSED project will also highlight the current ***legislative and cultural reasons for hindrance*** *in the use of innovative substrates in agriculture and will produce guidelines for a safe and sustainable use of sediments as constituents of a substrate.*

The expected results of LIFE SubSed

The main result of the SUBSED project is the set up of a ***protocol*** *to optimize an 'environmental friendly' commercial sediment-based substrate for replacing the current peat-based substrates.*

The specific technical results will be:

- *the evaluation of the suitability of the sediments for the nursery production of food/non food species (laurel, olive and citrus) and evaluation of growth and commercial quality of non food crops (calla lily, protea and laurel);*
- *the characterisation of 1 basil, 2 blueberry and 1 woodland strawberry cultivars grown in container on treated sediment-based substrates;*
- *the evaluation of the suitability of food crops in relation to heavy metals and other pollutants also of organic origin, improving the knowledge on the treated sediments and their influence on plant growth and fruit quality;*
- *the evaluation of the suitability of treated sediments to be converted into a marketable product and also face the normative and legal issues related to the use of dredged remediated sediment as substrate in agriculture;*
- *reduction of the use of peat and its substitution with treated sediments (10-20% of substitution are expected;*
- *reduction of CO2 emission (kg) due to the substitution of peat by treated sediments (expected to be about 80-90% less).*

Italian version (here downloadable) → 1000 copies printed and distributed

L'obiettivo generale di LIFE SubSed

L'**obiettivo principale di LIFE SUBSED** è dimostrare la possibilità di convertire un rifiuto (il sedimento marino dragato) in una risorsa (un substrato commerciale) attraverso l'applicazione di tecniche sostenibili sia dal punto di vista ambientale che da quello economico. Per raggiungere l'obiettivo, durante il progetto i substrati sediment-based saranno impiegati nella produzione vivaistica di piante ornamentali (lauro) e di alberi da frutto (olivo e agrumi) e nella coltivazione di colture sia non alimentari (protea, calla, lauro) che alimentari (basilico, mirtillo, fragola di bosco e agrumi).

Le prestazioni del nuovo substrato saranno comparate su scala reale, **in Italia e Spagna**, con quelle di una coltivazione delle stesse piante su un tradizionale substrato commerciale a base di torba.

Il progetto LIFE SUBSED metterà in luce anche le attuali **barriere legislative e culturali** all'uso di substrati innovativi in agricoltura, producendo anche linee guida per l'uso sicuro e sostenibile dei sedimenti come componente di un substrato.

I risultati attesi di LIFE SubSed

Il principale risultato del progetto SUBSED sarà la messa a punto di un **protocollo** per l'ottimizzazione di un substrato commerciale sediment-based "rispettoso dell'ambiente", in grado di sostituire gli attuali substrati a base di torba.

I risultati tecnici specifici saranno:

- la valutazione dell'idoneità dei sedimenti per la produzione vivaistica di specie alimentari/non alimentari (lauro, olivo e agrumi) e della crescita e della qualità commerciale delle colture non alimentari (calla, protea e lauro);
- la caratterizzazione di 1 cultivar di basilico, 2 di substrati sediment-based;
- la valutazione dell'idoneità delle colture alimentari in termini di metalli pesanti e altri inquinanti anche di origine organica, incrementando la conoscenza sui sedimenti trattati e sulla loro influenza su crescita delle piante e qualità dei frutti;
- la valutazione dell'idoneità dei sedimenti trattati alla conversione in un prodotto commerciabile e delle questioni normative e legali relative all'uso del sedimento dragato e bonificato come substrato in agricoltura;
- riduzione dell'uso di torba e sua sostituzione con sedimenti trattati (è attesa una sostituzione del 10-20%);
- riduzione delle emissioni (circa 80-90% in meno) di CO_2 (kg) grazie alla sostituzione della torba con sedimenti.

Spanish version (here downloadable) → 1000 copies printed and distributed

Objetivos de LIFE SubSed

El **objetivo principal** del proyecto SUBSED es demostrar que es posible convertir un desecho (sedimento marino dragado) en un suministro (sustrato comercial) a través de la aplicación de técnicas ambiental y económicamente sostenibles. Para lograr el propósito, los sustratos basados en sedimentos se aplicarán a la producción de plantas ornamentales (laurel) y árboles frutales (olivos y cítricos), y al cultivo de cultivos no alimentarios (protea, cala, laurel) y cultivos alimentarios (albahaca, arándano, fresas y cítricos).

El rendimiento del nuevo sustrato se demostrará a escala de granja en **Italia y España** en comparación con la producción típica del mismo cultivo cultivado en un sustrato comercial a base de turba.

El rendimiento del nuevo sustrato se demostrará a escala de granja en Italia y España en comparación con la producción típica del mismo cultivo cultivado en un sustrato comercial a base de turba. El proyecto SUBSED también resaltará las **razones legislativas y culturales** actuales para obstaculizar el uso de sustratos innovadores en la agricultura y producirá pautas para un uso seguro y sostenible de los sedimentos como constituyentes de un sustrato.

Resultados previstos de LIFE SubSed

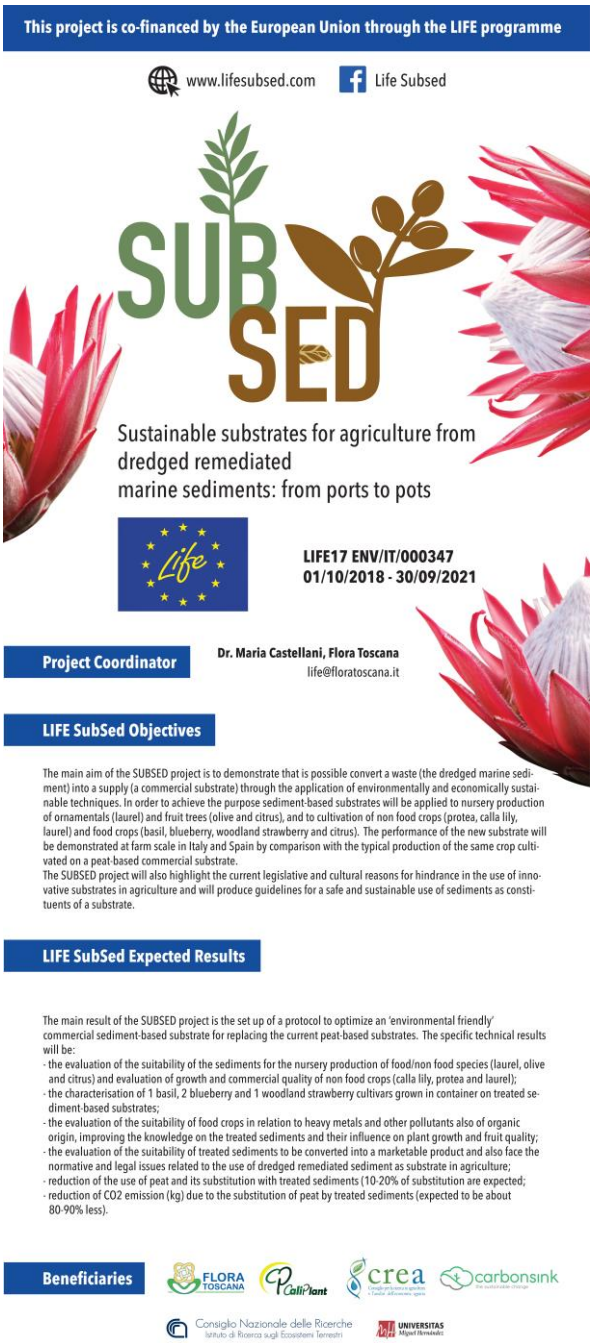
El principal resultado del proyecto SUBSED es la configuración de un **protocolo** para optimizar un sustrato comercial basado en sedimentos "respetuoso con el medio ambiente" para reemplazar los sustratos actuales a base de turba. Los resultados técnicos específicos serán:

- la evaluación de la idoneidad de los sedimentos para la producción de viveros de especies alimentarias/no alimentarias (laurel, oliva y cítricos) y la evaluación del crecimiento y la calidad comercial de los cultivos no alimentarios (cala, protea y laurel);
- la caracterización de 1 cultivo de albahaca, 2 de arándanos y 1 de fresa de bosque cultivados en contenedores sobre sustratos a base de sedimentos tratados;
- la evaluación de la idoneidad de los cultivos alimentarios en relación con los metales pesados y otros contaminantes también de origen orgánico, mejorando el conocimiento sobre los sedimentos tratados y su influencia en el crecimiento de las plantas y la calidad de la fruta;
- la evaluación de la idoneidad de los sedimentos tratados para convertirlos en un producto comercializable y también enfrentar los problemas normativos y legales relacionados con el uso de sedimentos remediados dragados como sustrato;
- reducción del uso de turba y su sustitución con sedimentos tratados (se espera un 10-20% de sustitución);
- reducción de la emisión de CO_2 (kg) debido a la sustitución de turba por sedimentos tratados (se espera que sea aproximadamente 80-90% menos).

4.2 Roll ups

During the start-up phase of the project, 3 version of roll-ups in English, Spanish and Italian have been produced in order to illustrate the SUBSED objectives and expected results.

English version (here downloadable) → 1 copy produced



Italian version (here downloadable) → 1 copy produced

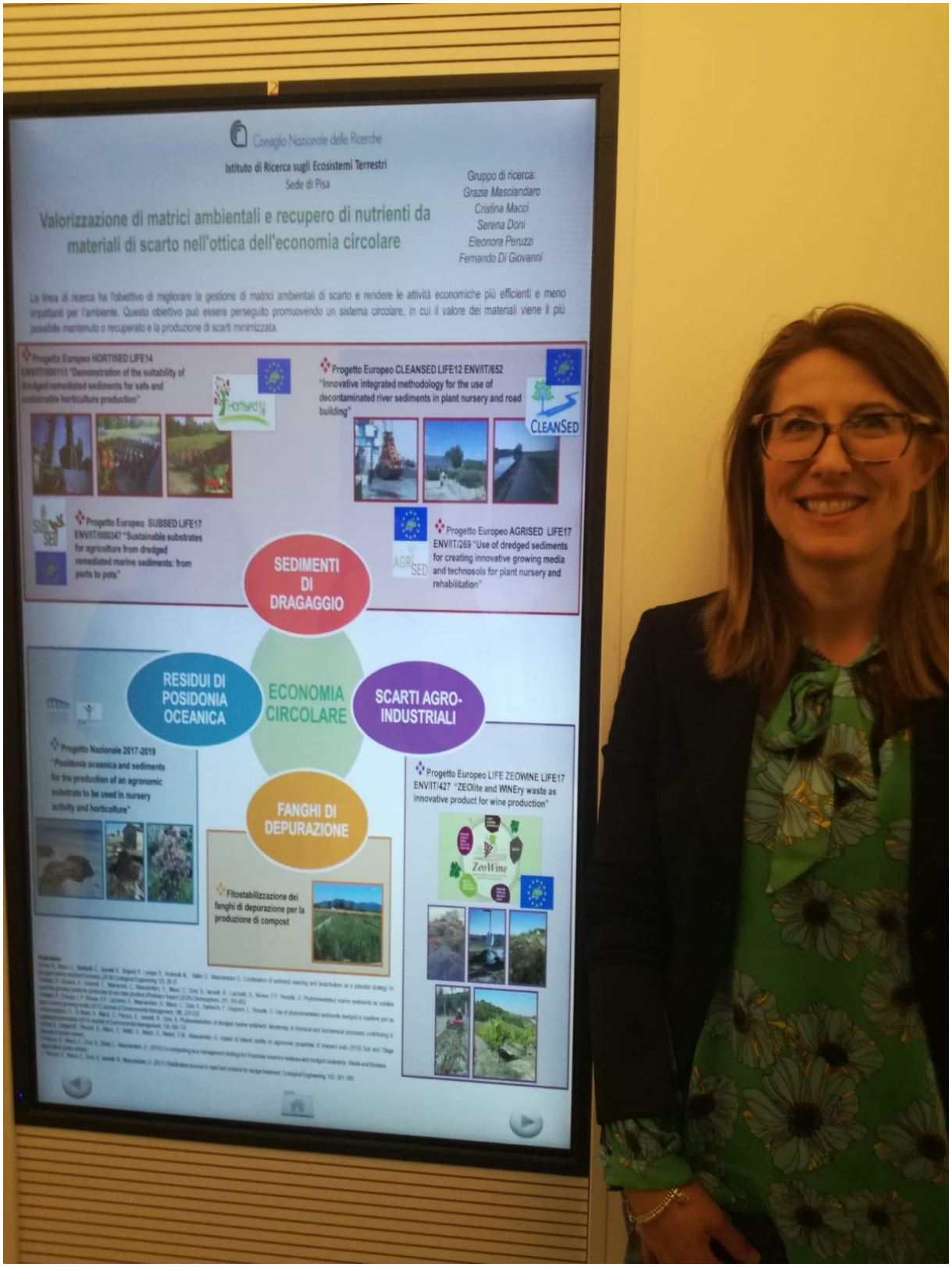
Spanish version (here downloadable) → 1 copy produced

4.3 Banners

During the mid-term period, a SUBSED banner (here downloadable) to be displayed during fairs and events has been designed and produced. 2 copies of this have been produced.

4.4 Posters

During the first 18 months of project, the beneficiaries produced the following poster that involve LIFE SUBSED.



Poster developed by IRET CNR (here downloadable) and exposed during the CNR Institute Conference at the Rome Headquarters

4.5 Gadgets

During the first 18 months of the project the following gadgets have been produced:

- 1000 customized pens;
- 1000 customized post-it blocks;
- 100 customized recyclable shoppers.

All the gadgets have been marked with the SUBSED project logo, the project code (LIFE17 ENV/IT/000347) and the LIFE logo.

The Subsed gadgets produced during the mid-term period

5. SUBSED publications, articles and press releases

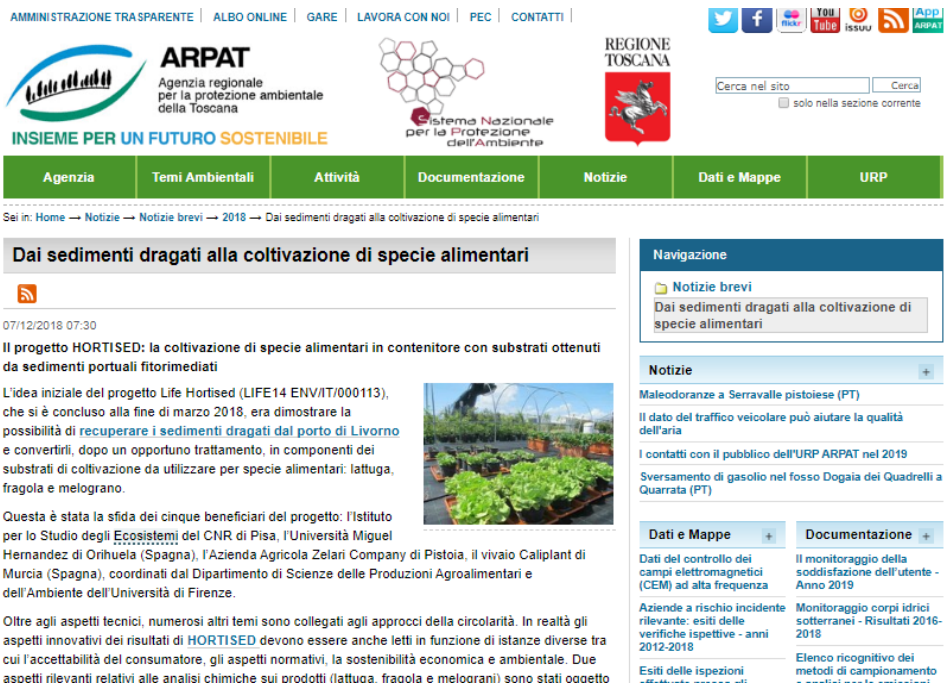
5.1 Publications

- Sustainable substrates for agriculture from dredged remediated marine sediments: the experience of the Life Subsed project – *Serena Doni, Cristina Macci, Eleonora Peruzzi, Grazia Masciandaro*

5.2 Articles and press releases

During the mid-term period, the LIFE SUBSED project has been subject of the following articles:

- Dai sedimenti dragati alla coltivazione di specie alimentari – ARPAT bulletin



AMMINISTRAZIONE TRASPARENTE | ALBO ONLINE | GARE | LAVORA CON NOI | PEC | CONTATTI

ARPAT
Agenzia regionale per la protezione ambientale della Toscana
INSIEME PER UN FUTURO SOSTENIBILE

Sistema Nazionale per la Protezione dell'Ambiente

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Sei in: Home → Notizie → Notizie brevi → 2018 → Dai sedimenti dragati alla coltivazione di specie alimentari

Dai sedimenti dragati alla coltivazione di specie alimentari

07/12/2018 07:30

Il progetto HORTISED: la coltivazione di specie alimentari in contenitore con substrati ottenuti da sedimenti portuali fitorimediati

L'idea iniziale del progetto Life Hortised (LIFE14 ENV/IT/000113), che si è concluso alla fine di marzo 2018, era dimostrare la possibilità di recuperare i sedimenti dragati dal porto di Livorno e convertirli, dopo un opportuno trattamento, in componenti dei substrati di coltivazione da utilizzare per specie alimentari: lattuga, fragola e melograno.

Questa è stata la sfida dei cinque beneficiari del progetto: l'Istituto per lo Studio degli Ecosistemi del CNR di Pisa, l'Università Miguel Hernandez di Orihuela (Spagna), l'Azienda Agricola Zelari Company di Pistoia, il vivaio Caliplant di Murcia (Spagna), coordinati dal Dipartimento di Scienze delle Produzioni Agroalimentari e dell'Ambiente dell'Università di Firenze.

Oltre agli aspetti tecnici, numerosi altri temi sono collegati agli approcci della circolarità. In realtà gli aspetti innovativi dei risultati di HORTISED devono essere anche letti in funzione di istanze diverse tra cui l'accettabilità del consumatore, gli aspetti normativi, la sostenibilità economica e ambientale. Due aspetti rilevanti relativi alle analisi chimiche sui prodotti (lattuga, fragola e melograni) sono stati oggetto

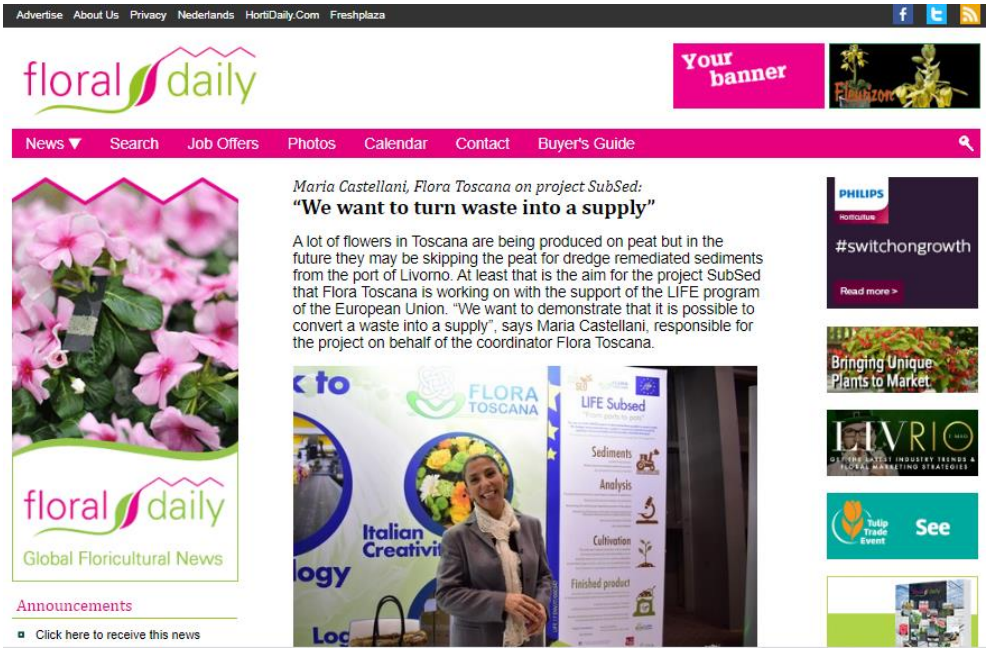
Navigazione
Notizie brevi
Dai sedimenti dragati alla coltivazione di specie alimentari

Notizie
Maleodoranze a Serravalle pistoiese (PT)
Il dato del traffico veicolare può aiutare la qualità dell'aria
I contatti con il pubblico dell'URP ARPAT nel 2019
Sversamento di gasolio nel fosso Dogaia dei Quadrelli a Quarrata (PT)

Dati e Mappe
Dati del controllo dei campi elettromagnetici (CEM) ad alta frequenza
Aziende a rischio incidente rilevante: esiti delle verifiche ispettive - anni 2012-2018
Esiti delle ispezioni

Documentazione
Il monitoraggio della soddisfazione dell'utente - Anno 2019
Monitoraggio corpi idrici sotterranei - Risultati 2016-2018
Elenco ricognitivo dei metodi di campionamento

- [“We want to turn waste into a supply”](#) – Floral Daily



- "Noi giardinieri possiamo fare clima!" – Lineaverde Jan/Feb 2019

'Noi giardinieri possiamo fare clima!' Sostenibilità tema centrale a IPM Essen

Un'ottima edizione quella appena svolta di IPM Essen, la fiera leader mondiale per l'orticoltura, grazie anche ad una congiuntura di mercato positiva in Europa e in Germania in particolare. Tema cardine dell'esposizione, la sostenibilità, in tutte le sue sfaccettature.

di **Renato Ferretti**
renato.ferretti@epnet.it

Dottore agronomo e dirigente della Provincia di Pistoia

IPM Essen 2019 ha visto senz'altro quattro giorni di successo. Dal 22 al 25 gennaio 2019, 1546 espositori provenienti da 48 paesi hanno mostrato i loro nuovi prodotti e innovazioni lungo l'intera catena del valore aggiunto in orticoltura. In totale, circa 53.000 visitatori sono venuti a Messe Essen. Hanno ottenuto informazioni sulle ultime tendenze e beni da ordinare per la prossima stagione. La principale fiera mondiale per l'orticoltura si è concentrata sui temi della sostenibilità e dei cambiamen-

- "Caliplant, un referente en el compromiso con una agricultura sostenibile" – Fruta de Hueso Congress Journal

CALIPLANT, un referente en el compromiso con una agricultura sostenible

Global Agroconsulting, una de las divisiones del grupo Caliplant, presentan en el III Congreso de Fruta de Hueso el Proyecto LIFE SUBSED, el cual está llevando acabo junto a otras empresas o entidades como FLORA TOSCANA (IT), C.R.E.A (IT), CARBONSINK (IT), CONSIGLIO NACIONALE DELLE RICERCHE (IT) y la UNIVERSIDAD MIGUEL HERNÁNDEZ (ES).

El objetivo principal de este proyecto SUBSED es demostrar que es posible convertir los desechos (el sedimento marino dragado) en un recurso (un sustrato comercial) a través de la aplicación de técnicas sostenibles, tanto desde el punto de vista ambiental como económico. Para lograr esto, los sustratos basados en sedimentos se utilizarán en la producción de viveros de plantas ornamentales (laurel) y árboles frutales (olivos y cítricos) y el cultivo de plantas no alimenticias (protea, cala, laurel) y alimentacias (albahaca , arándanos, fresas y cítricos).

El rendimiento de este nuevo sustrato se demostrará a escala de granja en Italia y España en comparación con la producción típica de los mismos cultivos en sustrato comercial tradicional.

Estos estudios tienen entre otros resultados previstos la configuración de un protocolo para la optimización de un sustrato comercial basado en sedimentación marina, respetuoso con el medio ambiente y demostrar su idoneidad para la producción de viveros de especies alimentarias y no alimentarias y la evaluación del crecimiento y la calidad comercial de los cultivos.

Además se pretende controlar la evolución de los cultivos en base a la relación con los materiales pesados y otros contaminantes también de origen orgánico, mejorando el conocimiento sobre los sedimentos tratados y su influencia en el crecimiento de las plantas y la calidad de la fruta.

En 2019, Caliplant ya ha presentado este proyecto en AGROEXPO y FRUIT LOGÍSTICA, cosechando en sendas ferias

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el interés del publico asistente y siendo foco de atención por la importancia de este proyecto con la conservación de los fondos marinos y la importante reducción de la contaminación.

El III Congreso Nacional de Fruta de Hueso servirá como plataforma para la continuación de las labores de promoción de este proyecto, así como otras novedades que Caliplant ofrecerá al público asistente.