

Relatore

**Silvia Cappellozza**



**aracne**

ADVOCATING THE ROLE  
OF SILK ART AND CULTURAL  
HERITAGE AT NATIONAL  
AND EUROPEAN SCALE

I risultati del  
progetto Aracne:  
come sviluppare un  
ecosistema europeo  
della seta

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## ARACNE in breve:

**Ente finanziatore:** Commissione Europea

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**Linea di intervento** “Culture, Creativity and Inclusive Society”

**Call:** Research and innovation on cultural heritage and **Cultural and Creative Industries**

**Finanziamento:** 2 999 634.50 euro

**Durata:** 3 anni



# Scopo generale

- Perché l'Europa tiene alla valorizzazione delle industrie culturali e creative? Perché secondo i dati UNESCO (2022-2023) e i rapporti UNCTAD (Creative Economy Outlook 2024), le industrie culturali e creative generano annualmente circa 2,3 trilioni di dollari di entrate, contribuendo al 3,1% del Prodotto Interno Lordo (PIL) globale e al 6,2% dell'occupazione totale.

# Le industrie culturali e creative

I settori culturali e creativi sono tutti i settori le cui attività si basano su valori culturali o espressioni artistiche e altre espressioni creative, individuali o collettive:

- l'architettura, gli archivi, le biblioteche e i musei, l'artigianato artistico, gli audiovisivi (compresi il cinema, la televisione, i videogiochi e i contenuti multimediali), il patrimonio culturale materiale e immateriale, il design (compreso il design della moda), i festival, la musica, la letteratura, le arti dello spettacolo, i libri e l'editoria, la radio e le arti visive

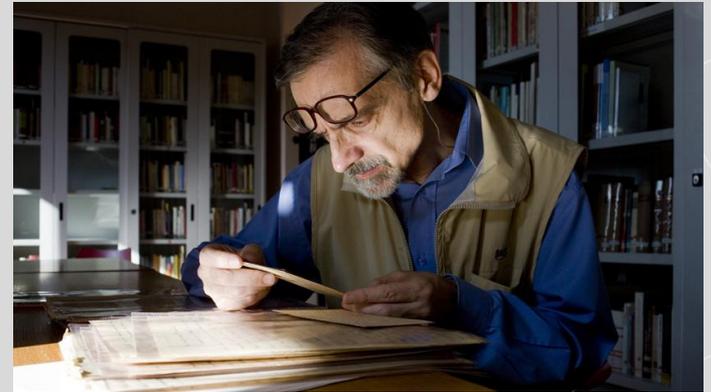
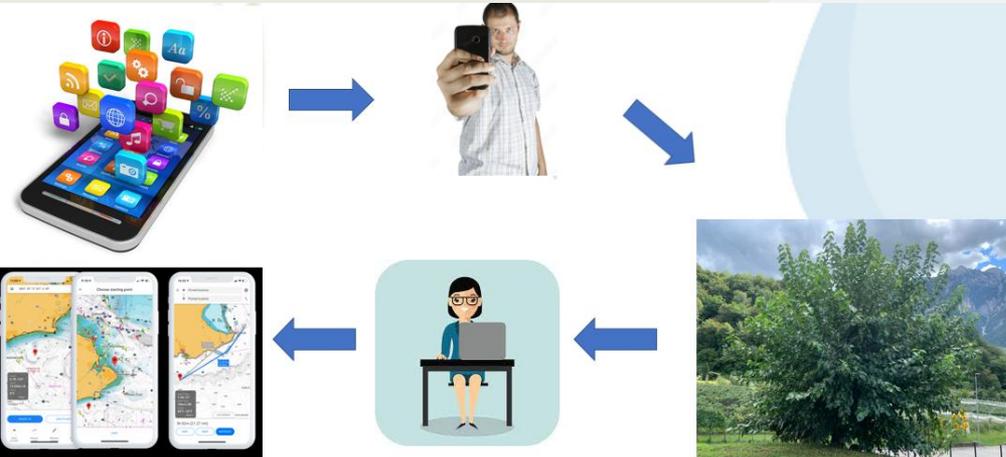
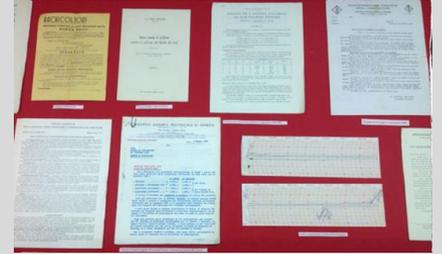
# Scopo generale del progetto

- Valorizzare il patrimonio di conoscenze materiali e immateriali della seta (Cultural Heritage) per le industrie culturali e creative

## Metodologia



L'inventario dei beni sul territorio:  
l'approccio bottom-up e le scuole



Approccio tradizionale: la ricerca  
d'archivio

# Risultati: la mappa virtuale



## CREA, Padua

The Council for Research in Agriculture and Economics (CREA) is a national organisation based in Rome and overseen by the Ministry of Agriculture, Food Sovereignty and Forestry (MASAF). It was created in 2015 with the merger of the Council for Research and Experiments in Agriculture (CRA) and the



# L'inventario dei beni sul territorio: la mappa virtuale

European Silk Route



Georgia Bulgaria Greece Slovenia Italy France Spain

Silk Museum, Como

Red Spinning Mill of Caraglio, Cuneo

Antonian Museum, Padua

Reeling Plant Romanin Jacur, Salzano

Museum of Silk Art and Laterizia, Malo



Silkworm Museum, Vittorio Veneto

Marson Institute and Baciological Observator...

Reeling Plant Motta, Mogliano Veneto

D'orica, Nove

Serica 1870, Follina, Treviso



Ca' Pisani Rubelli, Venezia

Artisanal Weaving Bevilaqua, Venice

Innovhub Experimental Station, Milan

Silk Supervisors Office of San Giovanni...

Villa Chiozza, Cervignano del Friuli



Don Mazza Embroidery Museum, Verona

Farm Lino Bernardo, Massanzago

Farm Massimo Miotto, Sala di Istrana

Farm Diego Trevisan, Piombino Dese

Farm Il Brolo, Teolo

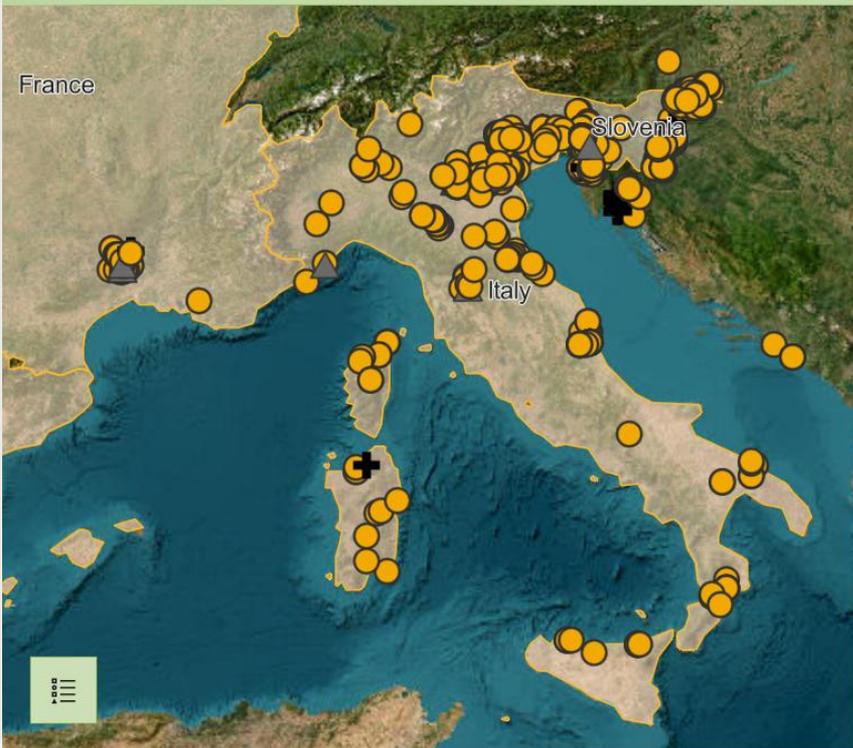


# L'inventario dei beni sul territorio: la mappa dei gelsi



Inventory of historical local mulberry trees

← y General inventory report Mulberry Footprints Across Cou... Inventory of black mulberry tr... Imprint Learn More Refe



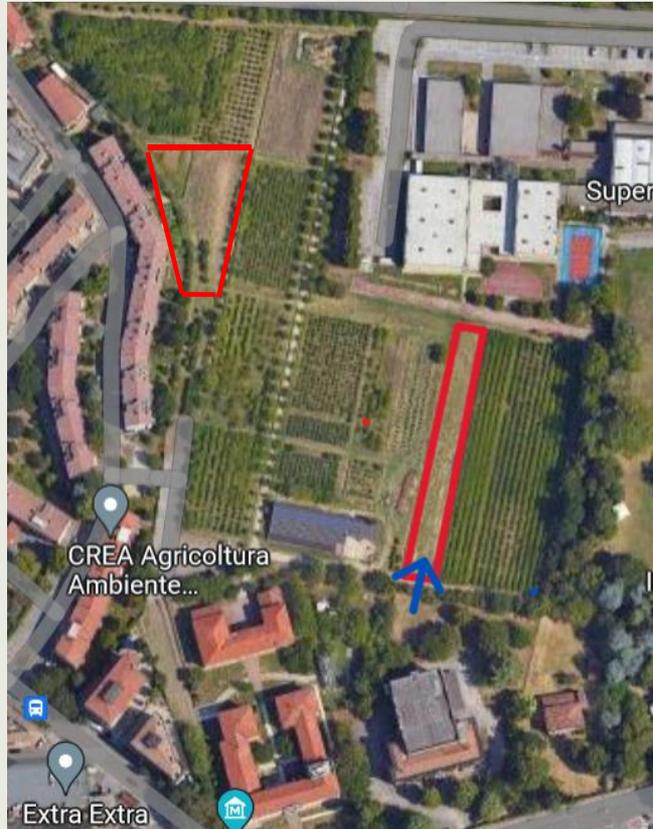
## Report on the inventory of mulberries in Italy

From 2023 to 2025, a total of 378 mulberry trees from Italy were recorded via the *Morus* APP. Inventory of Italian mulberries by species indicates that a majority of recorded trees were white mulberries (*M. alba*) with a total of 371 (98%), while there were five (1.1%) undefined *Morus* sp. and two black mulberry (*M. nigra*, 0.5%) trees (Figure IT\_1A). Figure IT\_1B shows the accessibility options of mulberries recorded in Italy. The majority were grown in in public areas (27%). The second most common were mulberries in private gardens (26%), and the third most common were mulberries along streets (22%) and in agricultural areas (14%), while 7% were found in botanical gardens or collections, and only 3% in squares. Half of the mulberries in Italy grew individually (53%), while users recorded one third (32%) in mulberry rows and 15% in plantations (Figure IT\_1C).

# La salvaguardia dei beni sul territorio: la collezione dei gelsi

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Nuova parcella con collezione gelsi



# Il catalogo virtuale della seta: SILK UNVEILED



## Silk unveiled

FIRST SILK NARRATIVE CATALOGUE

- **9th-10th Centuries**  
Introduction and spread of sericulture in Italy after the Arab conquest of Sicily.
- **13th century**  
Transition from silk embroidery to textile production.
- **13th-16th centuries**  
Diffusion of innovations in silk production methods across Italy.
- **15th-16th centuries**  
Silk manufacturing becomes a major industry.
- **17th century**  
Expansion of mulberry cultivation, silkworm rearing, and export of raw silk.
- **18th century**  
Acceleration of mulberry cultivation, including in damp plains and large estates, and innovations in silk reeling machinery.



Farmers transport the cocoons to the collective storeroom to sell them. (Source: CREA Sericulture laboratory)

## Italy

### The sericulture in the past

Silkworm cultivation arrived in Italy in the 9th-10th centuries following the Arab conquest of Sicily in the 9th century, as documented in the 'Cairo Geniza'. From Sicily it spread to Calabria under the Normans and to other parts of the South, while in the rest of the peninsula silk processing preceded the appearance and establishment of mulberry cultivation by centuries. In Lucca, Venice and Genoa during the 13th century, there was a shift from embroidery or decoration of clothing accessories with silk yarns to the production of fabrics imitating Byzantine or Arabic models. These processes of diffusion of innovations follow a multiplicity of routes, in some cases independent of each other, and if Sicilian craftsmen from Genoa settled in Lucca, for Venice, a direct link with Byzantium is assumed, particularly in the period following the Fourth Crusade.

Secondary migrations, such as that of exiles from Lucca to Venice in the 14th century, contributed to the diffusion and circulation of technical knowledge and figurative models. Silkworm rearing and mulberry cultivation for larval feeding (sericulture) followed manufacturing with a long delay, so that even at the beginning of the 15th century, production in one of the territories of early establishment of this activity in northern Italy, the province of Vicenza, was limited to around one hundred kilograms of yarn per year.

The second part of the 18th and the first part of the 19th century are the golden age of sericulture. The growing incidence in land revenue of the proceeds from the sale of silk induced the owners to devote more and more attention to silkworm rearing. Dandolo's innovative proposals led to a change in the way rearing was conducted, while constructions and restorations of farmhouses were undertaken to make them more suitable for sericulture.

The era of experts and practitioners was replaced by a scientific and technical approach, particularly regarding to the preparation of silkworm eggs, with the spread of cellular reproduction with microscopic selection of healthy moths and the foundation of the "Stazione Bacologica" in Padua as a centre for the promotion of innovations in the sector. While the more advanced areas of Lombardy reacted autonomously to the crisis caused by pebrine because put into practice and improved on Pasteur's own lessons, the "Stazione Bacologica" promoted an action to improve sericultural techniques and knowledge that bore fruit above all in the Third Italy of the Adriatic regions, favouring the formation of silkworm egg production poles, such as Vittorio Veneto and to a lesser extent Asolo.

It was in these centres, and especially in the latter, that the production of hybrids was undertaken that would allow Italian sericulture to return to the levels of quality, yields and productivity that existed before pebrine, overcoming the difficulties caused by the import of Japanese eggs.

However, from the beginning of the 20th century Italian sericulture was affected by competition from the East, in particular from Japan, where progress in research on hybrids led to the selection of ever more productive silkworm strains, while changes in agricultural structures, with the slow overcoming of the relationships of share-cropping and mixed field rent highlighted the hidden costs of labour-intensive production.

The crisis of the 1930s and the gradual closure of national economies severely affected a sector as strongly export-oriented as silk production was, reducing mulberry cultivation to a marginal role in most regions of Italy. The economic malaise led to the disappearance of silkworm rearing, with only a few restricted areas, such as the Vittorio Veneto district and the upper Friulan plain, where sericulture continued to maintain a residual importance into the 1950s and 1970s.



Cocoon drying. (Source: CREA Sericulture laboratory)



Egg production plant (moth grading). (Source: CREA Sericulture laboratory)



Egg production plant (moth selection from cocoons). (Source: CREA Sericulture laboratory)



Egg production plant (moth grading). (Source: CREA Sericulture laboratory)



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# Risultati: 3 razze iscritte agli inventari della biodiversità di tre regioni diverse



# Risultati: Inventario dei campioni conservati nel museo Esapolis e analisi dei bozzoli europei



[www.nature.com/scientificdata](http://www.nature.com/scientificdata)

## scientific data



 Check for updates

OPEN

DATA DESCRIPTOR

## Multimomics analysis of the Silkworm cocoon shell

Panagiota Fragkou<sup>1</sup>, Ioannis Martakos<sup>2</sup>, Georgia Rouni<sup>3</sup>, Demetrios Vasilakos<sup>1</sup>, Evangelos Koutsoukos<sup>1</sup>, Alessio Saviane<sup>4</sup>, Silvia Cappellozza<sup>4</sup>, Nikolaos S. Thomaidis<sup>2</sup>, Marios G. Kostakis<sup>2</sup>, Martina Samiotaki<sup>3</sup>, Sotiris Kotsiantis<sup>5</sup>, Mariana Barcenás<sup>6</sup> & Skarlatos G. Dedos<sup>1</sup>

# Risultati: Ricerca sull'archivio e biblioteca del CREA: la rete internazionale delle stazioni bacologiche e la missione italiana a Rodi (2 pubblicazioni)



Stazione di Sericoltura di Vratsa, Bulgaria, 1894

# Le industrie culturali e creative: gli avatar

## Test Avatar 2: Konstantin Zanis (State Silk Museum)

### The Caucasian Photographer-Scientist

Our Konstantin Zanis avatar introduces visitors to the life and work of the pioneering Georgian photographer and scientist (1864–1947). Based in Tbilisi, Zanis served as a technician at the Caucasian Sericulture Station from 1890 to 1903, documenting the intricate world of sericulture through his lens during expeditions. His innovative work included operating a museum-attic lab with a focus on photomicrography. He opened his own photographic studio in 1901, continuing his prolific career into the Soviet era and earning multiple honors for his contributions.

*"Through my lens, I captured not just the delicate art of sericulture, but the very soul of the Caucasus. Every photograph tells a story, a moment frozen in time, preserving both science and culture."*

His extensive photographic collection, encompassing silk production, ethnography, portraits, landscapes, and architecture, is preserved in the State Silk Museum, Georgia's National Archives, and various private collections.



## Test Avatar 1: Enrico Verson (Esapolis)

### The Silkworm Pioneer

Our Enrico Verson avatar embodies the spirit of a dedicated Paduan doctor-scientist. He discusses his groundbreaking work as the founder of the Padua Silkworm Station, his pivotal role in the fight against pebrina disease, and his innovative contributions to silkworm research, making him an international reference figure for Italian silk farming.

*"Through diligent observation and scientific inquiry, we can protect these fragile creatures. Ask me about the delicate balance of sericulture, or the battle against diseases like pebrina."*

Visitors can delve into the fascinating world of entomology and disease prevention through natural conversation with a true pioneer.



# Le industrie culturali e creative: la visita virtuale la museo di IMIDA in Spagna

## GALERIA



• [https://sigdata.imida.es/sericicola\\_tour/tour\\_principal/](https://sigdata.imida.es/sericicola_tour/tour_principal/)

# Le industrie culturali e creative: il kit didattico



# Le industrie culturali e creative: il video

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**Silken Threads of Europe**

# Le industrie culturali e creative: le start-up



I bachi da seta creano naturalmente dei bozzoli(A), ma possono anche filare la seta su superfici piane (B). Se dispone di una superficie piana, il baco può depositarvi la seta.

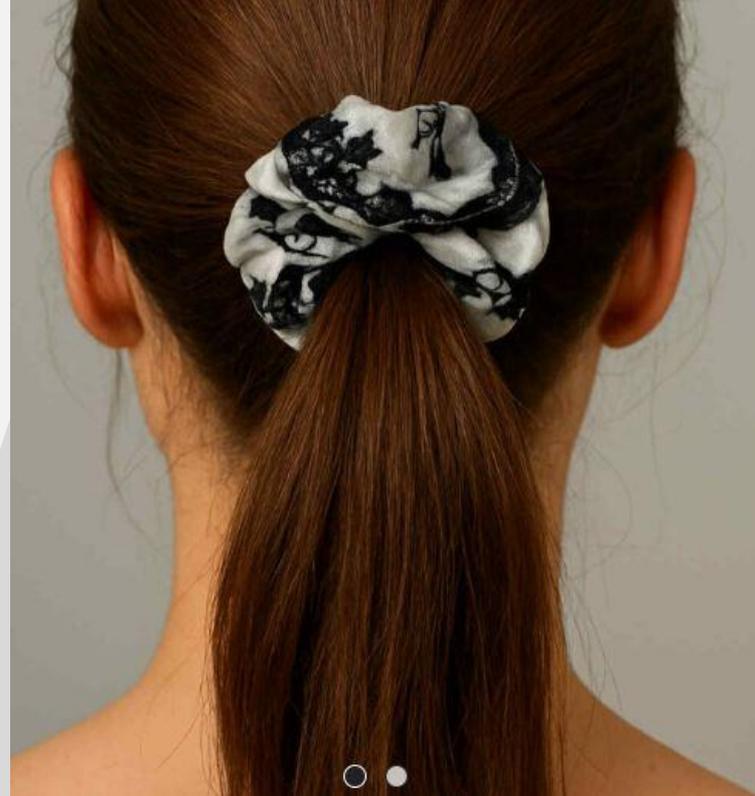


# Le industrie culturali e creative: Evalab e il design dell'Università di Maribor

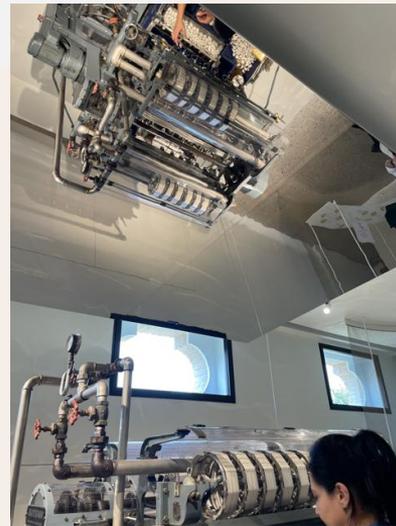


# Le industrie culturali e creative: Art of the Silk Museum

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# ● Risultati: le industrie creative - La villa La Palladiana e la filanda D'orica



# Le basi dell'itinerario europeo della seta certificato dal Consiglio d'Europa:

- il progetto di cooperazione dei GAL, lo scambio fra gli agricoltori

**LEADER**  
Sviluppo guidato dalle comunità locali

Finanziato dall'Unione europea



Tiziana Martire e Angelo Paganin del Cantiere del baco di Villa Zuppani a Sedico con gli altri rappresentanti della gelsibachicoltura in Calabria

Il Cantiere della Provvidenza e i colleghi veneti a Catanzaro e Cosenza  
Confronti sulle sperimentazioni e nuove prospettive di collaborazione

## La coltivazione dei gelsi a Villa Zuppani di Pasa guarda alla Calabria

**IL FOCUS**

**C'**era anche il Cantiere della Provvidenza di Sedico in Calabria, in occasione della visita-studio degli agricoltori veneti nel triangolo d'oro della seta calabrese per un approfondimento sulla gelsibachicoltura.

Organizzato da Cipat Veneto in collaborazione con il Crea Agricoltura Ambiente - Laboratorio di gelsibachicoltura di Padova, l'evento ha portato i principali allevatori di bachi da seta del Veneto a scoprire interessanti realtà produttive e del mondo della ricerca, attraverso varie tappe a Lamezia Terme, San Floro, Cortale, Girifalco e Mirto Crosia, tra le province di Catanzaro e Cosenza.

A rappresentare il Cantiere della Provvidenza c'erano la presidente Tiziana Martire e il vice Angelo Paganin. Attraverso l'attività del Cantiere del baco, il Cantiere del

la Provvidenza è tra i protagonisti veneti di questo settore dell'agricoltura. In particolare, le attività di gelsibachicoltura si svolgono nel contesto di Villa Zuppani a Pasa di Sedico.

Qui ha preso forma la collaborazione con l'agenzia regionale Veneto Agricoltura, per la quale il Cantiere della Provvidenza gestisce un gelseto sperimentale messo a dimora nel 2014 da parte di Veneto Agricoltura. Attraverso il supporto tecnico scientifico del ricercatore del Crea di Padova, da oltre una decina d'anni il Cantiere della Provvidenza si è specializzato nella produzione di seme bachi - le uova - che vengono distribuiti in Europa e non solo.

Così facendo, è stata riscoperta un'attività tradizionale del territorio bellunese, ancora viva nei ricordi della comunità, a che fin da subito ha

dimostrato di avere tutti i presupposti per poter generare nuove prospettive di sviluppo sia in termini occupazionali sia economici in campo agricolo, turistico ed artigianale.

Il percorso in Calabria ha gettato le basi per rafforzare sinergie già in atto e iniziarne di nuove, con l'obiettivo di fare massa critica nella produzione di bozzolo e rendere più sostenibile il processo di trattura della seta, attivo nella zona di San Floro. Senza dimenticare l'opportunità di trovare nuovi sbocchi al bozzolo e ad altri sottoprodotti della filiera Made in Italy.

Interessanti inoltre gli sbocchi che potrebbero esserci per un avvio di una attività artigianale anche tra gli allevatori bellunesi, interessando inoltre chi ha passione di prodotti legati al mondo della seta fatti a mano.

Il gruppo, accompagnato da Alessio Saviane del Crea, ha incontrato la cooperativa Nido di Seta a San Floro, l'Arsac centro sperimentale dimostrativo di Mirto - Crosia, l'Arsac di Lamezia Terme, l'atelier artigianale Vitaliano Couture a Girifalco e l'associazione Spazio donne di Cortale.

Proprio a Cortale, in una conferenza organizzata dall'amministrazione comunale, Angelo Paganin in qualità di portavoce della rete di Impresa Rete Setica ha presentato le attività dei gelsibachicoltori veneti, mentre Alessio Saviane ha illustrato gli obiettivi del progetto Morus Up, per la tracciabilità digitale della filiera. —

DAPO

## Developing a Cultural routes requires to:

Defining a theme

Step 1



Identifying heritage elements

Step 2



Creating a European network

Step 3



Coordinating common actions

Step 4



Creating common visibility

Step 5





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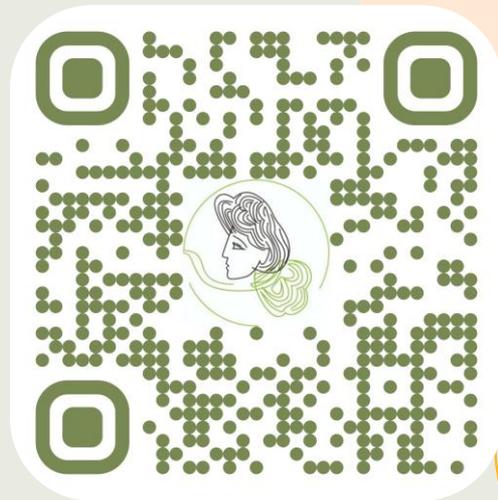
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# Thanks

Silvia Cappellozza | CREA  
[silvia.cappellozza@crea.gov.it](mailto:silvia.cappellozza@crea.gov.it)

Jenia Dubrivna | INI  
[jenia.dubrivna@iniziativa.cc](mailto:jenia.dubrivna@iniziativa.cc)

[www.aracneproject.eu](http://www.aracneproject.eu)



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