



POLITECNICO
DI TORINO

Dipartimento
di Architettura e Design

M.Sc. in Design Sistemico "Aurelio Peccei"

Academic year 2019/2020

THE SYSTEMIC APPROACH APPLIED IN/OUTSIDE THE ONE'S OWN CONTEXT

Analysis of two main production areas: wine in **Basso Monferrato**,
Piedmont, Italy and green tea in **Uji area**, Kansai, Japan.

A strategy for enhancing the **cultural landscape** through
local production systems.

Candidates:

Asja Aulisio, Eva Vanessa Bruno

Supervisors:

Silvia Barbero, Marco Bozzola, Beatrice Lerma



DAD - Department of Architecture and Design
MSc in Design Sistemico “Aurelio Peccei”

Academic year 2019/2020

THE SYSTEMIC APPROACH APPLIED
IN/OUTSIDE
THE ONE’S OWN CONTEXT

Analysis of two main production areas: wine in **Basso Monferrato**,
Piedmont, Italy and green tea in **Uji area**, Kansai, Japan.

A strategy for enhancing the **cultural landscape** through
local production systems.

Candidates:

Asja Aulisio, Eva Vanessa Bruno

Supervisors:

Silvia Barbero, Marco Bozzola, Beatrice Lerma



Legatoria Monti
February, 2020, Turin

At the end of this paper, we wish to thank all the people without whom this thesis work would not have existed.

We thank our speakers, Silvia Barbero, Marco Bozzola and Beatrice Lerma, who in this year of work have supported, guided and shared with us the main education moments for our profession.

Thanks to our families and to Stefano and Federico, who stand beside us with their love and patience. Together with them, we are no longer afraid to make courageous choices.

Special thanks go to our classmates: thanks to you, the university experience has been enriching, amusing, and full of satisfaction. Fabiana, Alessandro, in addition to being classmates, you have supported us as friends.

Finally, thanks to us, we companions of adventure but above all friends. We trust that this thesis will be the beginning of other experiences.

Asja, Eva

THE SYSTEMIC APPROACH APPLIED IN/OUTSIDE THE ONE'S OWN CONTEXT

Analysis of two main production areas: wine in **Basso Monferrato**, Piedmont, Italy and green tea in **Uji area**, Kansai, Japan.

A strategy for enhancing the cultural landscape through local production systems.

Abstract

DRINKSCAPE

A multidisciplinary activity involving different project scales: design, architecture and landscape

1.1 The aim of the program

1.2 The mission of UNESCO and Japan Heritage

- 1.2.1 What does belonging to a world heritage organisation mean?
- 1.2.2 Relationship between raw material and world heritage
- 1.2.3 Key elements for the candidacy of Uji Tea and Piedmont Wine sites

1.3 Tools and methodology of the program

- 1.3.1 Long-distance working
- 1.3.2 Exchanging information and knowledge via webinars
- 1.3.3 Meta-design dossier as a tool for reading the territory

1.4 Workshop in Wazuka

- 1.4.1 Program day by day
- 1.4.2 Closing remarks

1.5 Workshop in Monferrato

- 1.5.1 Program day by day
- 1.5.2 Closing remarks

1.6 Final results

- 1.6.1 Yubune
- 1.6.2 Cella Monte

TEA AND WINE WORLD

Products with common features for the territory identity

2.1 Opening information related to historical, cultural and economic matters

- 2.1.1 Tea production in Japan
- 2.1.2 Wine production in Italy

2.2 The role of the landscape: terroir concept

- 2.2.1 Tea terroir
- 2.2.2 Wine terroir
- 2.2.3 Nihon de mottomo utsukushī mura
The most beautiful villages in Japan Label
- 2.2.4 I Borghi più belli d'Italia
The most beautiful villages in Italy Label

2.3 Quality certifications: from DOC in Italy to JAS in Japan

- 2.3.1 In Italy: DOC, DOCG, IGT, UE
Organic label quantity and laws
- 2.3.2 In Japan: JAS

HOLISTIC DIAGNOSIS

Application into a native and foreign context, by opportunities and challenges

3.1 Introduction and methodology

- 3.1.1 The Systemic Approach
- 3.1.2 The Holistic Diagnosis

3.2 Overturning the HD: the goals of different process orders application

- 3.2.1 Tea sphere starting from field research ending with desk research
- 3.2.2 Wine sphere starting from desk research ending with field research

3.3 Qualitative and quantitative data analysis about the tea sector

- 3.3.1 Geography
- 3.3.2 Demography
- 3.3.3 Cultural aspects
- 3.3.4 Economy
- 3.3.5 Tea consumption
- 3.3.6 Tourism

3.4 Qualitative and quantitative data analysis about the wine sector

- 3.4.1 Geography
- 3.4.2 Demography
- 3.4.3 Cultural aspects
- 3.4.4 Economy
- 3.4.5 Wine consumption
- 3.4.6 Tourism

3.5 Appendix: issues noticed and key points to develop

LIVING AND DESIGNING

in the same context; a methodological tool to learn

4.1 Living outside the context: an abroad experience as an opportunity for exploring an alien culture

- 4.1.1 The research path developed during the exchange program in Nagoya
- 4.1.2 Field research approach as "outsiders"
- 4.1.3 Carrying out the field research among troubles and opportunities

4.2 Living inside the context: an in-depth investigation of the familiar culture

- 4.2.1 Field research approach as "insiders"
- 4.2.2 Carrying out the field research among troubles and opportunities

MATERIAL CULTURE

The relationship between objects, their usage and know-how

5.1 The role of the tools within the rituals and over time change

5.2 Green tea world and history

- 5.2.1 Tea ceremony and tools
- 5.2.2 Tea house
- 5.2.3 Tea daily consumption
- 5.2.4 Tea ready to use consumption
- 5.2.5 The actors: from the supply chain to the consumption

5.3 Wine tea world and history

- 5.3.1 Wine tasting and tools
- 5.3.2 Infernot
- 5.3.3 Wine daily consumption
- 5.3.4 Wine extra-ordinary consumption
- 5.3.5 The actors: from the supply chain to the consumption

ISSUES AND OPPORTUNITIES

From the rural activities until the manufacturing process analysis

6.1 From the fields to the raw materials

- 6.1.1 *The companies: d:matcha, Cinque Quinti*
- 6.1.2 *Current field management: steps, characteristics, inputs and outputs*
- 6.1.3 *Raw materials: biological aspects*

6.2 From raw materials to final products: linear process analysis

- 6.2.1 *Current industrial process : steps, characteristics, inputs and outputs*
- 6.2.2 *Outputs: biological aspects*

6.3 Good practices that already exist

- 6.3.1 *Integrated pest management, organic and biodynamic cultivation*
- 6.3.2 *Current reuse of industrial outputs*

6.4 Defining and managing the throughput flowing in a System

- 6.4.1 *Problems analysis and opportunities from the current supplychains*
- 6.4.2 *Systemic proposals applied to the two cultural landscapes analysed*

SPREAD OUT THE SYSTEMIC APPROACH

As a cultural experience to enhance the cultural landscape

7.1 The cultural landscape: the ideal territory where to apply the systemic approach

- 7.1.1 *World Cultural Landscape*

7.2 The strategy

- 7.2.1 *The model: definitions and main goals*
- 7.2.2 *Meta-project in Yubune and Cella Monte*

Conclusions

References

- Bibliography*
- Web references*

Abstract

Condition and goals of the research

The following study is the result of one year of work started in January 2019 with the involvement in the *Drinkscape* investigation program organised by the Politecnico di Torino and the Kyoto Institute of Technology.

Yubune village in Uji area of Japan and Cella Monte municipality in Basso Monferrato in Italy are the two selected areas the thesis focused on. Both sites are included in two different territorial development programs, “*A Walk through the 800-year history of Japanese Tea*” by Japan Heritage and the “*Vineyard Landscape of Piedmont: Langhe-Roero and Monferrato*” by UNESCO Cultural Heritage.

The two main supply chains, green tea in Uji and wine in Basso Monferrato, identify the cultural landscape from the productive, social and cultural point of view. Within this thesis, the *systemic design approach* has been applied *in/outside the context* taken into account: in Japan, as an outsider and foreign designer, and in Italy, as an insider and the native designer.

One of the research purposes is to understand and identify differences and similarities about the application of the systemic approach in a foreign country and a native one.

The reason why the exchange program at Nagoya City University, in Japan, was crucial is that it allowed us to continue to investigate the topic and work on the thesis for five months. Indeed, living in a foreign country gives a precious opportunity to discover and explore the territory while having a different cultural perspective.

In particular, the *holistic diagnosis* has been developed in two different ways:

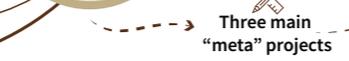
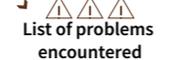
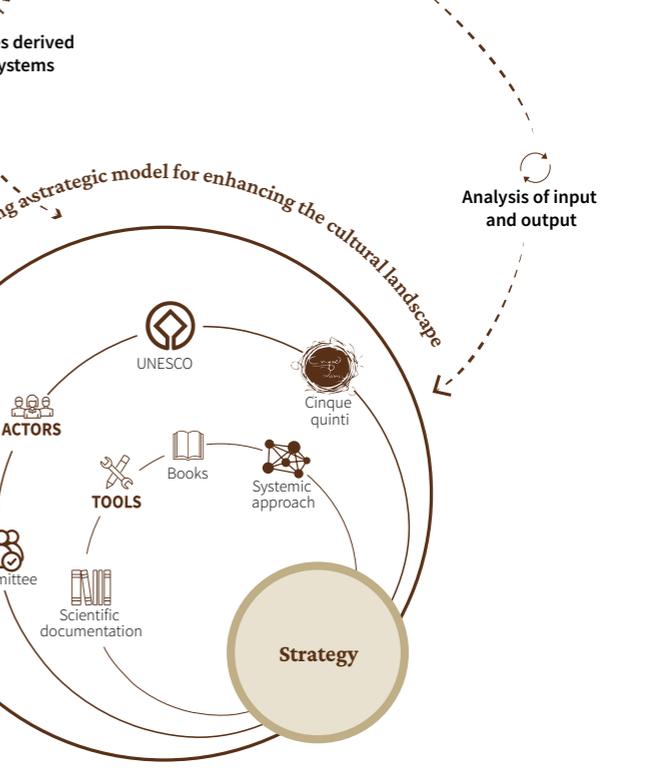
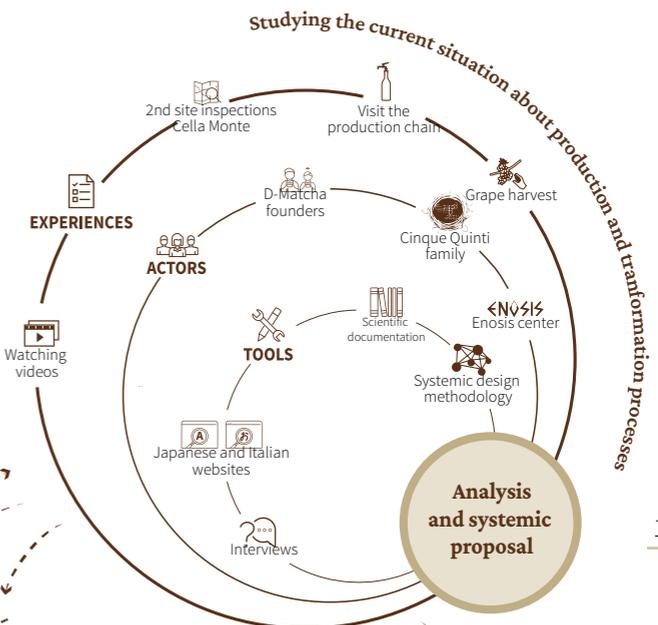
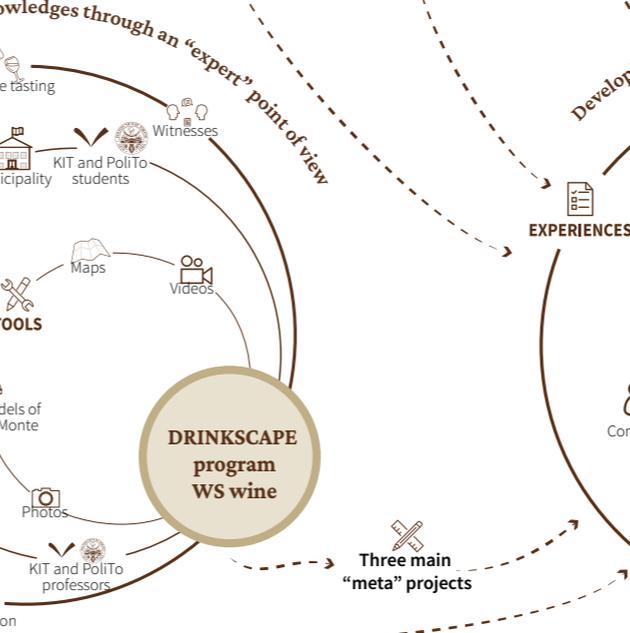
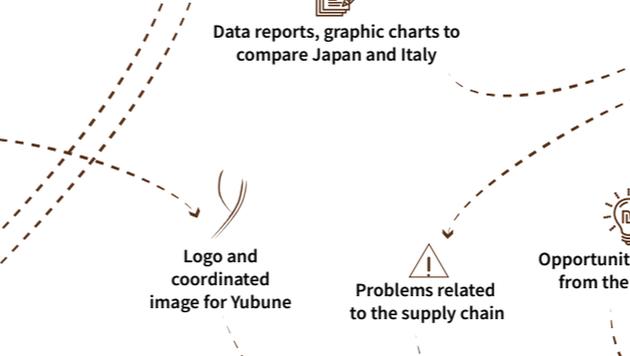
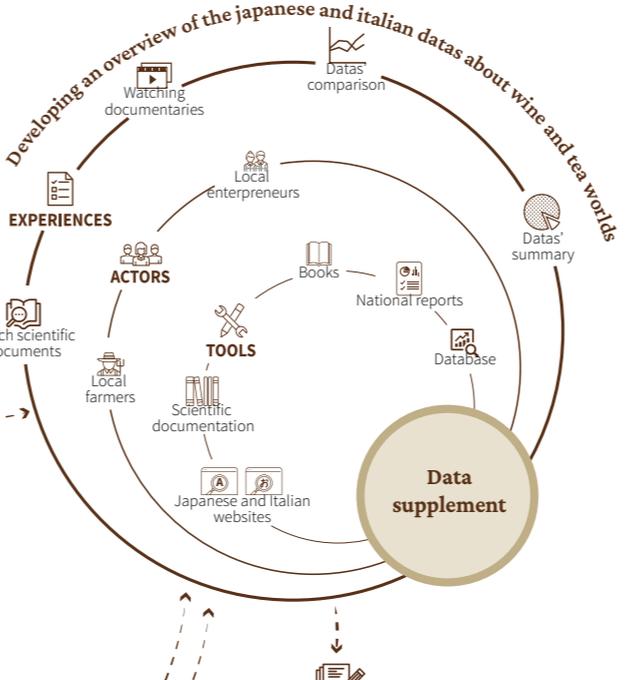
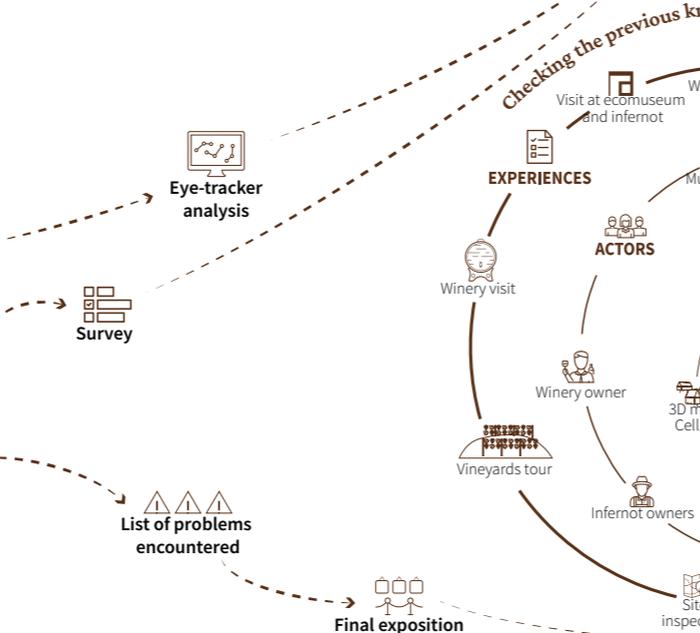
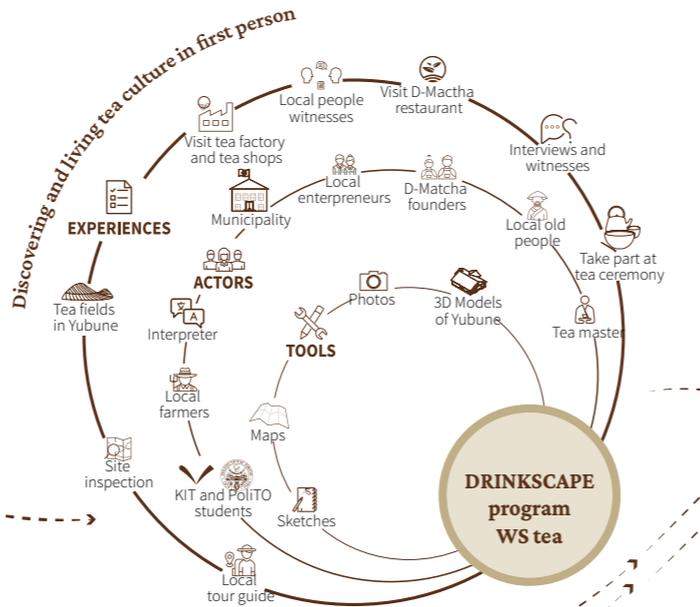
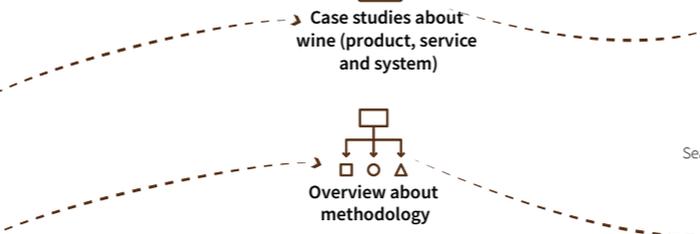
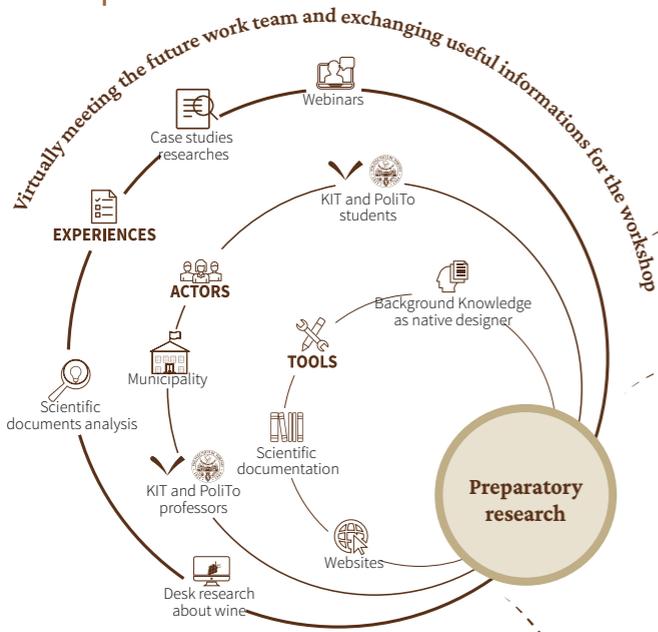
For the wine sector, the HD was carried on with the ordinary way. The desk research started in Italy, continued in Japan and, was followed by the field research, according to the standard method.

For the tea sector, the methodology was overturned, by experimenting the field research firstly in Japan, as outsiders, and then by carrying out the desk research.

The following methodological questions guided the HD steps to identify some useful critical points suitable for future scenarios:

- 1) *Is it necessary to be a native of the analysed place?*
- 2) *What are the tools and who are the actors that could be involved by the foreign designer?*
- 3) *What kind of difficulties may the designer have to face?*
- 4) *What are the strengths in analysing a territory from an external point of view?*
- 5) *How is it possible to involve a company in a design participatory process?*

The research answers these questions providing a designed strategy, customized and fitting with the cultural landscapes. The strategy proposes to enhance the cultural landscapes through the spread and application of the systemic design methodology to the main supply chains which identify them. Finally, the result of the thesis is a set of meta-design proposal come from the strategy, fitted on the peculiarities of Yubune and Cella Monte cultural landscapes.





1

DRINKSCAPE

*A multidisciplinary activity
involving different project
scales: design, architecture
and landscape*

1.1 The aim of the program

Drinkscape (the name comes from the union of the verb to drink and landscape), is an international program that involved for one year students and professors of two universities, the Polytechnic of Turin (PoliTo) and the Kyoto Institute of Technology (KIT).



The programme aims to explore the relationship between **urban and rural areas** from the point of **local food production**, supply and consumption of typical products in terms of a blue economy model, with the focus on sustainable development, environmental protection and optimisation of resources. It also has the purpose of increasing the cultural value of productive landscapes and traditional agricultural practices. Therefore the aim of the programme is two-fold:

to address and respond to the context's specific conditions and challenges, to help configure everyday activities for a renewed territorial development agenda

The analysis will revolve around two similar sites: the Langhe-Roero-Monferrato UNESCO site, Piedmont, Italy, and the Yubune area in Uji, one of the most famous tea production area in Japan. Thanks to the contribution of systemic designers, architects and landscape designers, the program followed a multiscale and multidisciplinary approach. The final projects weaved knowledge related to landscape, buildings, infrastructures, natural resources, and material culture in two types of the cultural landscape.



Fig. 1



Fig. 2

The participation of the program expected a set of activities that includes four webinars and two place-based workshops, the first one in the village of Yubune (fig. 1) and the second one in the village of Cella Monte (fig. 2).

1.2 The mission of UNESCO and Japan Heritage

The villages of Cella Monte and Yubune are included into two different territorial enhancement programs, the first into **UNESCO** and the second one into **Japan Heritage**.

1.2.1 What does belonging to a world heritage organization mean?

UNESCO

The UNESCO - United Nations Educational, Scientific and Cultural Organization - was established in Paris 4th November 1946, after the horrors caused by the II World War for strengthening peace upon the intellectual and moral solidarity of humanity.

Today, UNESCO is working to create holistic policies that can address social, environmental and economic problems. According to the values of Sustainable Development, the programs aimed at promoting intercultural exchange, universal access to new knowledge and communication technologies and to the diffusion of scientific data to prevent the harmful effects of climate change.

By promoting cultural heritage and the equal dignity of all cultures, UNESCO strengthens bonds among nations and fosters scientific programmes and policies as platforms for development and cooperation. Working as a laboratory of ideas, UNESCO helps countries to adopt international standards and manages programmes that foster the free flow of ideas

and knowledge sharing.

UNESCO is also known for designating **World Heritage Sites**, a list set in 1972 of cultural and natural sites that show “outstanding universal value”.

In Japan, there are currently 23 world heritage



Fig. 3 World Cultural Heritage logo

sites, 19 cultural ones and four natural ones; in Italy, there are 50 world heritage sites as well, 50 cultural ones and five natural ones.

The mission of the World Heritage Center, as we can read on the official web pages is summed up in¹:

- Encouraging countries to sign the World Heritage Convention and to ensure the protection of their natural and cultural heritage;

- Encouraging States Parties to the Convention to nominate sites within their national territory for inclusion on the World Heritage List;
- Encouraging States Parties to establish management plans and set up reporting systems on the state of conservation of their World Heritage sites;
- Helping States Parties safeguard World Heritage properties by providing technical assistance and professional training;
- Providing emergency assistance for World Heritage sites in immediate danger;
- Supporting States Parties' public awareness-building activities for World Heritage conservation;
- Encouraging participation of the local population in the preservation of their cultural and natural heritage;
- Encouraging international cooperation in the conservation of our world's cultural and natural heritage.

To be included on **UNESCO's World Heritage List**, sites must deal at least with of the following ten selection criteria²:



1) Human creative genius

To represent a masterpiece of human creative genius;

2) Interchange of values

To exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;

3) Testimony to cultural tradition

To bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;

4) Significance in human history

To be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;

5) Traditional human settlement

To be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;

6) Heritage associated with events of universal significance

To be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. (The Committee considers that this criterion should

preferably be used in conjunction with other criteria);

7) Natural phenomena or beauty

To contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;

8) Major stages of Earth's history

To be outstanding examples representing major stages of Earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;

9) Significant ecological and biological processes

To be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;

10) Significant natural habitat for biodiversity

To contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

JAPAN HERITAGE

Outside of UNESCO, in Japan, there is another organisation called Japan Heritage which aims to promote Japanese unique cultural traditions, to encourage the use of **national cultural** properties and to revitalise regional economies.

Japan's tangible and intangible cultural goods have been preserved through regional histories and traditions. By recognising these stories as Japan Heritage, the Agency plans to promote these historical legacies and to provide complete support so that the heritage may be preserved and maintained.



Fig. 4 JH logo

Once tangible or intangible legacies passed down in a region are designated as Japan Heritage, that particular region will gain recognition in other parts of Japan and abroad.

Organising various events linked to Japan Heritage will not only re-confirm and strengthen identity awareness within the local community. The Japan Heritage also allows brand the area, and it contributes to the revitalisation of the local community.

While the emphasis in registering for World Heritage or designation as a cultural property is focused on evaluating values of the cultural properties to be registered or designated and to ensure preservation thereof, Japan Heritage has a different focus. Japan Heritage does not aim to evaluate the value or establish new regulations for the preservation of cultural properties but to perceive legacies scattered about in a region as a cohesive story. The objective is to publicise such stories and utilise the stories to promote the revitalisation of the local communities.³



1.2.2 Relationship between raw material and world heritage

UNESCO

UNESCO also deals with cataloguing **Intangible Cultural Heritage**, including traditions or living expressions inherited from ancestors and passed on to descendants.



Fig.5 Intangible Cultural Heritage logo

Oral folklore, performing arts, events, social practices, rituals, knowledge and practices, skills to produce traditional crafts are all example of Intangible Cultural Heritage that identify the nation.

For this research, it is appropriate to take into consideration the last aspect, which focuses on raw materials. For example, in 2014, **Japanese Washi paper** was inscribed as the craftsmanship of traditional Japanese hand-made paper. Artisans of only three prefectures practise the traditional craft of hand-making washi paper in Japan: Mino City in Gifu Prefecture, Misumi-Cho in Hamada City, Shimane Prefecture, and Ogawa Town/Higashi-chichibu Village in Saitama Prefecture. The Mino washi paper has a tradition and history of 1300 years; it is unique in terms of technique and quality, inside and

outside of Japan. The paper comes from the fibres of the mulberry plant, which are soaked in clear water, thickened, and then filtered with a bamboo screen.

Washi paper is also used in home interiors to make paper screens, room dividers and sliding doors. Most of the residents of the three communities play roles in preserving this craftsmanship viable, from the cultivation of the plant of mulberry, training in the techniques new generation, to the creation of new products. They want to promote Washi domestically and abroad. Washi paper making is carried on three levels: among families of Washi craftspeople, through associations and by local municipalities.

Food is considered an Intangible Cultural Heritage as well.

“Pizzaiolo” from Naples, Beer culture in Belgium, Turkish coffee culture, Flat Bread making in Turkey, Kimchi, The Mediterranean diet, Gingerbread Craft in Croatia, Traditional Mexican Cuisine, Washoku in Japan (traditional dietary cultures), Gastronomic Meal of the French are some examples of intangible goods related to food.

Washi Paper workshop

In January, we participated in a workshop held by the **Pinacoteca Agnelli in Turin** during the exhibition called “Hokusai, Hiroshige, Hasui. Viaggio nel Giappone che cambia”, thanks to it we learned to make washi paper according to the traditional method.

The **Sensei Nobushige Akiyama**, a young Japanese man who studied and practised how to create washi paper from 25 years, held the workshop. Akiyama spreads the culture of this material, bringing it as a form of artwork. Indeed, he equips many exhibitions all over the world, filling the space of museums with giant curtains of paper in multiple layers. The result is a light filter for windows. Also, he creates a lot of strips of paper that flow with consecutive waves over the head of visitors.

During the workshop, we learned the **old washi paper process method**, but with the help of the technology. First, we soften up the fibres of mulberry, that Akiyama brought from Japan, with a wooden hummer over a piece of a tree trunk.

Then, we put it in the cold water and tried to separate the fibres as finely as we could. Akiyama put inside the water a natural, and then

we started to create our washi paper as described above. We could choose the thickness of the paper dipping the frame in the water as many times as we want. The fibres inside the frame have been put on a canvas, dry from below with a vacuum cleaner, and then put to dry on a plate. We created two washi paper A4 size.



JAPAN HERITAGE

Raw materials can be enhanced through local events, such as the paper during traditional festivals. For example, the **Tanabata Festival** is included in the list of the Japan Heritage and is held from August 6th to 8th.

It celebrates the meeting of the gods Orihime and Hikoboshi (represented respectively by the stars Vega and Altair), and according to legend, the Milky Way separates these lovers, and they can only meet once a year. Thousands of decorations are put throughout the city to celebrate this meeting; Tanabata Festival is comparable to the European Valentine's Day⁵.

There are seven different decoration made up in paper:

- a.** -Paper strips (短冊 Tanzaku): Handwritten wishes for an excellent future to the earth and a thanks note;
- b.** -Paper crane (折り鶴 Orizuru): Origami decoration for long life;
- c.** -Purse (巾着 Kinchaku): Decoration for good business;
- d.** -Net (投網 Toami): a paper decoration for good fishing;

- e.** -Trash bag (くずかご Kuzukago): a paper decoration for cleanliness;
- f.** -Streamers (吹き流し Fukinagashi): Paper tubular streamer for improved weaving skills;
- g.** -Ornamental ball (薬玉 Kusudama); Paper ball usually created by sewing multiple identical pyramidal units.

Therefore, the raw material is an excellent tool for territorial enhancement, because through an event, a typical dish it makes the place attractive for tourists.



a.



b.



c.



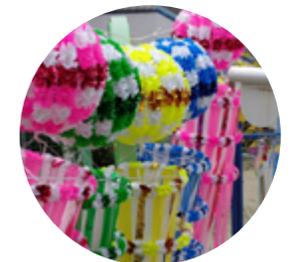
d.



e.



f.



g.

1.2.3 Key elements for the candidacy of Piedmont Wine and Uji Tea sites

UNESCO

The last Cultural Heritage Site of UNESCO in Italy which was added in 2014 is called

Vineyard Landscape of Piedmont: Langhe-Roero and Monferrato.

The site is spread along hills covered with vineyards, interspersed with small hill villages and medieval castles, where for centuries viticulture has been the fulcrum of economic and social life.

It consists of **6 Core zones** within the borders of the Provinces of Alessandria, Asti and Cuneo, with 29 Municipalities involved and they are permeated and protected from a **Buffer zone**, composed of 72 Municipalities. As well as the Components, the Buffer zone areas are protected by the Cultural Heritage Site of UNESCO, and they are considered fundamental for the overall project and the protection and enhancement of the territory.

The overall extension of the site of **Core Zones** is **10.789 hectares**, while the **Buffer Zone** develops for a total area of over **76.249 hectares**, that aims to ensure more excellent protection of the sites and allows the landscape to blend.

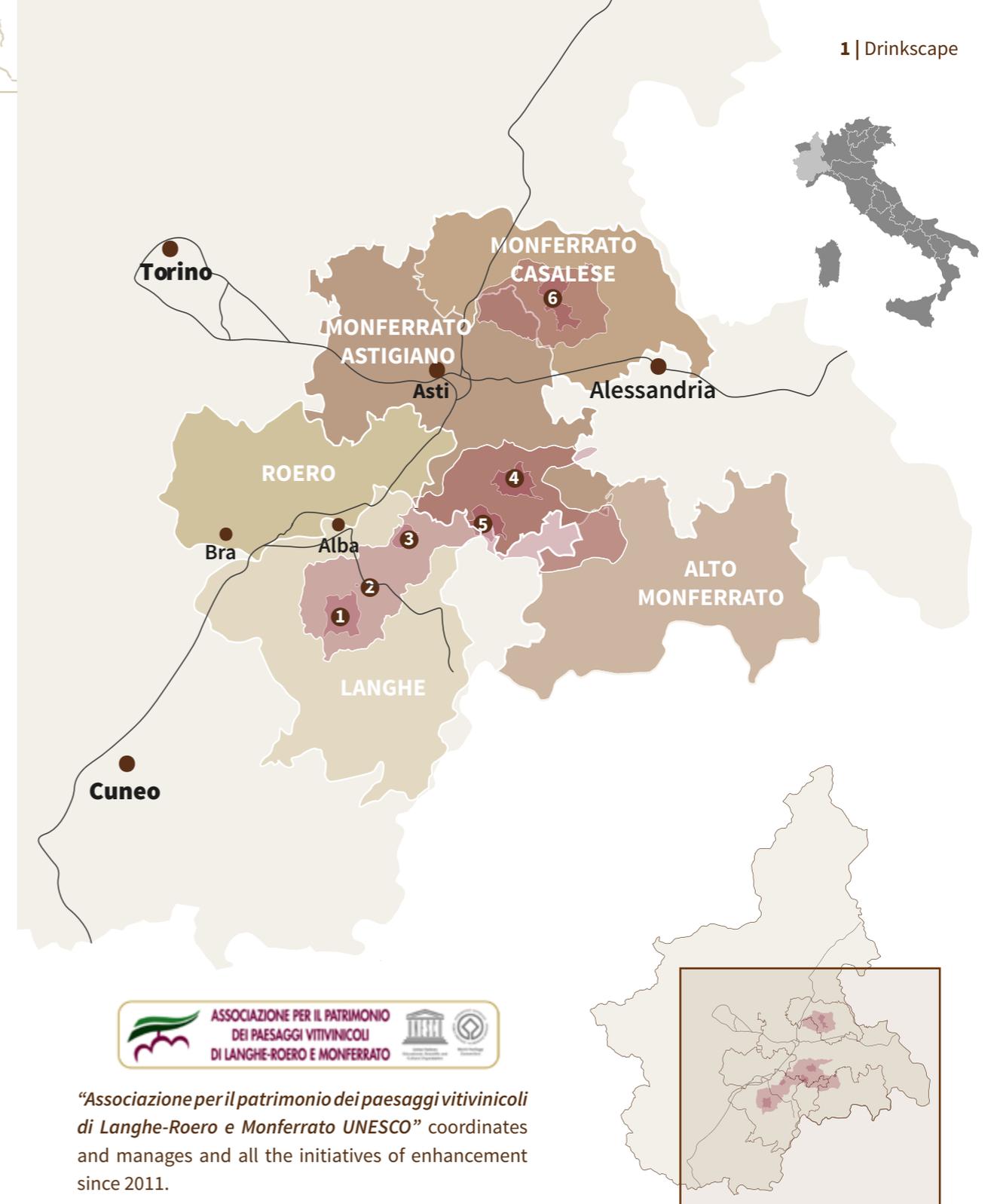
The six core zones that characterise the site are:

1. *La Langa del Barolo*
2. *Il Castello di Grinzane Cavour*
3. *Le colline del Barbaresco*
4. *Nizza Monferrato e il Barbera*
5. *Canelli e l'Asti Spumante*
6. *Il Monferrato degli Infernot*

The thesis' analysis focused on the 6th zone, where Cella Monte is located.

As the maps show, three areas are located in the Langhe area, two in the Alto Monferrato area and one in the Basso Monferrato area. Together, the selected areas represent the exceptional quality of the Piedmontese wine-growing landscape and its profound and lively culture of wine.

The components have been selected with particular reference to the wine productions associated with the territories, to the relevance at national and international level, to the need to comprehensively represent essential places for the **wine supply chain** (from cultivation to production, conservation and distribution) and the historical-settlement and architectural elements (road network, cities, villages, rural nuclei, castles, churches).



“Associazione per il patrimonio dei paesaggi vitivinicoli di Langhe-Roero e Monferrato UNESCO” coordinates and manages and all the initiatives of enhancement since 2011.

The components 1, 3, 4, 5 are therefore representative of the four most relevant production systems in Piedmont, each generated by a particular link between the **grape variety**, the **terroir** (soil and climate) and **wine-making technique**. The result of each system is a very high-quality wine, protected by a specific Controlled and Guaranteed Origin Name (DOCG), such as *Barolo*, *Barbaresco*, *Barbera d'Asti*, *Asti Spumante*.

The site is characterised by a rich and diversified system of **farmhouses**, **wineries**, **wine industries**, **social wineries**, **public and private wine shops**, and some **symbolic places** for the history and development of national and international viticulture and oenology like the Castle of Grinzane Cavour in zone n. 2. Finally, the wine cycle is completed by the presence of “vernacular” artefacts, such as the *infernots* dug up of *pietra da cantoni*, designated for the domestic preservation of wine.

The winegrowing landscapes of Langhe-Roero and Monferrato thus constitute a unique testimony to a cultural tradition that is still powerfully alive, as attested by the fame and quality of its vineyards and its wines, and also represent a remarkable and rare example of cultural landscape resulting from the interaction between man and nature. The landscape can be defined as a mosaic because of the rows of vines cultivated in the territory, the shapes of cultivation, the textures of the vineyards, the presence of woods and fields. After the nomination as UNESCO Heritage, the project called “*Valorizzare un Patrimonio*

UNESCO” has been activated. The project aims to enhance the heritage of wine architecture of the UNESCO site through two main areas of action.

First, it expected to involve people who live in the area, especially: the young generations as custodians of the future of the site, and those that daily operate as associations on an area of excellence. The second part of the project is integrated with census activities already in the act on the territory and expands them, in particular by setting itself the objective of making a system of the various types of existing censuses, and those currently being implemented by part of different subjects.

The results achieved were the following:



1. Educational workshops dedicated to primary schools;



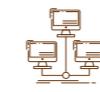
2. Educational kit on the UNESCO theme to be distributed in schools over the next years;



3. In-depth census of the wine heritage (*infernot*, *ciabot*, castles, and architecture);



4. Geo-database for the collection and systematisation of the census records;



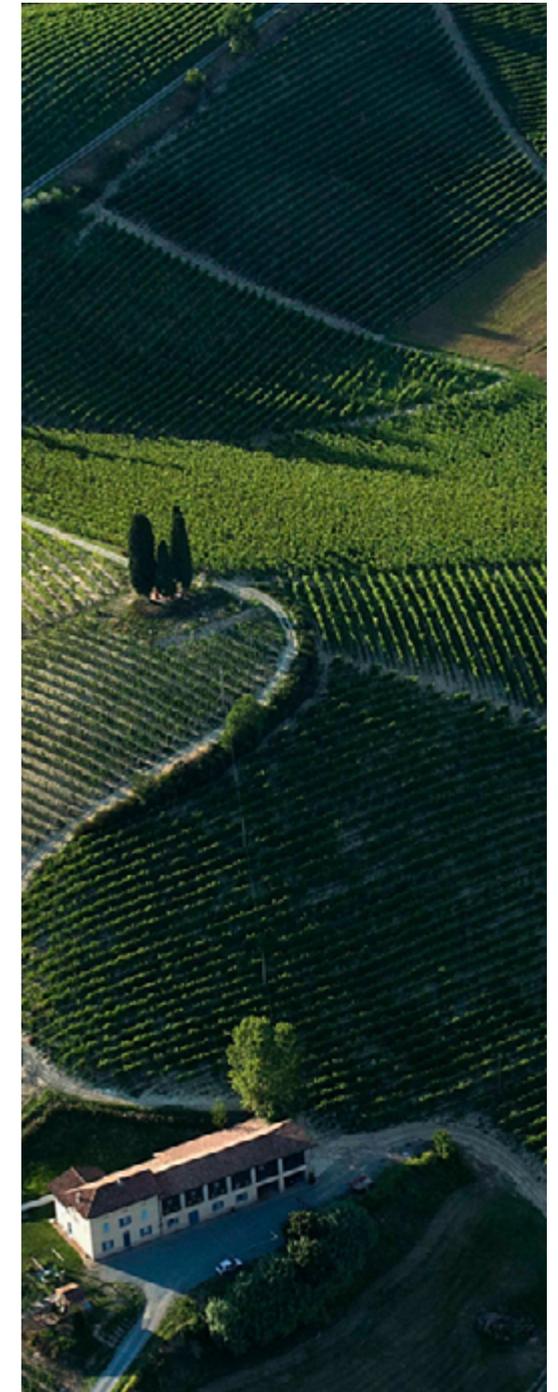
5. Open data to increase and encourage territory research;



6. Two publications, one in English;



7. Final communication conference e dissemination of results.



1.2.3 Key elements for the candidacy of Piedmont Wine and Uji Tea sites

JAPAN HERITAGE

The Japanese intervention area is enhanced by the program called:

A Walk through the 800-year history of Japanese Tea

of Japan Heritage from 2016. The site includes cultural asset from the Kamakura era, Edo era, to Tokugawa – Showa period.

NB: Japanese heritage website does not have the same content of information in English and Japanese since Japanese website has more information, PDF file, photos, maps.

The English one has just an introduction to the topic. For over 800 years, people living around the area of Uji, in the southern part of Kyoto, have developed a wide variety of first-class teas and continue to be leaders in tea production and processing. Nowadays, people continue to make outstanding cultural contributions to the lasting traditions of the tea ceremony.

Tourists can experience the different stages of development in the history of tea production through **tea fields, wholesale shops, tea-processing factories, and local festivals**, that reflect the way tea has been produced, distributed and consumed in Japan over time.

The Agency of Cultural Affairs, that deals with choosing the valuable sites, made a list of cultural asset widespread all over this area.



The **Kyoto Prefectural Landscape Asset** combines the landscapes of various parts of the prefecture and the local activities that support the territory, backed by a unique history and culture. It aims to improve local appeal by disseminating information, promote the landscape creation activities and community development activities.



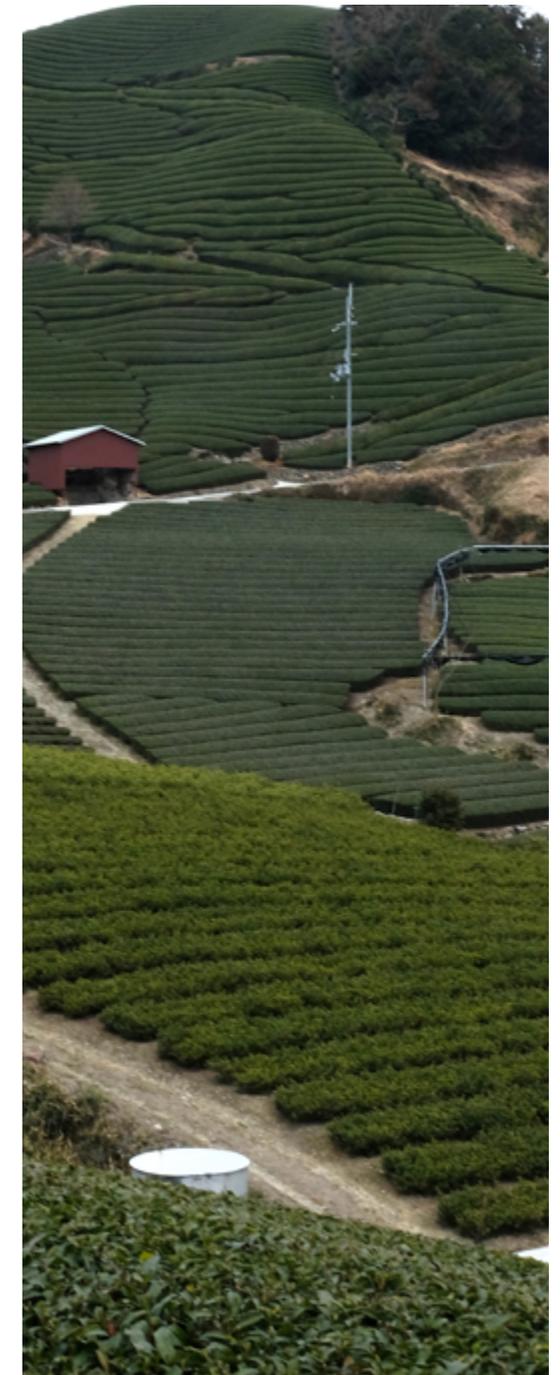
お茶の京都

The upper logo is the label of **Kyoto Infused with Tea** that identifies the history, the long tradition, and the innovation of **Japanese green tea production area**. Territories with this label are considered as “hometown of Japanese green tea”. It contains a cloud crest symbolizing weather that allows the quality of tea. The tea fields express beautiful scenery and the fusion of traditional culture.

This label is part of five distinctive areas where you can get to know a side of Kyoto that is very authentic.

In Kyoto, you can also find:

- **Kyoto by the Sea** facing the Sea of Japan;
- **Woodland Kyoto**, where you'll still find unspoilt Japanese landscapes;
- **Kyoto Otokuni Bamboo Grove**, which has many historical and cultural heritages;
- **Kyoto City**, the cosmopolitan tourist city.



It's possible to categorise all that assets into different categories: National Important Cultural Landscape, Designated scenic spot, Cultural property environmental conservation area, City designated tangible cultural property, Designated intangible folk cultural property.

The main important one is located in:

UJI

Okunoyama tea plantation, Koseiji Temple, Tea plantation in Shirakawa area, Nakauji Cityscape, Uji River and bridge, Tonen Chaya, Hashidera Hoshoin Tea House, A ceremony to draw up water from Uji river, The tea ceremony, Tea plantation close to the Kyoto Tea Research Institute, Uji Shrine, Ujigami Shrine, Uji tea hand-made tea-making technology.

KYOTANABE

Iioka tea plantation.

KIZUGAWA

Kaisumisan-Ji Temple, Kamisu Tea Wholesale Store, Tea plantation and tea factory attached to Kyoto Prefectural Kizu High School.

IDE

Taga's Forest Tea Garden.

UJITAWARAMACHI

Nagatani Soensei House, Townscape of tea fields, tea farms, tea wholesalers, Yuya Valley.

KISAGI

Kasakiyu City Tea Plantation and Cableway.

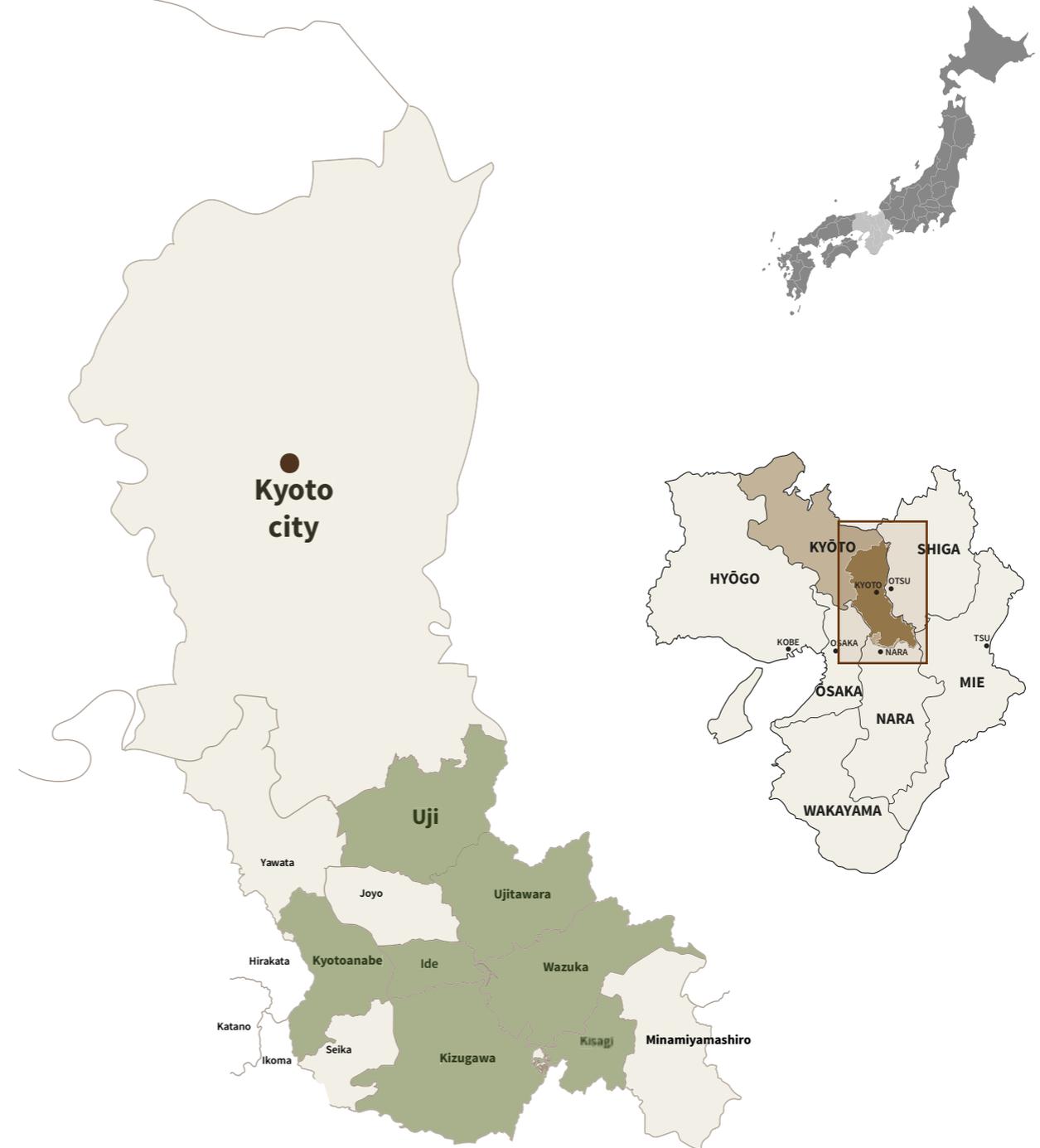
WAZUKA

Yubune, Harayama tea plantation, Ishidera / Shirakaba / Hagiwara / Kamazuka Tea Plantation.

NAMSAN CASTLE VILLAGE

Tea plantation in Dosenbo, Takao, Tayama, Imayama.

Due to the presence of all these assets, the desire to enhance the Uji area was gathered through a project called: Uji-cha Tea Cultural Landscape. It could potentially be an Outstanding Universal Value for the UNESCO World Heritage List because it represents an exceptional testimony to the origins of Japanese green tea as well as the invention and development of unique tea handmade production methods, which have passed down from generation to generation. It also shows a full range of land uses and landscapes characteristic of tea production that has historically been developed in Japan. The tradition organically blended with technology innovation and rationalisation, to be the most representative of land uses and landscapes associated with tea production in Japan.



1.3 Tools and methodology of the program



The search path developed for Drinkscape Programme started at the beginning of the Academic year 2018/2019, and the agenda expected several steps during the scheduled time.

The programme developed a set of activities that include four webinars and two place-based workshops, the first one in Yubune (Japan) on February 2019 and the second one in Cella Monte (Italy) on September 2019. The entire work has grown thanks to the synergic work between students and professors, coordinated by the scientific committee.

Members of the team

Professors:

Kyoto Institute of Technology Coordinators: prof. Kazue Akamatsu; prof. Eizo Okada; prof. Yoshiro Ono; prof. Shigeatsu Shimizu.

Politecnico di Torino Coordinators:

prof. Claudio Germak; prof. Marco Santangelo.

Tutor team:

prof. Silvia Barbero; prof. Mauro Berta; prof. Andrea Bocco; prof. Marta Bottero; prof. Marco Bozzola; prof. Claudia Cassatella; prof. Massimo Crotti; prof. Beatrice Lerma; Dott. Marco Marco Gazzoli; prof. Bianca Maria Rinaldi; prof. Davide Rolfo; prof. Michela Rosso; prof. Mauro Volpiano.

Students POLITO:

Master degree of Architecture for sustainable design: Mattia Salvador, Laura Muñoz

Master degree of Landscape: Vittoria Urso, Noémi Juhász

Master degree of Systemic design: Asja Aulisio, Eva Vanessa Bruno

Students (KIT):

Ayaka Ota, Chika Yamade, Haruko Arai, Kana Watanabe, Miori Abe, Namiko Araki Rinko Mitsui, Shin Okamoto, Yumi Goto

The starting point of work was a previous phase of shared research with the other members of the programme to create general scenarios about the analysed areas.

Thanks to the webinars, firstly, it was possible to show the previous researches and create a virtual discussion place to exchange information among PoliTo and KIT students and professors.

During the first phase of the research, the work between students and professors was differentiated by study areas, to investigate the research fields of wine and tea preliminarily.

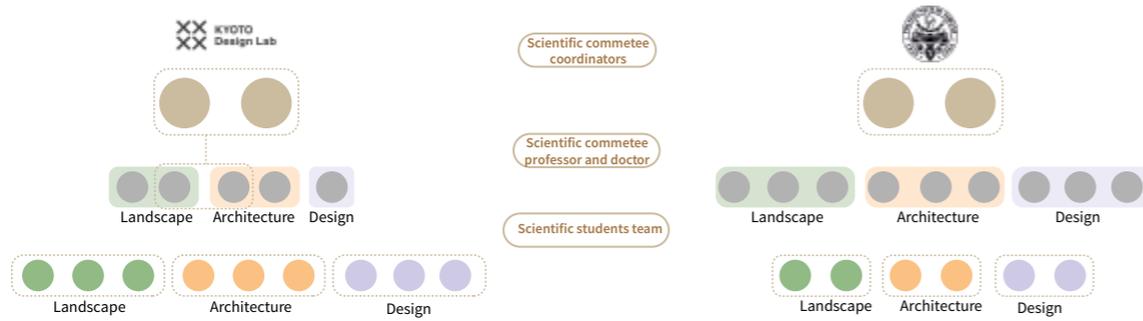
Those things generated presentations aimed at being shared with all the participants for having a common starting point, applying different methodologies related to the different project scales.

With these schemas, it is possible to understand all the roles played by the members that have participated in Drinkscape.

In a particular way, the design team action aimed at introducing innovation at a territorial scale, fostering the connection between people and places, with the ambition of:

- enhance tangible and intangible elements
- improve the fruition of sites
- make local identities recognisable
- activate growth mechanisms of the local economic system

COMETTEE



WEBINAR TIMELINE

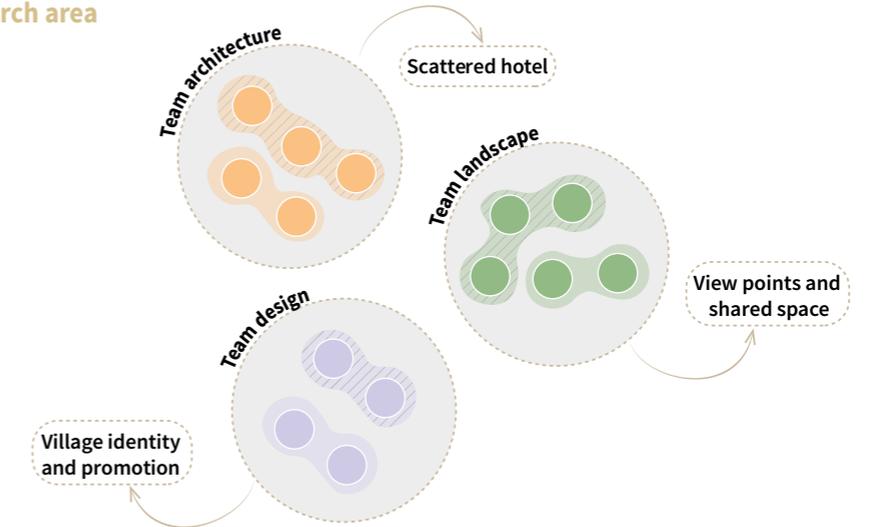
1°	2°	3°	4°
January 2019	February 2019	February 2019	July 2019
INTRODUCTION + landscape planning	Architecture	Design	Cella Monte settlements

JOINT WORKSHOP

February - March 2019	September 2019
5 days	4 days
Yubune	Cella Monte

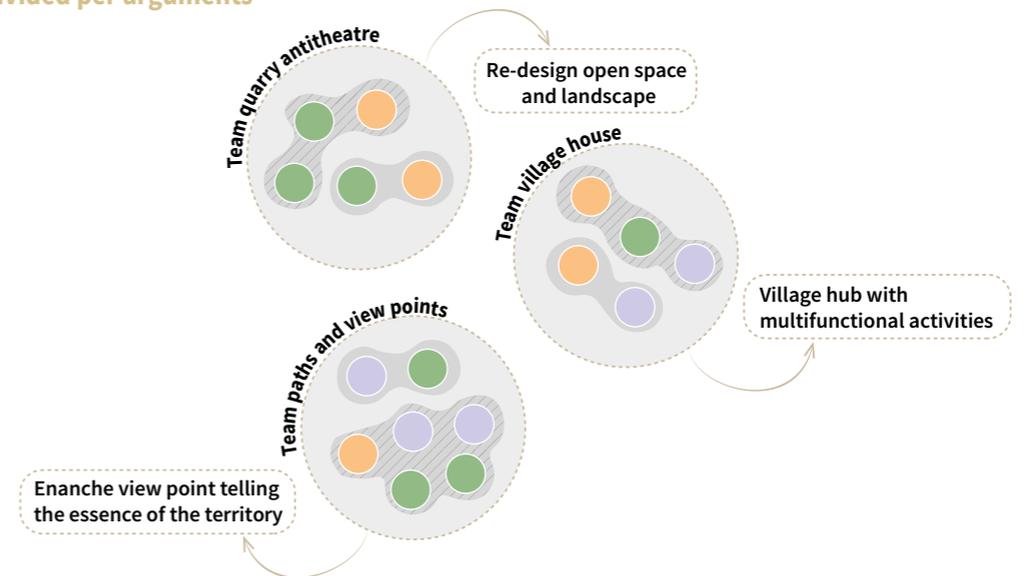
First joint workshop in Yubune, Japan.

Teams divided per search area



Second joint Workshop in Cella Monte, Italy.

Teams divided per arguments



1.3.1 Long-distance working

According to the design methodology, we investigated, before the webinars, the relationship between human being and aspects related to wine consumption. The main goal was to define a wine **scenario** about products, communication, experiences, services and supply chain

The scenario is a critical mass of data and references built up around the issues in hand. It is a survey of the consumer situation carried out in order to find the characteristics of the end users the project is targeting.⁴

monitoring; the data collection was finalised to define the state of art of wine sector in Italy but also in other places in the world. This chapter would like to list the case studies found, to classify the projects according to their scale. In particular, we followed

a path through the methodology dividing all the case studies into the three-level of the project: product, service, system. In addition to this categorisation, we focused on the main gestures and actions which characterised the consumption and the distribution of wine.

So, the main groups are divided into the following actions:

- *tasting,*
- *discovering*
- *visiting*
- *packaging and selling*
- *consuming*
- *“beyond wine”*

The last one is a section about the future possibilities of the outputs, which represent the wastes of the winemaking process, thanks to the systemic thinking approach.

40
case studies

20
categories

11
guide lines

3
design scales

CASE STUDIES LIST

The following schedules summarise the visualisation of main case studies showed during presentation concerning design webinar.

MUSEUM WI-MU

Company: Barolo and Castel Foundation
Year: 2010
Country: Italy

The tour of the museum is structured as a deep descent into the culture of wine: the suggestion of going into the mysteries and myths of the wine corresponds to the physical sensation of reaching the heart of the Falletti castle.

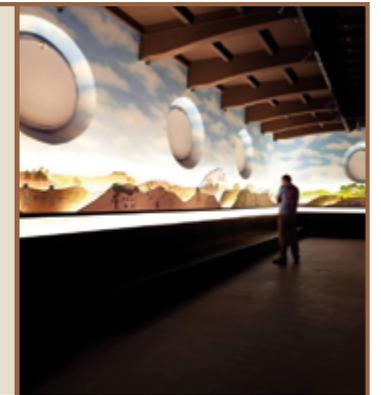
Design's contribution: exhibit design

<http://www.wimubarolo.it>

//service

Cultural communication

User experience



INTERACTIVE MAPS

Company: Monferrato Pesaggi
Year: /
Country: Italy

This interactive map allows you to discover, through the routes studied, destinations and views of the Monferrato Casalese. The routes allow you to discover the lands of water and ridges, forests and vineyards, of memory and tradition along the roads of the Casale Monferrato.

Design's contribution: design the experience

<http://www.monferratopaesaggi.org/>

//service

Territory communication

User experience



COLOUR OF WINE

//product
Product communication
Sensory exploitation

Company: Wine Folly
Year: 2011
Country: USA

This chart will help become familiar with the hue spectrum and common vernacular to describe color. Observing color in wine will improve the mental repertoire for activities such as blind tasting, assessing wine quality and vintage.

Design's contribution: exploit data visualization

<https://shop.winefolly.com>




TRESTA

//system
Material communication
Waste valorisation

Company: Tresta Design
Year: 2018
Country: Germany

As a sustainable design, it transform renewable grape pomace into materials and products that are also biodegradable. The residues that remain in the wine press are combined with natural binders to create a material that is ideal for wine chillers and lights with an appealing appearance, feel and scent.

Design's contribution: process waste valorisation

<https://tresta-design.de/onepage.html#start/>




EXHIBIT AND RETAIL

//service
Product communication
User experience

Company: Astemia Pentita
Year: 2015
Country: Italy

The "Astemia Pentita" is a wine producer that combines tradition with pop culture. The external structure recalls wooden boxes for transporting wine; inside it seems to be in a museum, thanks to the particularly well-kept and extravagant exhibit.

Design's contribution: exhibit design

<http://www.astemiapentita.it/en/>




WINE MATTERS

//product
Raw material valorisation
Systemic design

Company: Ludovica Mattarelli
Year: 2017
Country: Italy

An innovative and sustainable label, created through an handicraft process. The designer reuses some wastes from winemaking process, like rasps and marcs, to create a series of labels strictly related with territory.

Design's contribution: material reinterpretation

<https://ludovicacantarelli.com/about/>




MERAVIGLIA GLASS

//product
Gestual communication
Sensory exploitation

Company: Enosis
Year: 2013
Country: Italy

Blown and worked by hand, designed to enhance the olfactory sensations and to oxygenate the wine. The shape is original: characterized by the insertion of a circular crown, "the ring of Saturn". A glass that is born from the careful study of the invisible perfumes that are released from the wine.

Design's contribution: design the function

http://www.enosis.it/en/14/La_creazione.html?id=/




INNUVA

//system
Raw material valorisation
Waste reuse

Company: Innuva Association
Year: 2015
Country: Italy

The INNUVA association is a non-profit initiative whose goal is the generation of a network of companies / research institutes united by the interest in exploiting the properties of molecules deriving from grape processing waste.

Design's contribution: find new opportunities

<http://www.associazionenuva.it/it/>




1.3.2 Exchanging information and knowledge via webinars

The webinars were the first pivotal moments that preceded the work for the workshops in Japan and Italy. These seminars have played a fundamental role in the elaboration of the research background linked to the studied areas (Yubune and Cella Monte).

The webinar is a seminar or other presentation that takes place on the Internet, allowing participants in different locations to see and hear the presenter, ask questions, and sometimes answer polls.

At the same time, they allowed the exploration of different case studies in the world, related to the enhancement of the territory starting from the raw materials, ranging, as far as the design sector concerned, from the scale of the product to communication, passing from the service to the system level.

Before the first workshop in Japan, there have been three different sessions of webinars, divided according to the different project scale: landscape, architecture and design. For each webinar, students and professors explained previous research: about the relationship between tea, architecture, landscape and design for Japanese; about wine-related to architecture, landscape and design for Italians.

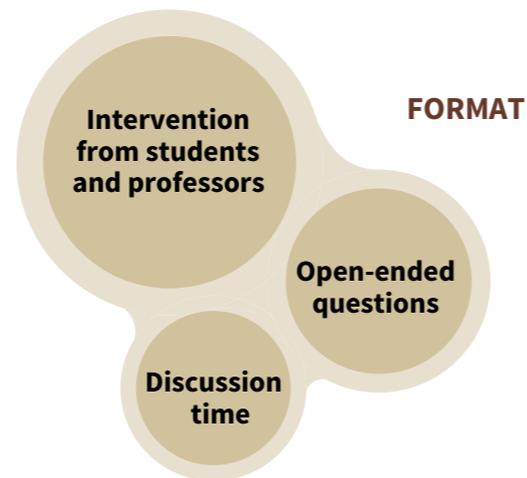
There were several aspects which have distinguished the two main approaches applied by KIT and PoliTo researchers; the first one started to show a general situation of the Uji area

in Japan, and they showed a data overview about tea world in Japan.

At the same time, PoliTo webinars aimed to introduce the methodology the work is based on, and create a general view about the issue of facilities of industry and agri-food sector in the contemporary landscape in Piedmont, introducing several case studies from all over the world.

The following paragraph aims to summarise the main elements highlighted during these webinars from all the project areas.

The webinars order follows the decreasing scale of the project, so we started from landscape analysis, and we continued with architecture and, at least, design.



WEBINAR 1

Landscape

The first webinar took place on February 6th, 2019, and it talked about the landscape related to wine and tea.

KIT presentation

KIT students and professors showed a general analysis about the characteristics of Uji area, with a specific focus on Wazuka, outlined the main issues and opportunities related to that area.

PoliTo presentation

PoliTo presentation assessed landscape values to design strategies and future scenarios, introducing a landscape design methodology useful for possible future interventions related to the Drinkscape programme.

they showed us the architectonic features of tea factories in the Uji area.

PoliTO presentation

The presentation defined the main architectural characteristics of wine areas in Piedmont, and, starting from that, the professors presented a series of intervention not only related to architecture. The main topic they focus on were:

The relation between innovation and conservation among landscape and architecture; which is the model of development for these territories? Which are the possible actions and strategies for enhancing the inner rural areas?

Starting from some research questions, they wanted to suggest some possible intervention for working on, such as:

- *Definition of a mapping system, valid for Japan and Italy, suitable to make explicit the complexity of morphological constraints and the rules that gave birth to the two landscapes.*
- *Production of a set of site-specific design scenarios, based on the local conditions.*
- *Creation of a possible "smart guide" for the development of these territories.*

WEBINAR 2

Architecture

The second webinar took place on February 12th, 2019, and it talked about architectural aspects related to wine and tea.

KIT presentation

KIT students and professors have presented pieces of information and characteristics about buildings in the Uji area, with a specific focus on Yubune Village. They showed us that there is a considerable number of vacant houses identified by Japanese architectural style. After that, talking about tea,

WEBINAR 3

Design

The third webinar took place on February 18th 2019, and it talked about design aspects related to wine and tea, defining the different scale of design: product, communication, services and system. Then, they showed us some objects related to the material culture of the tea world, that we will explain better in the following chapters.

KIT presentation

The design presentation focused mainly on the relationship between the territory and the tourism. The students explained to us some data about tourism in Japan, that is continuously increasing because Japan is investing resources in becoming more tourists-friendly, such as creating English pamphlet and thematic tours.

PoliTo presentation

The design team aims to show the methodology applied to the project with a particular focus on the enhancement of the territory through a local raw material. These case studies showed which are the main points of a project not only related to tangible elements but at the contrary related to more conceptual results. The goal was to present some steps ahead toward the contribution of design in tackling territorial instances working on new visions of tourism, developing and strengthening economies and interconnecting governance policies.

After having defined a global vision on the design approach for the enhancement of the territory concerning the different project scales: product, communication, service and production system; attention has been paid to projects that reflect this approach to the world of wine consumption and production. A series of case studies have been presented up to the definition of some questions aimed at stimulating discussion on the topic:

-What is the design contribution to the enhancement of local heritage?

-What is the role of design in the enhancement of the territory?

-What are the effects of design intervention on local communities?

Thanks to the webinars, it was possible to define a tea and wine scenario, reading some projects, to think about issues and opportunities of these raw materials.

1.3.3 Meta-design dossier as a tool for reading the territory

Before starting booth workshops, a meta-design dossier has been prepared by the students.

Talking about the dossier we have received, it contains the following topic:

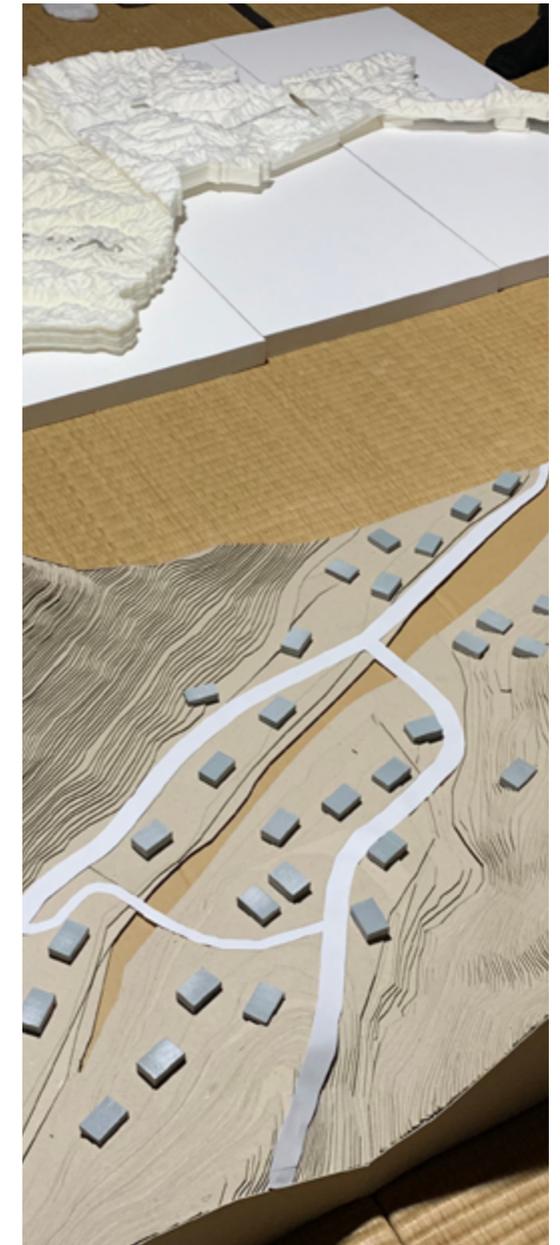
The geography of the area, the history, Yubune, the landscape, the tea factory, production and consumption.

The Japanese dossier contained information both in English and Japanese, and the few schemas are in Japanese only. Those problems made it difficult to read the document.

The Japanese students received the dossiers on the first day of the workshop.

While the Japanese dossier contained some general information about tea, the Italian dossiers have been developed differently. It focused mostly on the intervention area, neglecting the general aspects of the wine world and wine consumption.

Indeed, the Italian meta-design dossier contained lots of maps divided into categories, such as panoramic view, point of cultural interest, hospitality system.



1.4 Workshop in Wazuka

The time we spent in Yubune was necessarily short, but it was defined in this way so that the research group could benefit from just a quick glimpse of the local territory which was the main subject of the research. To deal with this challenge, the main goal was to concentrate efforts on the **definition of a standard methodology of work**, that has been fine-tuned during the workshop.

The first workshop took place in Kyoto, and it started in **February 27th until March 3rd**, the primary purpose was to produce two main general results linked with a draft project for each academic area.

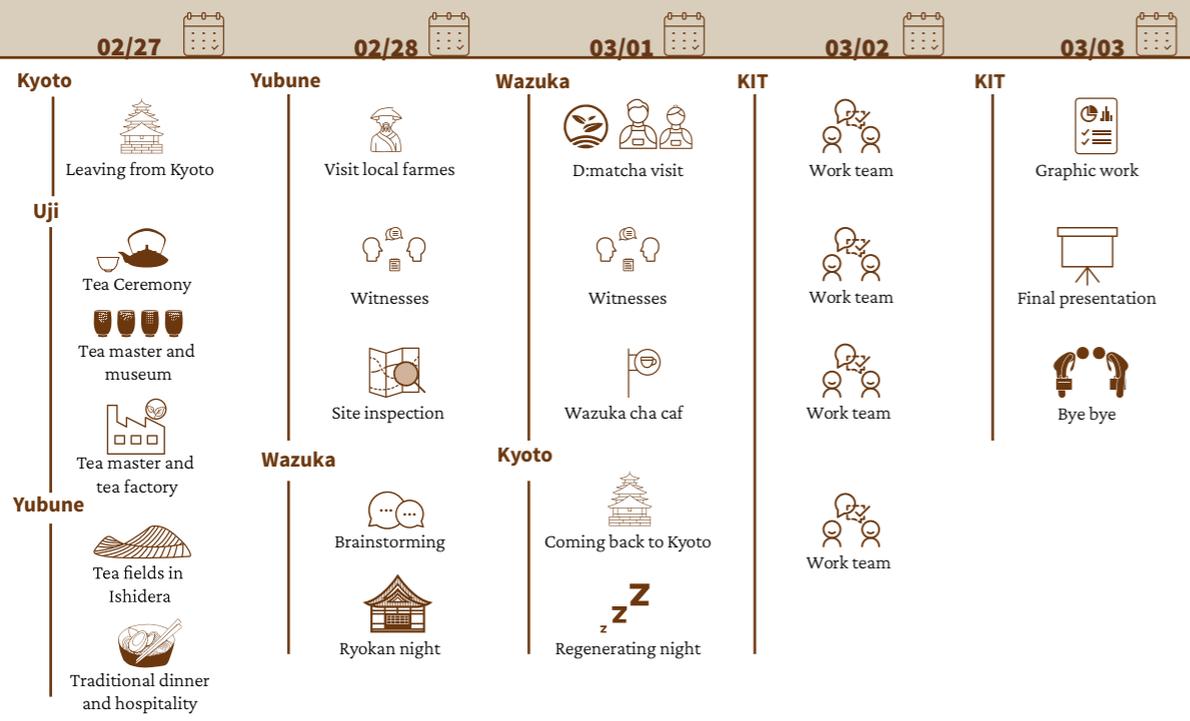
One of the two main results was to develop a map and a perceptive survey of the territory,

to intertwine on one side, the known data: geographical features, the morphological and typological character of architectures and landscape, and the main production activities. On the other side, it should have been developed some non-physical data such as demography, economy, material culture, touristic accommodation.

On the other hand, the other primary outcome was to define a radical **project vision for the future of Yubune**, which allowed to materialise, in a short time, several possible alternative visions about the model of development. That could steer in a more effective way, the territorial analysis described with the other main result about data and maps.



46



1.4.1 Program day by day

DAY 1 - UJI CITY



Takumi-no-yakata - Tea ceremony

During the first day of the workshop, we make a field visit to some activities related to the tea experience of the Uji area. The first experience that we made was a tea ceremony at **Takumi-no-yakata**, where we tasted Gyokuro tea. Talking about Takumi-no-yakata, it was established by the Chamber of Kyoto Prefecture, as a place for training and exchange information about Uji tea, also suitable for a broad range of people.



At Takumi-no-yakata, visitors can relax with a cup of Uji tea while looking out over the Uji River.

Also in the neighbourhood there some World Heritage sites, such as Tale of Genji Museum, Byodoin Temple and Ujigami Shrine and the Historic Monuments of Ancient Kyoto.

The ceremony took place in a little and modern **tea house** in front of Takumi-no-yakata, at that moment we had an interpreter because during the **ceremony** itself, the women who practised the ritual and explained it, did not speak English. We created two big groups, and we made the ceremony led by the tea master and the interpreter.



Tea masters visits

Visit two tea masters: **Koichiro Yamamoto** and **Harumatsu Kanbayashi**. This two visits took place at the tea masters house, one of this two men has a sort of tea material culture museum inside his house, in which we could see lots of objects and tools of the green tea agriculture and **manufacture world**.



Kamikoma Tea Wholesale District

One of the most evocative parts of Uji is the Kamikoma Tea Wholesale District. Along the Kizu River, tea companies have been shipping tea to all areas of the world. We traipsed the quiet streets between hundreds-of-years-old tea warehouses. There were small shops attached to warehouses that are redolent with the odour of freshly roasted tea.



Tea fields in Ishitera

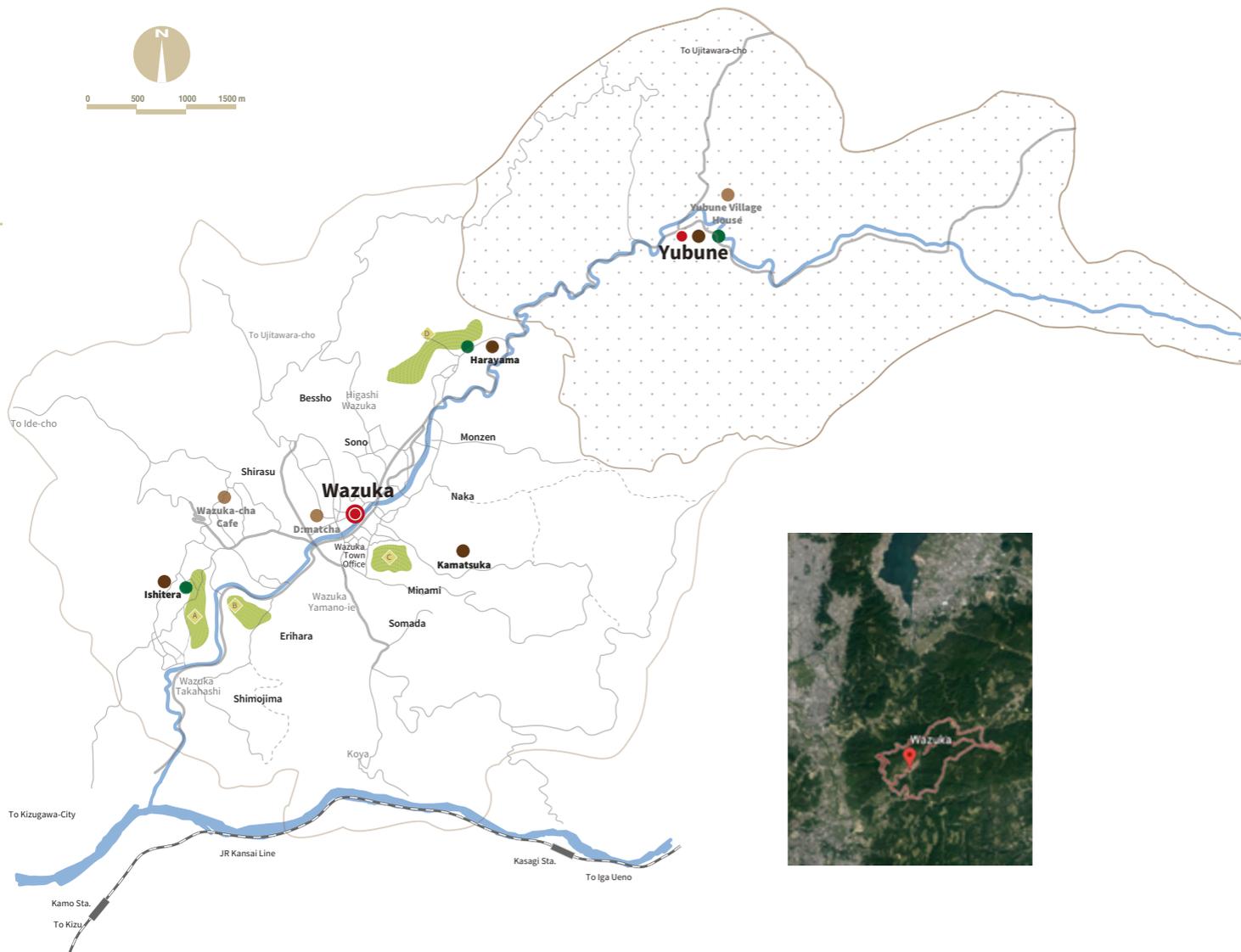
Later, we moved to Ishitera tea district in Wazuka, for visiting **tea farm** and **fields** with a Japanese guide. It is a tea field place which is registered as Kyoto prefecture landscaped property. The tea fields in Ishidera is located at a low altitude and is the earliest place for tea picking in Wazuka. All the hill are covered with tea fields; wherever we walked around, we could see a magnificent view.



We completed the daily tour with a stop to **Kamazuka village**, and then we moved to Yubune. The students' accommodation was the **Guesthouse** of the town. It is a traditional Japanese style house that local inhabitants bought as a place to share with the community and with foreigners.

At the end of the day, and before the dinner, we **shared our impressions** about the full day

of visits, we made a brainstorming among students and professors, starting to think about issues and possibilities about the territory around Yubune. After that, all the group, divided per academic areas, shared the impression about landscape, architecture and design issues and potentialities that they found.



Japanese guest house is a dwelling or part of a private **dwelling** that has been converted for the exclusive use of guest accommodation. The owner usually lives in a separate area within the property. A Guesthouse is a form of lodging similar to **bed and breakfast**. Generally, the guest house is family-run, and the atmosphere is much more **intimate and traditional** than a hotel. Moreover, like in every house, there may be **services shared with other tourists**, like the kitchen, the bathroom, and sometimes the room itself when there are hostel-style dormitories, but this varies from one structure to another.



We had a dinner all together with professors at the **Yubune Guest House**, in a very Japanese traditional way, sitting on the tatami floor, which was the same place where we would have slept for the night.

The name of the dish that we ate that night is called **Shishi nabe** (郷土料理ものがたり), the typical Japanese way of cooking during wintertime.

Before going to sleep, we went to the **public bath** because the Village House has not showers for everyone. Living in a Japanese house has undoubtedly allowed us, foreigners, to dip ourselves in Japanese culture.

Japanese Public Baths In the past, many homes in Japan were not provided with a bathtub. The neighbourhood public bath (銭湯, sentō, lit. "coin hot water") was a **place where** the locals could go to wash, soak in a tub and **socialise with neighbours**. Nowadays, as most houses have their bath, the number of traditional public baths is decreasing, but they can still be found in many **old-fashioned city areas**.



DAY 2 -YUBUNE - WAZUKA

Witnesses and site inspection

The second day of the workshop started in Yubune, in a **local tea farm**, for **interviewing le residents** about tea manufacturing tools and places. We understood some relationship between farmers and local

tea factory managers. We visited a shared space with several tools used in ancient time for making tea, which is part of the material culture of that place.

Once tour guided was finished, each research groups started to go around Yubune area to **read the landscape and the peculiarity of the territory**, which could be useful for the final workshop results. In some cases, students met inhabitants during the site inspection, and

they asked some questions for understanding the village perception from the local people point of view. (We will discuss all this information in Chapter 3).

Wazuka-sou Ryokan

We spent the night in a typical ryokan accommodation in Wazuka.

We made a Japanese style dinner in washoku style (和食), which provided several dishes (with fish, eggs and vegetables) served with rice and hot tea. We also tried the Ochazuke (お茶漬け), the rice made with roasted tea. This typical dish was an exciting experience for tasting tea differently.

The overnight stay provided ample rooms

Ryokan (旅館) is a traditional **Japanese inn** whose style has remained almost unchanged over time. This type of structure dates back to the Edo period (1603-1868). In traditional Japanese ryokan, they only **serve typical Japanese breakfast**.



to share, one of the girls and the other of the boys, with a futon-style bed, like a ryokan. After a brief briefing on the day, before the night, we prepared to take a warm bath in the Japanese bathroom of the structure.

There was an aspect that surprised us, related to the shared bathroom: all the skincare products are made with tea and, inside the hot bathtub, there were also some small tea bags, within tea leaves.

DAY 3 WAZUKA - KYOTO

The last day of field site inspection started with a visit to the municipality tea shop in Wazuka. It was located in a temporary space, next to Wazuka-sou, the Ryokan where we spent the night. Inside this space, we found



different kind of typical meal and tea from Wazuka area. The place had a sharing fun-

Wazuka Cha Cafè is a direct sales office that collects the teas of **Wazuka town producers** who produce about 50% of Uji tea.

ction with all Wazuka community, where the people, tourists and inhabitants, can spend time, consuming local food. This shop brings together all the tea producers, so people can find different packaging according to the tea factory where the tea was packaged.

They moved after a few months into another space for creating a real reference point for the village.

We also visited another innovative space in Wazuka, which base their activities on green tea. The name is **D:matcha**.

The team who manage this activity began with a vision rooted in enjoyment for the unique quality of Japanese green tea and a desire to revitalise a sector threatened by Japan's ageing society. Devoted to developing a personal connection during each step of the tea production process, they are like heirs of masters the art of cultivating and manufacturing green tea.

D:matcha S.r.l
Will become the case study of the systemic project during the research.



DAY 4/5 - WORK AT KIT AND PRESENTATION

Once we completed the field research, we spent the last two days of workshop at KIT Design Lab for developing draft projects related to the aspect that we considered more enjoyable to work on.

The groups were divided according to each project scale:

- **Design:** students from PoliTo and KIT joint together
- **Architecture:** students from PoliTo and KIT joint together
- **Landscape:** students from PoliTo and KIT joint together

Each group have decided to work on a topic which could be more potent for its research area. In the end, the three main focuses of the project were:

- City identity and promotion of site experiences, for design
- Scattered and multifunctional hotel for tourism, for architecture
- Public spaces spread through the area, for landscape

The draft solution projects have been shown during a public presentation to the scientific team which was composed by Italian and Japanese professors, and the students for commenting on the work trying to find some paths to follow for the next steps of the works.



1.4.2 Closing remarks

We were able to see that the entire area of Wazuka has pinpoint problems related to the enrichment of the territory and the development of outdoor activities that people can practice in this area.

It is so possible to sum up with a list of **key points** for drawing some possible food for thought useful for the implementation of the solutions proposed:

1. The Wazuka area has a problem related to the ageing inhabitants, that caused difficulties to pass on the local know-how to young people;
2. There are lots of vacant houses, especially in Yubune, which define a village that looks vacant in its entirety;
3. Despite the Japan Heritage enhancement, people can feel a not taken care environment, from a “promotional” point of view (there are no visible landmarks or a coordinated image of the area);
4. There is a decreasing trend of people in this area, because of the migration of young people to the city centre.

The other **main issues** are related to the green tea production and cultivation sector, which is the raw material case study:

1. There is not a label that tells the origin of the tea, the farmer, to communicate the supply chain elements to the consumer;

2. The supply chain tracking appears very difficult to draw because of the fragmentation of the farmers and the factory owners
3. There are no relations among the villages, no cooperation and collaboration for highlighting the identity of the area
4. According to the enhancement of Wazuka area, linked with Japan Heritage, we established that:
5. The goal and tools for enhancing the landscape are not clear;
6. The maintenance of the infrastructures is poor;
7. There is not a correspondence between the requests of Japan Heritage and the actual situation of the area.

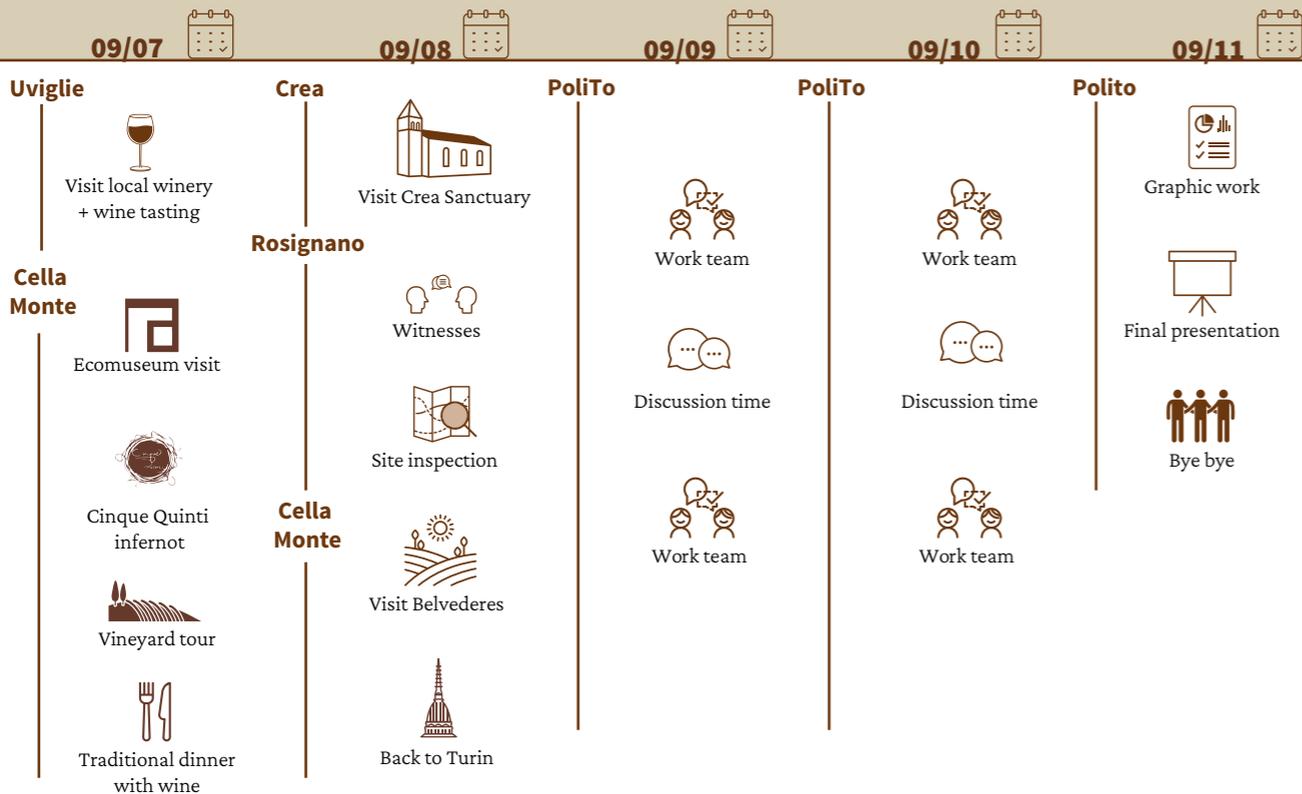
1.5 Workshop in Monferrato

The second workshop scheduled for the Drinkscape program has been carried out in the village of **Cella Monte**, in the heart of the “*Monferrato of Infernot*” (the 6th UNESCO area), from September 7th to September 11th.

While in the workshop held in Japan, where we were free to explore different themes and directions, during this workshop students were directed by the professors to three topics: **paths, the quarries** and **the Village House**.

where we focused on some specific aspects of Cella Monte. Each topic has a relevant value, a cultural meaning and some potentials for enhancing the entire UNESCO site. Furthermore, all the three themes offered the possibility of interaction within scales and disciplines of Design, Architecture and Landscape. The final aim of the workshop was to develop a project focusing on one (or more) of the **proposed themes, within mixed groups**.

These themes have been chosen thanks to the previous analysis needed for the webinar,



1.5.1 Program day by day

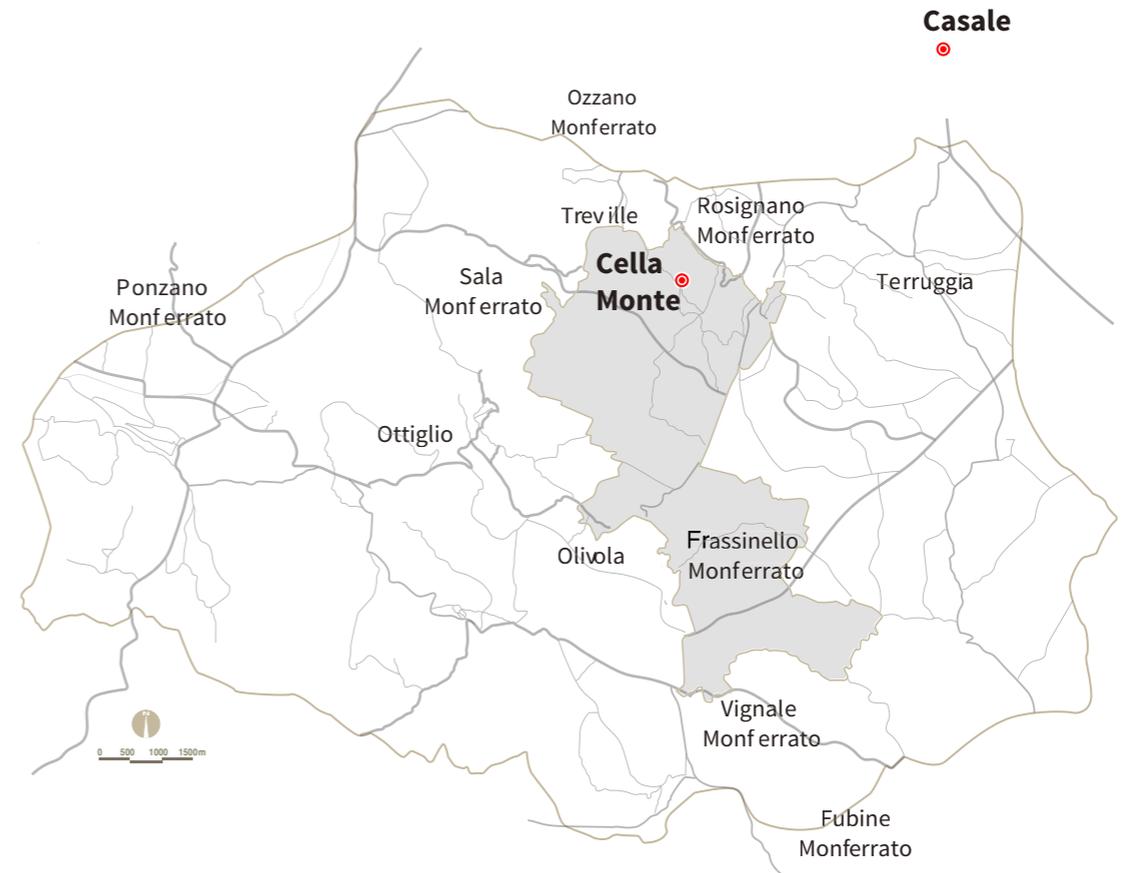
DAY 1



Ecomuseum, quarries and wine tasting

The first day of the workshop wanted to explore the area and the actors around it. First of all, we visited a winery in **Castello di Uviglie** and the quarry where the same owner store all the bottle of wine produced. One of the most significant aspects is that the quarry is massive, quite cold and dark so the wine can age better. Then, we transferred to **Cella Monte** for visiting the **Ecomuseum** (more information in paragraph 2.2.5) of the pietra da cantoni.

As the director explained to us, the Ecomuseum is an institution which includes a part of the territory, ways of life, traditions and ensures their enhancement, linked to the **pietra da cantoni**. Inside the Ecomuseum, there is a kind of underground wine cellar, called Infernot (more information in paragraph 5.3.2).



Before having lunch, we went to the concert and exposition hall, which is inside a deconsecrated church. Then, we visited a building included in the third theme of the workshop, a building that the municipality wants to reuse as a **Hostel and Village House**. Indeed, the theme is related to the role of functional recovery to boost tourism activities and or to assume a specific role for the local community, such as for information, for events, for services.

After a typical Piedmontese lunch, we went to the **“Natural Amphitheater”** quarry, which is an open space used as a stage for concert and events. It is located near the **Church of San Quirico**, on this site the Jazz Refound festival was recently organised.

The design focus was on public accessibility in safety, the reuse of the quarry, the provision of facilities for passive and active recreational activities and its integration into the network of existing routes and paths. Besides, the potential reuse and accessibility of the galleries

Pietra da Cantoni is a typical **sandstone** in the area of Basso Monferrato. Over the centuries, it has been used, both in the artistic field given its friability both in the field building given its resistance. It gave a value **remarkable landscape** in the Basso Monferrato, with its peculiar yellowish colour. It was dug up from close **quarries**, that are nowadays inactive.



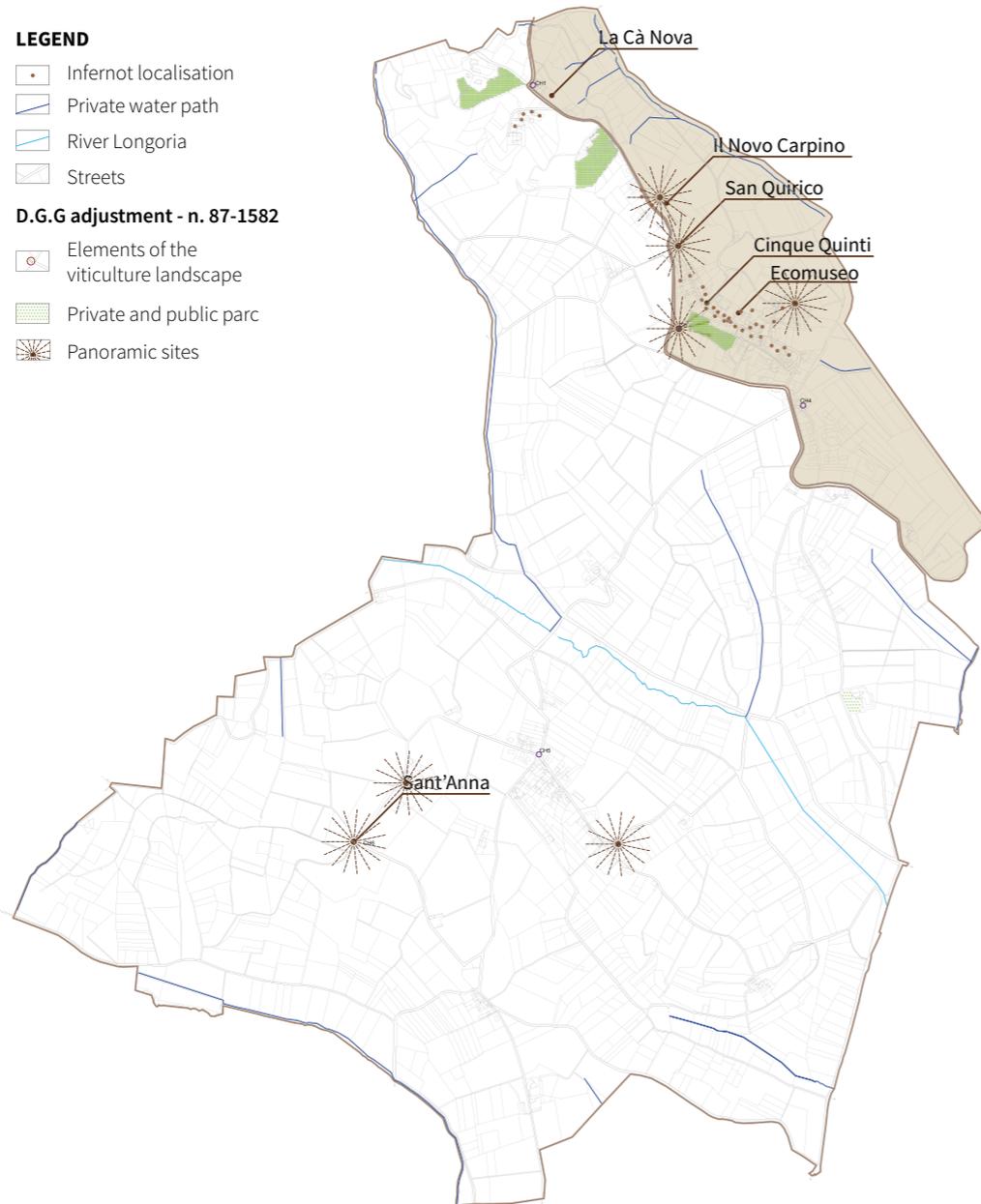
PRGI Cella Monte with sites visited during workshop

LEGEND

-  Infernot localisation
-  Private water path
-  River Longoria
-  Streets

D.G.G adjustment - n. 87-1582

-  Elements of the viticulture landscape
-  Private and public parc
-  Panoramic sites



of pietra da cantoni quarries remain to be verified.

Then, we moved to **S. Quirico Church**, that offers a particular point of view to Rosignano



Monferrato. Later we visited the company called “Cinque Quinti” whose owners explained us their familiar production focused on quality instead of quantity. They showed their Infernot that is directly linked with the storage room. We finished our research day visiting “La Cà Nova” vinery with an Infernot, where we had Km0 dinner and drank wine produced by them.

DAY 2

The second day focused on the second theme, which was related to **paths and footpaths**. We explored the possibility of connecting different elements spread in the landscape in a cohesive network.

Indeed, one aim was to identify physical and visual connections, to increase the legibility of the agricultural structure, through the systematisation, **communication and promotion of territorial identity** (cellars, caves infernot, casot, vineyards, castles), enhancing their potential from the recreational point of view, and to evaluate their possible integration with singular elements.

So, firstly we went to the **Sanctuary of Crea**, which is a UNESCO site as “*Sacri Monti of Piedmont and Lombardy*”. This holy place is composed by the Sanctuary itself and by lots of chapels inside natural caves. There is a pilgrimage route for reaching all the chapels that offer a panoramic view.

Then we went to the **Belvedere of Sant’Anna** in the **hamlet of Coppi** in Cella Monte— where the small church of Sant’Anna, partially

restored, is located – is officially identified as one of the vantage points from where to enjoy scenic views of the entire area.

The theme related to paths also included a reflection on the ***accessibility and the enhancement of the view point's potential*** as a tourist-cultural asset, because of the role of the landscape as a place of enjoyment, contemplation and fruition.

DAY 3-4-5, VALENTINO CASTLE

We spent the last days of the workshop in Turin, at Valentino Castle, where we worked for designing the final projects. We divided into three mixed groups (concern nationality and field of studies *as you can see at page 35*), and each group focused on a different theme.

The last day all the groups showed the final project, as a result of the collaboration among the students and the Italian and the Japanese professors gave their suggestion for implementing them.



1.5.2 Closing remarks

The field research gave lots of hints for developing the final projects; the following list shows some of the useful vital elements for future projects application.

- The quarry could be an interesting landmark or a tourist place because of its impressive dimension and ambience.
- S. Quirico Church is an interesting point too, because of the presence of the gardens, the playground, the panoramic view.
- The Natural Amphitheater does not seem suitable for its purpose; However, If there were no trees, it would be a great viewpoint.
- The signs are written in Italian, and it is a problem for foreigner tourists.
- All the accommodation facilities such as B&B, restaurant, are closed during weekdays.
- The area itself has a big problem related to the promotion of the territory: Monferrato is less known for the wine than the close Langhe, for example.
- Some wineries have vineyards outside their municipality, so there are networks between the owners.
- The social cellar is a support for small businesses.
- The infernot are private places, so it is necessary to arrange with the owners before visiting them.
- The Ecomuseum offers information about material culture, but it is not a valued place.

1.6 Final results

The following paragraphs will describe the final results reached after the two workshops, describing the primary goal of each of them, but focusing on the work of the design students.

1.6.1 Yubune

The **landscape group** started describing the **fragmentation of the territory** around Yubune, comparing it with a larger one, the territory around Harayama. The landscape of Yubune appears more fragmented in terms of areas of tea field, rice field, urban and neglected areas. After that, they focused more on the village of Yubune: the Wazuka river results fundamentally for the territory: it provides in the southern part a fishing area, it divides the villages into four different spaces widening the view. In the end, they provided a set of places suitable for **becoming public places** where people can meet and make activities together.

The **architecture group** deeply analysed the conservation **state of the buildings**, diving them into three categories: abandoned houses, neglected house, and the new one. Most of the houses look neglected: this is a big problem to solve for enhancing the village. Architects must deal with the restrictive rules of restoration that do not allow to make significant changes to the buildings.

Then, they analysed the **viability, the paths and the accesses**, showing that is quite fragmented due to the slopes. Their final idea wants to develop the village thanks to the creation of leisure spaces like gardens and shared

crops, boost up the Village House as a Ryokan and finally transform a neglected house into a **tourist shop** and **info point**.

The **design team** made a general analysis of the materials, the buildings, the atmosphere and nature around the area. We also deal with the **Japanese labels** concerning the territory, such as the “Japan Heritage”, the “Discover Premium Green” which aims to create a large exchange area becoming a significant base for tea culture, “The Most Beautiful Villages in Japan” and “The Kyoto Scenic Asset” that wants to promote the local landscape and the town planning. We also found some problems, like the lack of identity for Yubune tea, the lack of qualitative labels for products, the lack of young people, the presence of vacant houses, the absence of landmarks for visitors and guided tours, and finally the lack of cooperation among farmers.

Despite the problems, we can find lots of opportunities to exploit, like the forest park, the tea plantation along the river, the traditional architecture, the quiet atmosphere, the forestry industry, the beautiful landscape. We tried to answer the question of how to enhance all.

Many suggestions are suitable for Yubune. For example, it could be a good idea to create an **eco-museum** with interactive activities where buying merchandising items. Also, exploiting the abandoned house for creating a **scattered hotel**. Some experience could be done in Yubune as well, such as tea tasting, tea ceremony, tea filed tour.

The design team’s main goal was to design strategies and tools to enhance the fruition and the **identity of the village**. The main target were responsible foreign tourists, sporty people and Yubune residents, while the main promoters were the existing associations and organisation and obviously the municipality of Kyoto. Starting from all this, we created a

logo that distinguishes the Yubune identity. The logo is made by a Y shaped as the Wazuka river, and also it reminds the shape of the tea leaves with the Gestalt rule. A second line cross along the Y, symbolising the tea plantations. The pay off is “Yubune experience, tea, culture and sport”. Finally, we thought about packaging with the double function of a map.



1.6.2 Cella Monte

The final works of the Cella Monte workshop were exhibited on the last day as in Japan. Each group focused on a different theme.

The first group focused on **viewpoints**. The main point was to understand why panoramic viewpoints are critical and find unique elements and common elements. Also, it is essential to understand what people can see from each perspective: settlements, nature, linear structures. The final goal was to design a **new way to experience the landscape and connect with nature**. The viewpoints can be exploited as touristic attractions, creating new touristic experiences. After the analysis of the essence of the landscape, that is mostly composed as a mosaic, the group analysed the significant viewpoint in Cella Monte: Nuovo Carpino, Sant'Anna church and San Quirico church. Each of them offers some services like a park, benches and tables, fountains and parking lot. There are problems related to the viewpoint as well, as trees that block the view, unnecessary plants around the border of the park, few signposting.

So, the main goal of the project was to enhance viewpoints telling the essence of the territory, with attention to preserving the identity, taking inspiration from traditional buildings, creating a new flexible structure for each viewpoint where tourists but also locals could get information but also relaxing.

The structure can create **frames and guide the view**, cover sound and protect, and use interactive and multisensory tools to give in-

formation. The group defined a **masterplan**: provide some guidelines and direction to improve the viewpoints in the Cella Monte area by enhancing the experience of perceiving the landscape, strengthening the connections between the viewpoints by giving them an educational role, providing a better understanding of the landscape both for tourists and local people. First, it is necessary to create a landscape preservation and maintenance plan, that includes the schedule clearance of the blocking elements from the view (trees, benches...), the balance the on-site services and the scenic values. It is necessary to follow all the regional regulation about buildings and colour and preserve the hiking path in the area without upset them with external elements. Second, the masterplan wants to create spaces for relaxing, connecting with landscape and gaining knowledge, enhancing the connection between designed destinations, through collecting information and "tokens" (stamps, postcards...), which give information about the history of the settlements, vegetation, local architecture. Finally, the masterplan creates a common language/corporate image for the panoramic views, using colours and textures linked with the area, for example.

The final proposal is a movable structure that converges sound and frames the landscape with inside some transparent boards. The users can enjoy the view, playing with them and learning some information about what they are seeing.

The second group focused on the area called the amphitheatre, but it did not reach a project.

The last group worked on the **requalification of the village house**. The first impression that tourists have while they are reaching the Village House is that there is not a good view of the landscape. The **accessibility on the site** is quite simple because the main road is crossed by car in both directions. People who reach Cella Monte by bus have to go to the Village House on foot because the buses stop in the Nuovo Carpino square. The Village House is not much visible; the most exposed corner of the building is not on the main road. The facade is visible from the street, that is not conformable and safe choice, or from the opening space near the shop close to it.

The new function of the Village House could be different. First, connect people, tourists, winemakers, locals, but also other villages; second, sharing information, local know-how and equipment. Finally, creating experiences linked with the local culture such as wine tasting and guided tour. The target of the project is national and international tourists, occasional or local tourists, locals.

The project on Village House aims to connect the independent spaces of the building, attract people from outside, develop a hub for the wine tasting, and also make the building accessible for people with physical diseases. The three floors have different functions, as follows:

-Ground floor: shop's hub accessible through the main door; the window becomes a showcase.

-1st floor: reception and info point space.

-2nd floor: municipality meeting place

The facade is used as a communication space for the people.

The wine tasting hub will host local winemakers and new winemakers: the sharing place allows to create events during the year for promotion.

The wine selling point will promote the products of many local wineries. Now people can buy the wine in the wine shops, on internet, in the wine bar and manufactory winery. The selling Hub merges all the shops, so visitors can buy typical food and wine as merchandising or souvenir.

The project of the Village House expects to **connect two close buildings** that are separated without any physical connection, creating Hub and the Hostel and cafeteria. A still covered lift will connect the two buildings, making them accessible for wheeling chairs. The use of steel material creates a sense of opening and inclusion inside the courtyard between the buildings.

References

Quotes

1. <https://whc.unesco.org/en/about/>
2. <https://whc.unesco.org/en/criteria/>
3. <https://japan-heritage.bunka.go.jp/en/about/index.html>
4. Bistagnino Luigi, Celaschi Flaviano, Germak Claudio, Uomo al centro del progetto. Design per un nuovo umanesimo. Umberto Allemandi & C., Torino, 2008, 63

Bibliography

Bistagnino Luigi, Celaschi Flaviano, Germak Claudio, *Uomo al centro del progetto. Design per un nuovo umanesimo*. Umberto Allemandi & C., Torino, 2008

ICOMOS, International Scientific Committee on Cultural Landscapes, *Vineyard Landscape of Langhe-Roero and Monferrato (Italy)*. No 1390 rev., 2013.

Comaschi Gianfranco with Associazione per il Patrimonio dei Paesaggi Vitivinicoli, *Valorizzare un Patrimonio UNESCO. Il primo progetto finanziato con la Legge 77/2006 nei Paesaggi Vitivinicoli del Piemonte*, 2016.

Web references

<https://ich.unesco.org/en/RL/washi-craftsmanship-of-traditional-japanese-hand-made-paper-01001>

<https://japan-heritage.bunka.go.jp/en/news/article17.html>

[https://en.wikipedia.org/wiki/Historic_Monuments_of_Ancient_Kyoto_\(Kyoto,_Uji_and_Otsu_Cities\)](https://en.wikipedia.org/wiki/Historic_Monuments_of_Ancient_Kyoto_(Kyoto,_Uji_and_Otsu_Cities))

<https://www.japan-guide.com/e/e2074.html>

<https://www.paesaggivitivinicoli.it/patrimonio/il-monferrato-degli-infernot/>

<http://ochanokyoto.jp.e.aav.hp.transer.com/nihon-isan/>

<http://www.kyototourism.org/en/sightseeing-info/103.html>

https://it.wikipedia.org/wiki/Guest_house

[https://en.wikipedia.org/wiki/Ryokan_\(inn\)](https://en.wikipedia.org/wiki/Ryokan_(inn))

<http://www.wimubarolo.it>

<http://www.monferratopaesaggi.org/>

<https://shop.winefolly.com>

<http://www.astemiapentita.it/en/>

http://www.enosis.it/en/14/La_creazione.html?id=/

<https://tresta-design.de/onepage.html#start/>

<https://ludovicacantarelli.com/about/>

<http://www.associazioneinnuva.it/it/>



2

TEA AND WINE

*Products with common
features for the territory
identity*

2.1 Opening information related to historical, cultural and economic matters

The following chapter explains how come the production supply chain has been so important to **identify a specific area**, region or an entire Country. **Italy** and **Japan** are famous all over the world for the production of **wine** and **tea**, and the productions themselves have profoundly influenced the history of the territory, from the economic point of view to the daily routine of the inhabitants.

2.1.1 Tea production in Japan

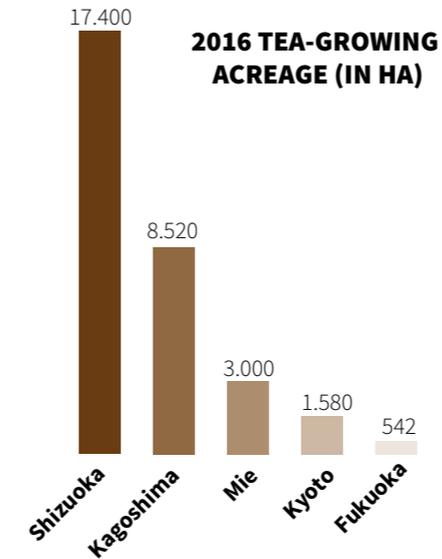
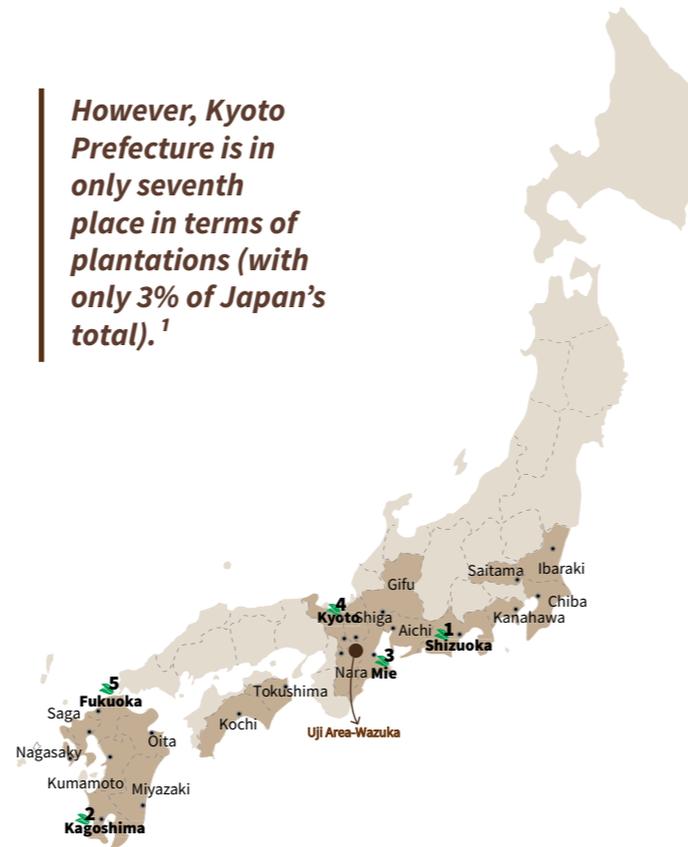
Tea is produced in Japan on almost all of the territory, and the industrial scale of crude tea is about **JPY 100 billion**.

Major tea-growing regions are:

1. Shizuoka,
2. Kagoshima,
3. Mie,
4. Kyoto,
5. Fukuoka.

The **top-three prefectures** constitute about **70% of the total tea-growing** acreage in Japan, for an amount of **80,200 tons** of processed but unfinished tea leaf. The increase was in bancha production, not shaded tea production despite the growing demand for matcha. All other categories saw a slight decrease. Shizuoka Prefecture is the leading tea-producing area in Japan. Around 40% of Japan's tea plantations are in Shizuoka. Shizuoka and Uji in Kyoto Prefecture are also the best-known tea-producing areas.

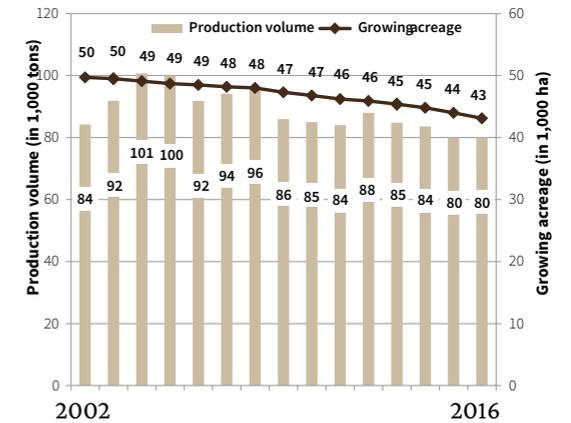
However, Kyoto Prefecture is in only seventh place in terms of plantations (with only 3% of Japan's total).¹



The second-largest tea-producing area in Japan is Kagoshima. It accounts for 20% of Japan's plantations. Kagoshima tea is growing in popularity thanks to the use of many different tea plant cultivars, which allows obtaining a wide range of different flavours. The widespread Japanese tea, sencha, is produced everywhere tea is grown. However, almost all gyokuro is produced in Kyoto (Uji tea) and Fukuoka (Yame tea). Mie Prefecture (little known despite being the third-largest tea-producing area) specialises in kabuse-cha. Tamaryoku-cha is mostly produced in Kyushu. Of course, the land and soil in each area influence the tea's flavour, but production techniques and cultivars are also decisive factors at the origin of the wide variety of flavours and fragrances of Japanese tea.²

“Uji tea” is not produced in the city of Uji only, but it includes the whole Kyoto prefecture. The history of Uji tea is long, and it is considered the centre responsible for the tea culture in Japan³.

CHANGE IN TEA GROWING ACREAGE/ PRODUCTION VOLUME



Growing acreage is declining slowly.

After picking up in 2004 when the production volume exceeded 0.1 million of tons due to increased demand in green tea beverages, tea production volume has been on a decline. In recent years, production volume is around **0.08 million of tons a year**.

the number of farms has

halved

in 15 years
(per person, the ha doubled)



the production volume and the ha of the fields have decreased

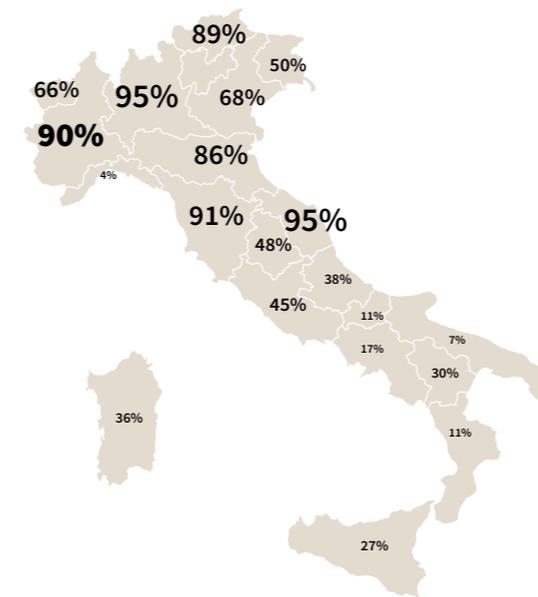


2.1.2 Wine production in Italy

Italy has always been in favour of growing grapes. Passion and tradition, technology and advanced systems in the vineyard and the cellar, have contributed to bringing some Italian wines into the **world elite**, but what must give even more satisfaction and give hope for the future is the qualitative improvement of the whole production, with a definite rise in the average level. Not only, therefore, few stars that shine in the firmament of world oenology, but a production base of absolute value.

The wine sector has **over 310,000 companies** operating in the agricultural sector and more than 1,800 companies active in the industrial transformation process. With data updated in 2017, the sector employs approximately **13,000 people on an industrial level** and generates a **turnover of around 10.4 billion euros**. In the context of the Italian food industry - one of the pillars of the national economy with a turnover of 137 billion euros, of which about 33.9 billion in exports, about 62 thousand active businesses and over 465 thousand employed - the wine sector stands out as one of the primary realities. The sector accounts for **9.5% of the total value of agricultural production**, **7.6% of the turnover of the food industry** and **14.6% of the national agri-food export**.

DOP wine % in Italian regions - 2017



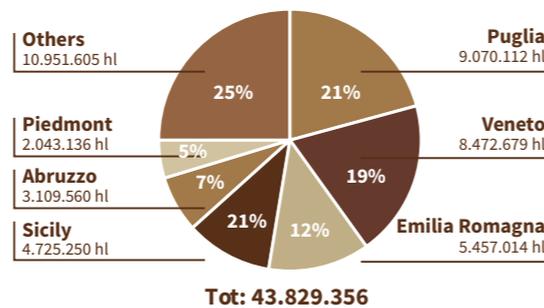
As happened in recent years, the most crucial goal that Italian viticulture has to pursue is that of **constant quality improvement**, without losing sight of the aspect of the price of wines, in order to maintain good competitiveness also on international markets.

Italy's turnover of wine is around 15 billion of euros, but the most significant aspect is that one-third of the production is exported, contributing, with almost 5 billion of euros, to partially heal the liabilities of the trade balance with foreign countries.

Piedmont region is the sixth region according to amount production, but second for the wine certification.



Top six region for wine production - 2017



Top 10 wine DOC DOCG production - 2017

2.2 The role of the landscape: *terroir* concept

We can find of Wikipedia an easy and direct definition of **terroir**: “it is the set of all environmental factors that affect a crop’s phenotype, including **unique environment contexts**, farming practices and a crop’s specific growth **habitat**. Collectively, these contextual characteristics are said to have a character; *terroir* also refers to this character.”¹²”

The **terroir** is used in some food and beverage artisanal industries, and each has varying definitions of what *terroir* means. Some of the artisanal crops for which *terroir* is studied include wine, coffee, tobacco, chocolate, chilli peppers, agave (for making tequila and mezcal), hops, wheat, maple syrup, tea, and cannabis. So, *terroir* is connected with the relationship the geographical region of an agricultural product (quality, taste, style) and its characteristics. The area influences these characteristics.

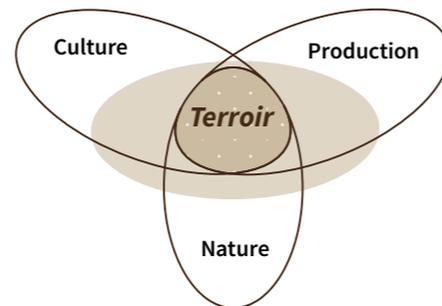
The concept of *terroir* is used to explain the hierarchy of high-quality wines. It can be defined as an **interactive ecosystem**, in a given place, including climate, soil and the plantations.

The idea of *terroir* is wholly **linked with agricultural production**. Indeed, agriculture is also the reflection of the **natural conditions** and the ways humans work with them.

The *terroir* has a robust cultural side; it is the **reflection of the human societies** that work its land. Different communities produce different *terroir* with the same territory. Making the most of one’s area is the common goal of

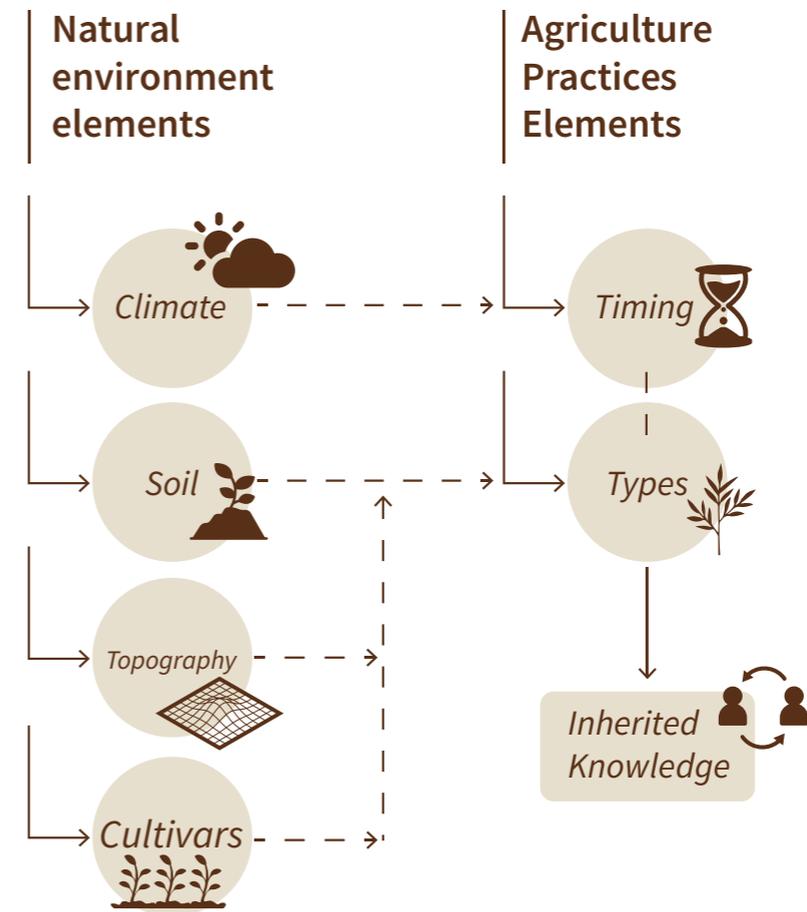
farmers and the heart of the notion of *terroir*.

The constant use of the term *terroir* from the beginning of modern agronomy emphasises the relationship between a **physical environment, rural life, and local production**.



It is essential to underline the definition of *terroir* given by **UNESCO in 2005**, in order to understand the relationship with cultural landscape concept:

“*Terroirs* constitute a responsible alliance of man and his territory encompassed by know-how: **production, culture, landscape and heritage**. By this token, they are the fount of great human biological and cultural diversity. *Terroirs* are expressed by-products, typicality, originality and the recognition associated with them. They create value and richness. *Terroir* is a **living and innovative space**, where groups of people draw on their heritage to construct viable and sustainable development. *Terroirs* contribute to the response to consumer expectations in terms of diversity, authenticity, nutritional culture and balance and health¹.”



2.2.1 Tea terroir

In *tea cultivation*, climatic conditions of a specific area in Japan played a very significant role not only to achieve favourable harvest yield and quality but also contributes to the desired distinctive characteristic of the tea products.

There are many tea production areas throughout Japan as we said in previous section (2.1).

Different climate conditions and soil composition give rise to an array of various flavours and landscapes of green tea.

The most important and known regions are:

- **Shizuoka:** the largest Tea Region in Japan
- **Kagoshima:** the nutrient-rich Tea Region
- **Gifu:** the active Tea Region
- **Chubu - Aichi:** the matcha tea Region
- **Kyoto - Uji:** The Original Tea Region

The quality of the *terroir* is a determining factor in the flavour and character of a tea. Because the sea is never more than 120 km away from the Japanese islands, the sea air gives iodised flavours to the leaves and a marine aroma suggesting seaweed and fresh grass.

However, as we will see later, processing methods also contribute to the teas' distinctive flavour. In Japan, we can find tea plan-

tations from the northern areas to the south. Generally, the climate, where tea plantations are based, is colder there than in the rest of the archipelago, 10 to 18°C, and annual precipitation can be up to 1,500 mm.

Another important and significant factor which influenced tea terroir and production in Japan is the *space*. If we talk about two main production areas like Japan and China, Japan has a *minuscule land surface* in comparison to geographically giant China. To face up for this lack of space, Japanese tea growers use *technology*. Tea fields are meticulously kept in tight rows and leaves are machine-cut instead of hand-picked. Japanese tea growers also shade grow their plants.

Some Japanese green teas, like Uji Gyokuro, are kept in the shade for two weeks. This technique produces a darker leaf colour and more profound, more vibrant flavours. Shade growing is limited to small sections of tea fields, so shade-grown teas tend to be much more valuable.

TEA TERROIR IN UJI

Kyoto is where *Buddhist monks* developed their *appreciation for the tea* they brought from China. Consequently, the Kyoto tea region, Uji, benefits from a long history of expertise and skill. New processing methods for Sencha and Gyokuro (speciality green tea) have been developed in Uji since the Edo period (1603-1868)¹⁴.

The *climate is fundamental*: foggy, misty mornings protect the leaves from frost, the enemy of the tea plant. In this ideal weather, the soil is well-drained and aerated. Consequently, an intense flavour, rounded sweetness and pleasant aroma are brought out in the tea.

In Kyoto Prefecture, where the river Uji descends from the mountains, the Uji region is ideally located for green tea production.

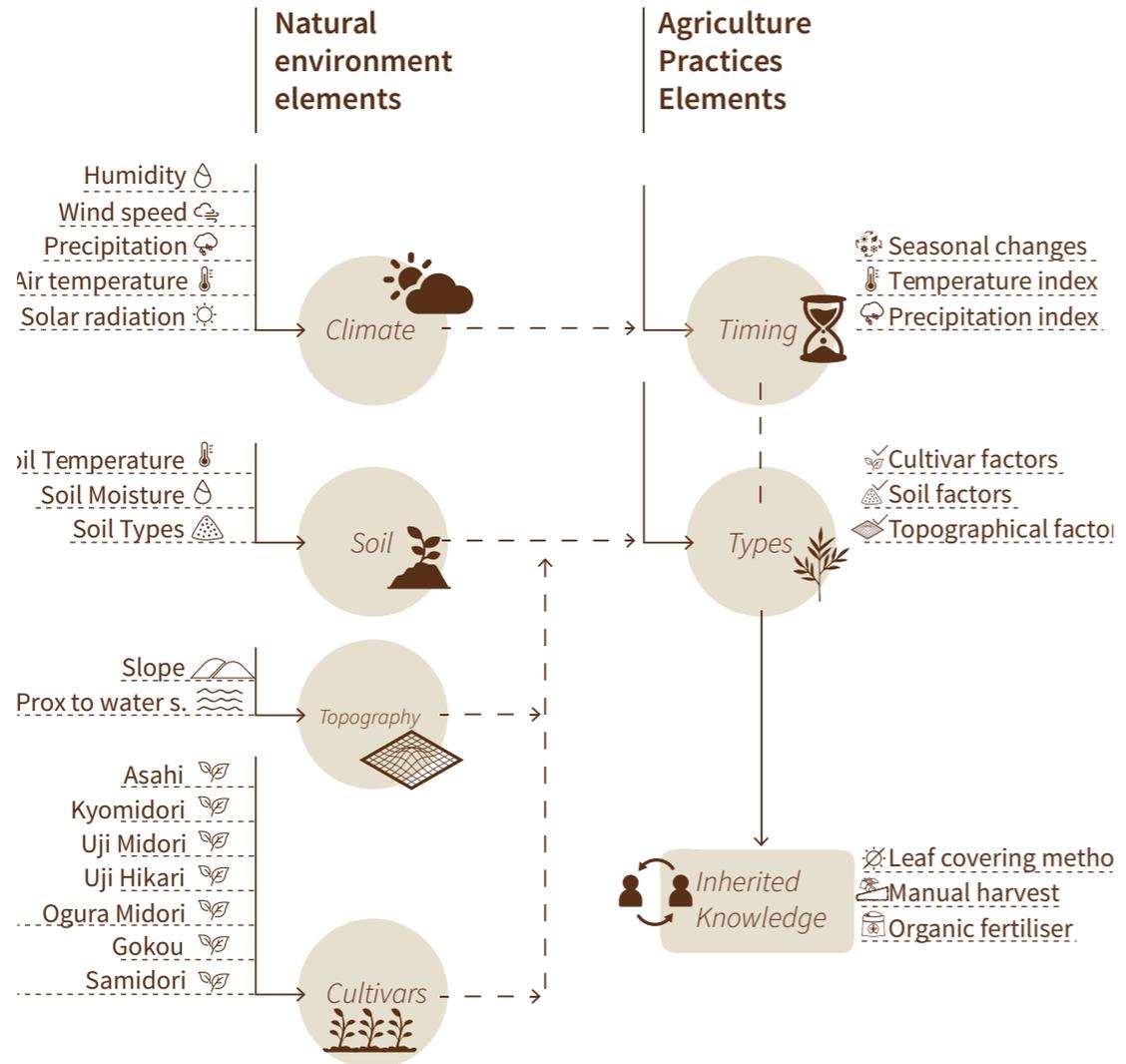
As Uji Area is the oldest and most famous green tea producing region in Japan, most of the tea farmers in the area have been cultivating tea for hundred years over several generations.

Throughout generations of tea farmers, the characteristic of Uji area *terroir* has been carefully observed and incorporated in the cultivation practices, thus gave birth to the unique characteristic of Uji tea products. This know-

ledge then accumulates into *traditional agriculture know-how*, which is passed down through generations of tea farmers.

Knowledge of environmental conditions is generally passed down through generations of farmers, and it often includes information on past environmental conditions as it describes the methods to adapt to the conditions. Accumulation of knowledge on *seasonal agriculture practice* and the understanding of local *terroir* condition are significant for tea farmers in order to produce tea products that can retain their family tradition¹⁵.

One of the troubles that many scientific experts say is that *terroir* has to face up the climatic changes and the extreme temperature fluctuations which have been occurring more frequently with evidences of continuous increase in its intensity. Direct effects of these changes are especially felt by the agricultural industries especially those which are utilizing the natural environmental elements, such as the tea cultivation in the Uji Area.



Picture of Uji fields

2.2.2 Wine terroir

The wine *terroir* involves the land and climate where the grapes are grown. So, the grape has unique characteristics into the grape that could not be imparted by any other region of the world.

Planting a new vineyard creates a small ecosystem, in which the vine, soil, microclimate and cultivation techniques must interact correctly to achieve the best results, clusters of grapes rich in colour, sugars, extractive and perfumed substances, which will express themselves in wines of all types, white and red, light and structured, to drink young and ageing, still, sparkling and sparkling wines. Also, the quality in the vineyard is determined by the choices made when it is decided to plant a new vineyard.

The French have always tried to favour and reward the so-called *terroir*, a term that refers not only to the composition and structure of the soil but to everything related to the environment, climate and microclimate. All this is expressed even more specifically in the concept of *cru*, that indicates a single vineyard with its particular characteristics, but in some wine regions, the concept is extended to a *territory* to include an entire village, where the combination of climate, soil and other conditions determines the particularity of the production. Currently, it is also used in olive growing and other kind of agri-food sectors.

In Italy, there is a tendency to favour this type of choice, which is made explicit in the **Protected Designations of Origin (DOC)**. The situation is different in the countries that only in recent decades have gained importance in the world of world viticulture, such as California, Chile, Argentina, Australia, South Africa and New Zealand, where the greatest attention is focused on the vine, a concept expressed in the term varietalism, with a clear and explicit meaning. As always, perhaps, the truth lies in the middle, because only the perfect **integration between the grape variety and the territory can guarantee the originality and typicality of the wine.**

Depending on the latitude, the European Community divided the territory into wine-growing areas corresponding to those in the north, centre and south (N, M, S = north, medium, south) and the land in different categories, based on the different viticultural vocation. Italy is in a privileged position, with sunny areas and many lands suitable for the production of quality wines (category 1), located above all in the hills and mountains.

About 60% of the viticulture takes place in the hills, 32% in the plains and only the remaining 8% in the mountains, where cultivation is complicated.

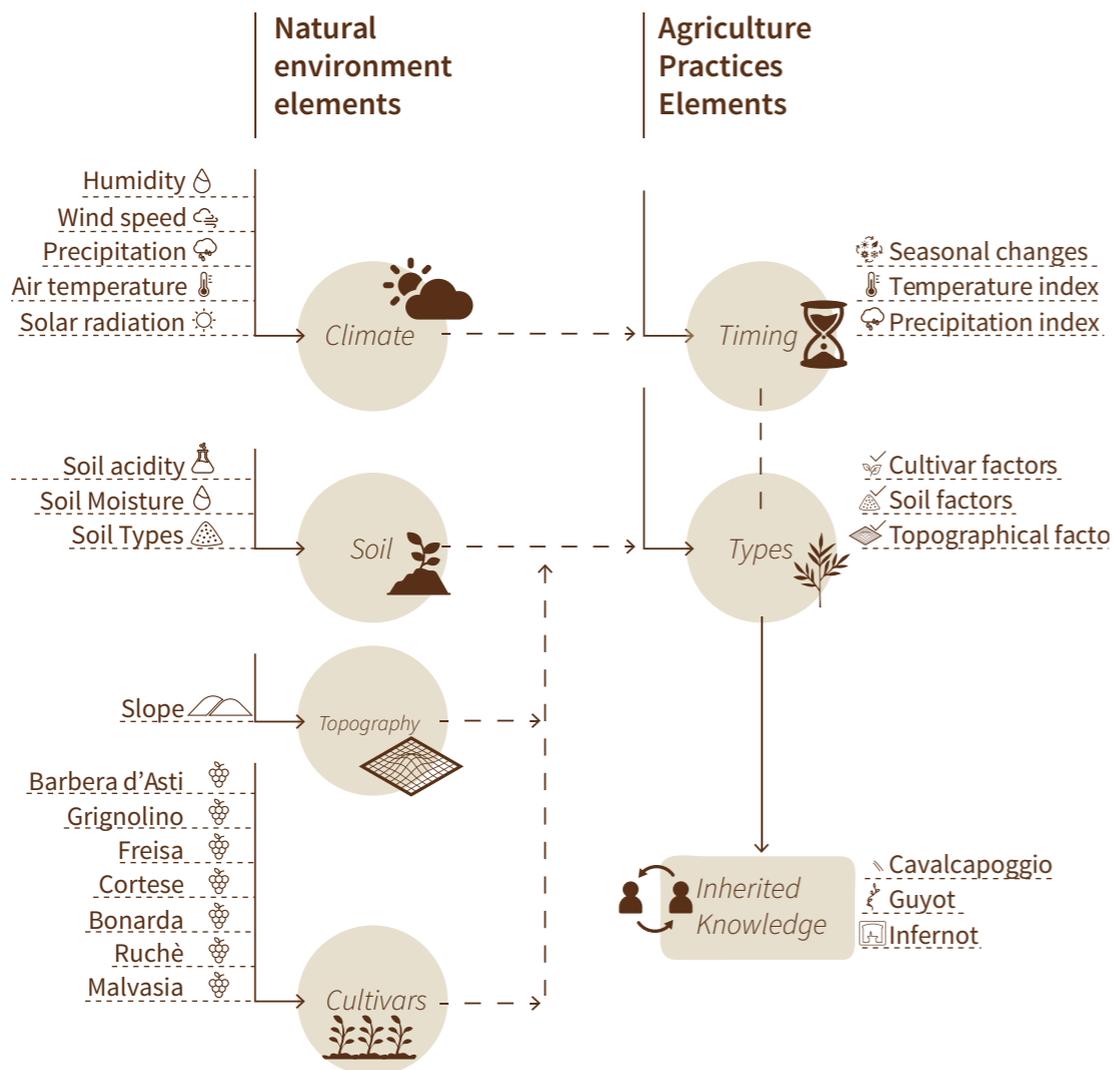
The cultivation of grapes destined for the production of Certificated wines (DOC and

DOCG) is mainly distributed in the hills and the mountains, even if there is a significant increase in some productions with a Protected Geographical Indication. The **hilly slopes**, in fact, guarantee **the best conditions** of insolation and brightness for the leaves of the vine, in which chlorophyll photosynthesis allows the formation of sugars. The vine needs light (20,000 lux) and heat, with temperatures between 25-28 ° C.

Excellent results, all the more reason, are obtained on the steep Valtellina valleys, on the Alpine valleys of Valle d'Aosta and on the sunny terraces of the Cinque Terre, which compel viticulture still defined today as heroic. Here everything gets complicated because the cultivation of the vine and the grape harvest must be done almost exclusively by hand.

WINE TERROIR IN VINEYARD LANDSCAPE LANGHE-ROERO MONFERRATO

Piedmont region is one of the Italian regions with the highest quality wine production: wine in Piedmont is not only an alcoholic drink to drink as an accompaniment to meals, but it is also culture and tradition deeply rooted in the territory, experience and knowledge handed down from generation to generation. However, above all, Piedmont is the maximum expression of the variety of the territory and the perfect and sought after terroirs. Piedmontese wines are specific products of the well-known territorial variety and the care and attention of the winemakers for the terroir and tradition.



2.2.3 *Nihon de mottomo utsukushī mura*

The most beautiful villages in Japan - Label

The **Most Beautiful Villages in Japan** (In Japanese: *Nihon de mottomo utsukushii mura ren-gō*) is a **nonprofit organisation** that lists some of The most beautiful villages and towns in the World. The association enhances and protects the Japanese rural heritage, cultural fairs, branding and promotion of villages and towns¹⁶.

Established in 2005, the Association is in line with the other members such as France, Italy, Belgium, of the federation "*Les Plus Beaux Villages de la Terre*" (The Most Beautiful Villages on Earth).



Japan wants to preserve authenticity, the quality of the heritage as a source of sustainable development and life. The Association manages the rights of the use of the title name "the most beautiful villages in Japan" and its branding. Also, it provides **standard analysis** and study platform to the member towns and villages about how to develop the territory and how to cooperate.

The villages have in common the conduction of **rural crafts** show and **food fairs for tourism development**. They could promote the ter-

ritory thought photo contests and advocating social awareness about the supreme importance of the agricultural culture and natural heritage and its conservation.

The criteria for the membership are the following²:

1. About less than 10,000 inhabitants;
2. Two or more local resources (landscape, environment and culture):

2.1 *Local sustainable resources,*

2.2 *Sustainable use of local resources,*

2.3 *Local resources already protected by public means.*



2.2.4 I Borghi più belli d'Italia

The most beautiful villages in Italy - Label

The no-profit association *Borghi più belli d'Italia* is founded in 2001 on the initiative of the Tourism Council of ANCI (*Associazione Nazionale Comuni Italiani*). It collects small Italian towns of **historical interest to preserve and maintain villages of quality heritage**. The association holds initiatives such as festivals, exhibitions, festivals, conferences and concerts that highlight the cultural, historical, gastronomic and linguistic heritage, involving residents, schools, and local artists.

Also *I Borghi più belli d'Italia*, like *Nihon de motomo utsukushii mura rengō* in Japan, they are part of the international organisation "Les Plus Beaux Villages de la Terre".



Nowadays, in Italy, there are 281 selected and certified *Borghi*. They have the distinctive trait and beauty that represent the Made in Italy concept as an expression of Italian excellence¹⁸.

The translation of *Borgo* in English would be "**village**". However, the meaning of Village does not thoroughly explain what "*Borgo*" is "*Borgo*" (plural: "*Borghi*") is a charming small Italian town, generally fortified and dating back to the period from the Middle Ages to the

Renaissance. Defensive walls and towers often surround the *Borghi*, because they usually rise around a Castle or a Noble palace. All certified Borgos represent the best of Unknown Italy: an immersive experience through art, history, artistic treasures, beautiful landscapes, traditions and savours.

The "Quality Charter" of the *Association I Borghi più belli d'Italia* selects a tourist network of excellence, and it chooses the criteria to award the label of *I Borghi più belli d'Italia* and to access the to Club.

To be eligible, the Village must³:

- have an architectural or natural heritage certified by the applying municipality or by the Ministry of cultural heritage and environmental conservation. Historic buildings must prevail over the total constructions and must form an aesthetically homogeneous whole;
- offer a heritage value for its urban and architectural quality;
- show through facts a policy of enhancement, development, promotion and dissemination, satisfying specific criteria.



2.3 Quality certifications: from JAS in Japan to DOC in Italy

The **trademark** is a patent that ensures exclusive use of a way of distinguishing the product or service and therefore represents the **legal protection** with a distinctive sign (the logo) associated with a product or service. The qualitative labels represent a **tool for telling the history of an agri-food product**, the relationship with the territory and the local community. On the other hand, the labels are also **ambassadors of quality** and recognizability all over the world.

2.3.1 In Japan: JAS

The JAS (**Japanese Agricultural Standard**) System is based on the Law Concerning Standardization of Agricultural and Forestry Products which governs all the agricultural and forestry products, except for liquors, drugs, quasi-drugs and cosmetics.

Products can have JAS label in the packages if they are rated by producers, manufacturers, distributors, or importers who are certified by a third-party organisation.

The JAS marks guarantees the qualities of the products, but it is not a standard on food safety, as HACCP or GAP.

The JAS Standards are categorised as below:

1) General JAS: it concerns quality (composition, grading, performance);

2) Specific JAS: it concerns production methods (organic foods and naturally grown animals)
The Minister of Agriculture, Forestry and Fisheries can provide the JAS label after the inspection of the products.



JAS (General JAS)

Applied to the foods and the forestry products which conform to the JAS for quality, such as grade, composition and performance.



Specific JAS

Applied to the foods which conform to the JAS for specific method of production or manufacturing and the foods which conform to the JAS for distinctive characteristics in quality, etc. comparison to ordinary products.



JAS ORGANIC CERTIFICATION

The JAS Standards label for organic plants and processed foods were established in 2000. It is based on the Guidelines for the Production, Processing, Labelling and Marketing of Organically Produced Foods which were adopted by the Codex Alimentarius Commission²¹.

The JAS Organic Certification has been developed with the addition of the JAS Standards. It is thought for organic livestock products, organic processed foods of animal origin and organic feeds.



Organic JAS

Applied to the agricultural products, etc. which conform to the Organic JAS. Unless organic JAS logos are attached to the plant products or processed foods of plant origin, they can't be labelled as "organic".

JAPAN GEOGRAPHICAL INDICATION

Japanese GI

The GI (Geographical Indication) protection system is a government's registration of agriculture, forestry and fishery products and food products with the product quality and



standard to protect its intellectual property. They must possess quality or a reputation by practicing a special production method for a long time in a specific region in Japan to be qualified. With the GI label, the branding of the Nishio Matcha is distinguished from the rest in and outside of Japan.

2.3.2 In Italy: DOC, DOCG, IGT, UE Organic label quantity and laws

The most significant heritage of Italian food quality is that linked to the "typical" gastro-nomic productions indicated with the quality marks: **DOP, IGP, TSG, DOC, IGT DOCG**.

The most recent legislative developments concern the **EU Regulation 1152/2012**, which identifies the types of PDO and PGI, of the agri-food names and specifies the characteristics of the related specifications.

The latest legislative provisions of the quality certification system introduced news with the entry into force of EC Regulation no. 491/2009, which also recognised wines with the title of DOP and IGP; however, the DOCG, DOC and IGT qualifications are still applicable to wines according to Delegated Decree no. 61/2010, which recognises them as traditional specific terms.

Italy issues the laws which must not be in against EU laws since European legislation originates those of all the member states of the European Union. Italy has adopted a regional system, giving the Regions legislative power, but their laws, as well as their regulations, cannot prevail over those of the same rank and above. The Italian regulatory sources are the Ordinary Laws (L), the Law Decrees (DL), the Regulations (Reg), the Ministerial Decrees (DM) and the Uses. The rules currently in force in Italy concerning the breeding of vines and winemaking are innumerable.

"Wine is the product obtained exclusively from the total or partial alcoholic fermentation of fresh grapes, whether or not pressed, or of grape must." Is what the point of Annex IV to European Union Regulation 479/2008 says, which certainly does not translate anything of all that wine can tell, passion and commitment, science and emotions.

European community regulations include⁴:

- the **Regulations**, group or more groups of rules that legislate in specific matters from the market and exchange system of wine production to the labelling system, to the definition of the classifications of wines produced in specific regions, still more;
- the **Directives**, which define the constraints on the effects of the rules, without taking care of the competences on the forms and the means of application of the same;
- the **Decisions**, which express the constraints exclusively for the recipient subjects.

The standard European agricultural policy review also resulted in the reform of the collective organisation of the wine market in 2008, following the entry into force of the new wine **CMO (Common organisation of the mar-**

kets), agreed with the publication of EC regulation 479/2008.

Moreover, the subsequent EC regulation 441/09, which introduce significant changes relating to the classification of wines and methods for their labelling.

The **main objectives of the reform** are:

- *increasing the competitiveness of wine producers;*
- *consolidating the reputation of European wines;*
- *recovering the market from non-European demand;*
- *simplifying the rules;*
- *safeguarding the best traditions of European viticulture;*
- *strengthening the social and environmental fabric in rural areas.*

As we can see, there is a direct relationship between **Italian quality label and European certification**, because European laws manage all the certificates at first.

European quality labels are product certifications recognised for food by the European Union and are issued by certification bodies identified by the Ministry of Agriculture. They are essential because they guarantee the consumer the original origin of the product and that the production process takes place according to methods linked to territorial typicality in compliance with the disciplinary that regulates the quality mark/label.

DOP – Denominazione d’Origine Protetta



The label designates a product originating in a region and a country whose qualities and characteristics are exclusively due to the geographical environment, combining natural and human factors. All production, transformation and processing of the product must take place in the specific area.

IGP – Indicazione Geografica Protetta



This label introduces a new level of quality protection that takes into account the industrial development of the sector, giving more weight to production techniques than the territorial constraint. This quality mark identifies those food products which, although characterised by a link with the territory of origin, can also be produced in other areas and territories. Among the three types of quality brands, it can be said that this is the one that has the least degree of symbiosis with the territory of origin.

STG – Specialità Tradizionale Garantita



This label is recognised for products whose "specificity" is not linked to a geographical area, but traditional production and transformation methods. The producers concerned must respect the traditional recipe without any restrictions for the procurement of raw materials and the place of manufacture.

BIO – Agricoltura Biologica



Consumers who buy products bearing the European BIO logo can be assured that at least 95% of the ingredients have been organically produced in compliance with the rules of the official inspection plan. The organic product comes directly from the producer or is provided in a sealed package, and it bears the name of the worker, the manufacturer or seller and the name of the inspection body code.

Slow Food presidia

A separate discussion must be made for Slow Food Presidia, which support excellent small productions that risk disappearing, enhancing territories, recovering traditional crafts and

processing techniques, saving native breeds and ancient varieties of vegetables and fruit from extinction. The Presidia directly involve producers, offer assistance to improve product quality, facilitate exchanges between different countries and seek new market outlets (local and international).

PAT – Prodotti Agroalimentari Tradizionali



It represents a label of quality agriculture in Italy. The word refers to those agri-food goods whose processing, preservation and seasoning methods are established over time, the same for the entire territory concerned, according to traditional rules, for a period of not less than twenty-five years.

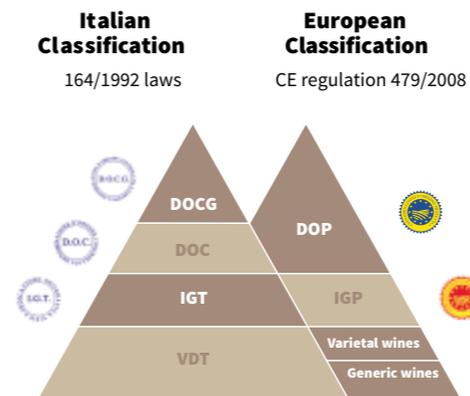
Talking about wine certifications **CE Regulation 479/2008** established that starting from the 2009/2010 wine year, European Union wines must be classified into the following types:

- **Designation of Origin Wines:** wines that have a specific link with the geographical area, identified as DOC and IGP; they are produced in specific regions of the Europe and are subject to a particular production disciplinary

- **Wines without Denomination of Origin:** wines that do not have a specific link with the geographical territory and that correspond, before the reform, Table wines; they are produced in the European Union and are not subject to a specific disciplinary.

DOP and IGP wines are included in the list of Community products that have already obtained this type of recognition according to CE Regulation 510/2006; the procedures for the recognition and modification of the production disciplinary are managed at the Community level by the Agriculture Commission. The new OCM Wine provides that these procedures can no longer be carried out by bodies within the national supply chain (Consorzio di Tutela) but, as already happens for DOPs and IGPs of other food products, by a third party and independent bodies.

More than 80% of Piedmontese wine production consists of wines with **Designation of Origin** (18 DOCG and 42 DOC), deriving from about twenty historic autochthonous vines. The grapes that originate the wine also come from about twenty historic autochthonous vines, including Arneis, Cortese, Erbaluce, Favorita, Moscato Bianco, Barbera, Bonarda, Brachetto.



References

Quotes

1. <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/terroir>
2. https://en.wikipedia.org/wiki/The_Most_Beautiful_Villages_in_Japan
3. <https://borghipiubelliditalia.it/en/the-club/>
4. European Union Regulation 479/2008

Bibliography

Romani R. for AIS – Associazione Italiana Sommelier, *Il mondo del Sommelier*, Associazione Italiana Sommeliers, Milano, ed. 2016.

Web references

<http://www.rojicha.com/our-teas/>

<https://japaneseteasommelier.wordpress.com/2016/09/26/kyoto-uji-the-land-of-yamashiro-anhi-story-of-tea-in-japan/>

<https://japaneseteasommelier.wordpress.com>

<https://en.wikipedia.org/wiki/Terroir>

<https://www.umiteasets.com/blog/japanese-tea-terroirs.html>

<https://medium.com/art-of-tea>

https://en.wikipedia.org/wiki/L_Borghi_pi%C3%B9_belli_d'Italia

<https://www.maff.go.jp/e/policies/standard/jas/>

<https://www.maff.go.jp/e/policies/standard/jas/specific/organic.html>



3

HOLISTIC DIAGNOSIS

*Application into a native
and foreign context,
by opportunities and
challenges*

3.1 Introduction and methodology

The research is strongly influenced and guided by the **methodology** of the university we attended, the **Polytechnic University of Turin**. In particular, the **Master degree in Systemic Design** boosted the methodology applied in the Bachelor degree in product design, enriching the Scenario with an in-depth analysis of the territory.

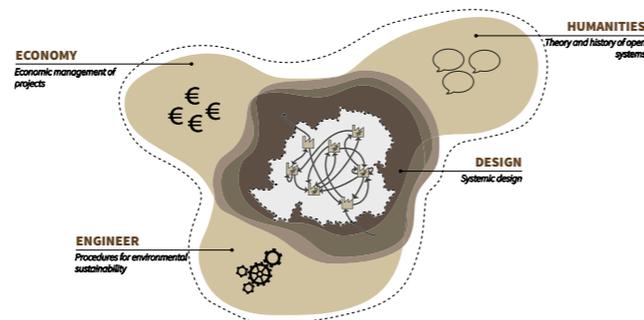
3.1.1 Systemic design approach

Systemic design is a discipline based on the holistic world view and can propose new behavioural and economic models. This approach has the aim of **facilitating the change in consumer habits**, which are capable of affecting the markets and therefore, the movement of raw materials and their ability to weigh on the environment and social issues.

In particular, it starts the process of change starting from the **local level**, that is, it redesigns the economy of a territory starting from the analysis of the **flows of matter and energy** that pass through a **production process**, modifies the nature of the inputs and directs the outputs to a further local production process, thus eliminating waste concept. This strategy allows the creation of a dense **network of relationships** between the realities operating within a territory, a network able to reactive and reinforce the **culture and identity** of a place.

THE SYSTEMIC DESIGN GUIDELINES

The overview of the **systemic design principles** is useful for understanding what the methodology is necessary to evaluate a system as a whole, and to start the definition of new functional relationships to the system itself. They are based on the awareness that at the centre of a systemic project is Man and his ability to connect relationships with the environmental, social and cultural context in which he is part of, and **nature** is the **model of efficiency** to which we must continuously refer¹.



The following list will show the methodological basis of the Systemic design Approach.



1. INPUT-OUTPUT

The outputs (waste) of a system becomes the inputs (resources) for another one, creating: an increase in cash flow and new job opportunities;



2. RELATIONSHIPS

The relationships generate the system: each one contributes to the system the relationships can be within the system or outside of it;



3. SELF-PRODUCING

Self-producing systems sustain themselves by reproducing automatically; thus allowing them to define their paths of action and jointly coevolve;



4. ACT LOCALLY

The local context is fundamental because: it values local resources: humans, cultures and materials; it helps to solve local problems by creating new opportunities;



5. MAN AT THE CENTER

Human being connected to its own environmental, social, cultural and ethical context.

3.1.2 The Holistic Diagnosis (HD)

Looking at the definition of the **holistic term** on the dictionary, it means:

the relative to holism, a philosophical paradigm by which a system cannot be reduced to the number of its parts.

According to the systemic approach, the holistic diagnosis (*we will call it HD for sum up*) consists in the **investigation of context's** state of the art indicates the **quantity** and **quality** of what each process involves, it considers all aspects of the field of investigation and reports and all the relationships that are activated both in the system existing between the individual parts with the context in which it is placed.

Systemic Design, on its first phase, has at the foreground the *Holistic Diagnosis* (HD) tool. The importance of this step is to define a **panorama, from a cultural, economic, social and geographical point of view**. The actual situation must be able to highlight **critical issues and opportunities** starting from the territory in which one acts. The HD, therefore, consists of the detailed study of the **structure** that we take into account and the **behaviour** of the sets of parts/subjects that interact with each other.

The known meaning of this phase is:

A process of analysis which main aim is to determine the context of a system and its state of the art. (Academic slides "Open System" course a.y. 2017-2018).

Therefore, the main goals of the HD are:

- 1) highlight the connections between components of a system;
- 2) provide accessible support for the interpretation of data.

The primary purpose is to **apply the method mentioned above to both contexts**, in Italy and Japan, for reading the territory in terms of geography - sociology – economy and cultural data and impressions. The research is aimed at understanding and identifying the **differences and similarities** about the **application of systemic design approach** but, in the first place, the **holistic diagnosis in a foreign and native country**.

Correlating with the research questions (*all the information can be found in the Introduction*), the holistic approach steps have been overturned for settling down the scientific method with the context conditions.

*As the following chapters of the text explain, we named **Ordinary methodology and Overturned-experimental methodology** the two applications.*

These two applications want to underline the order with which we made the experiences useful for exploring and study the contexts.

For helping us with the categorisation of the experiences, we create a list, analysing them with the following criteria:

- *Place*
- *Visit date*
- *Presence of a shop*
- *Website*
- *Social network*
- *Hospitality services*
- *International pamphlets - English guide*
- *English speaker*
- *Tourist attraction*
- *Accessibility*
- *Level of authenticity*

According to the holistic vision, the whole is greater than the sum of its parts, for this reason, it is essential to examine the context, starting with **field and authentic experiences**, analysing them with **cultural know-how** elements and, after that, searching **scientific and statistic data** to strengthen the argument of the thesis.

The territory is the central area to be taken into consideration as it defines a physical, social, cultural, virtual spatiality of the

exchanges that the process establishes as a whole (cultural, economic, social logistic). So, the holistic diagnosis, therefore, consists of the detailed study of the structure in question and the behaviour of the sets of parts/subjects that interact with each other.

The holistic diagnosis can also be defined as a **preliminary phase of analysis** of the inputs and outputs in terms of large scale analysed from a quantitative point of view, in order to know the number of resources used and any waste produced, and qualitative, to understand the type of resources available, all not only analysing the industrial system of reference, but also the cultural one.

The last part of the chapter is talked about the analysis of qualitative and quantitative data to show an overview of the tea and the wine sector.

The holistic diagnosis focused on the following **six branches**:

1. **Geography**
2. **Education and demography**
3. **Cultural aspects**
4. **Economy**
5. **Urban areas**
6. **Consumption**
7. **Tourism**

We decided to use different scales of the territory to describe some aspects at the regional level, other in very close level.

There are **three criteria levels**. The most general one surrounds the **regional area**; in Italy is the Piedmont region and in Japan Kansai region. The **intermediate level** is a square of the **100 km²** of the intervention area around the villages of Cella Monte and Yubune. To facilitate the research, data referred to the **area of Alessandria and of Wazuka**; indeed, it is impossible to find specific data related to a geographic map instead of a political one.

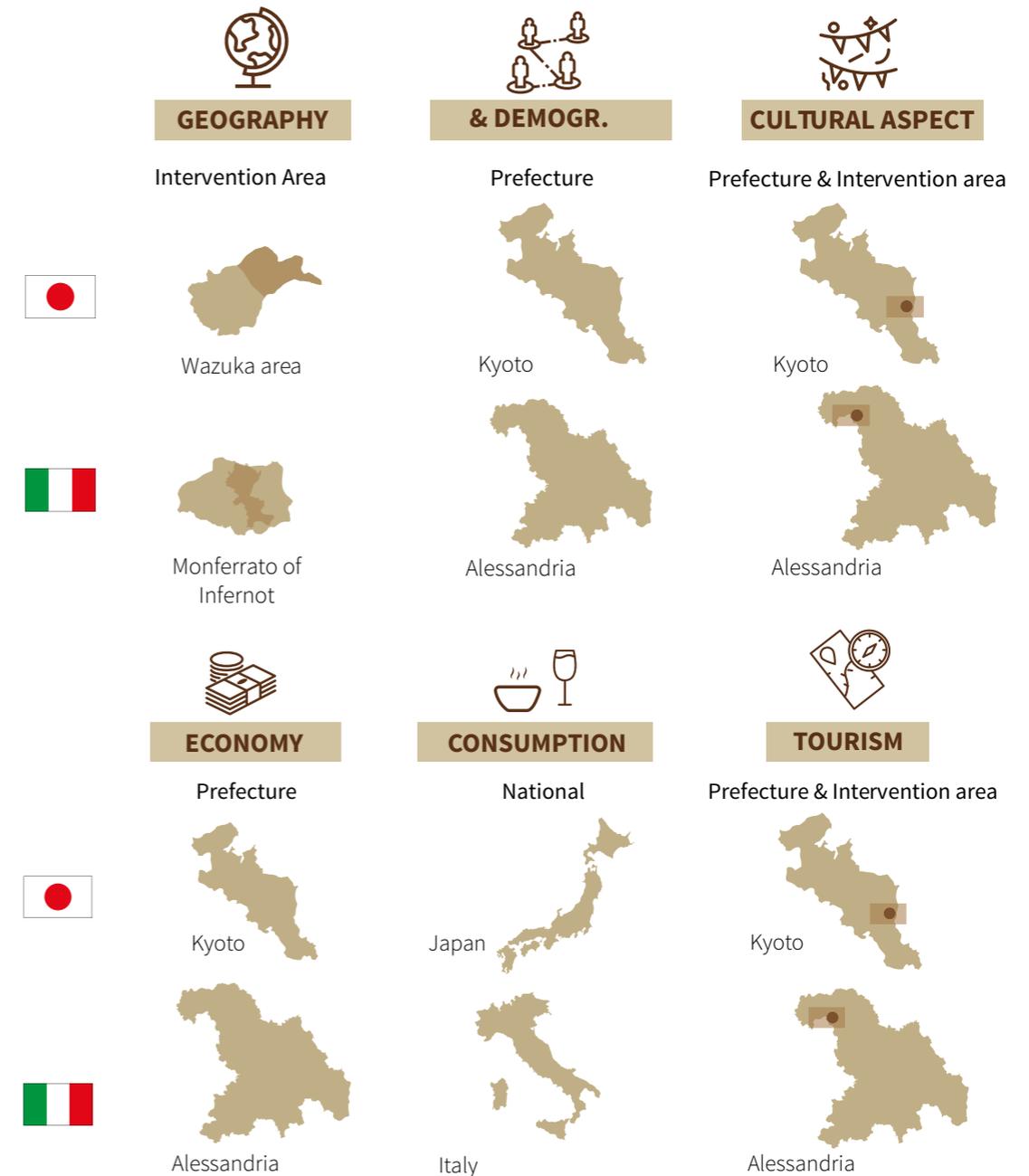
The **third scale** focused on the villages of Cella Monte and Yubune is thus the most **specific one**.

The six branches mentioned above are divided into the following scales:

1. **Geography: Intervention areas**
2. **Education and demography: Local areas**
3. **Cultural aspects: Intervention areas**
4. **Economy: Local areas**
5. **Consumption: Regional areas**
6. **Tourism: local areas**

The following schema will explain the the scales subdivision, which represent guidelines, in form of icons for each level of intervention analysis.

HD GUIDELINES



3.2 Overturning the HD: the goals of different process orders application

The Holistic Diagnosis of the **tea world** began with the field research during the workshop in Yubune and continued during the long-term period in Nagoya. It finished with the desk research in Italy, collecting data from books and websites.

The Holistic Diagnosis of the **wine world** began with the desk research during the long-term period in Nagoya for preparing the meta-design dossier and ended with the workshop in Cella Monte.

This two types of research should happen simultaneously because they complement one another.

Furthermore, in some cases it is necessary to verify on the field the information founded at the desk research, this is done to increase the level of accuracy of the research and to verify if the data given is updated. Therefore, the HD commonly begins with the desk research and end with the field research.

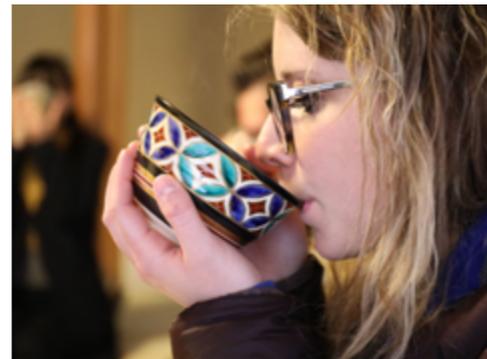


3.2.1 Tea sphere starting from field research ending with desk research

OVERTURNED EXPERIMENTAL METHODOLOGY

The field research has been carried on by all the following **experiences**.

Tea ceremony (5.1.1): we experienced our first tea ceremony in a tea house called Takumi-no Yakata in Uji city, which is close to Kyoto, so quite easy to reach. Nevertheless, there is not a direct website of the tea house, just some information from another website about Uji. For this reason, it seems not to be for foreign people. It is a pity because it is authentic, but it is held for Japanese.



We made a tea ceremony in the tea house outside the building; the tea master does not speak English, so we needed an interpreter. The activity consisted of a tea making lecture and tea-tasting game, and it costs ¥1,000 per person that is quite cheap.

In the middle of June, we attended a Tea ceremony inside a temple, **Tobe Jinjia**, thanks to a university club interested in tea, called Saka-dou club. This club is not known among professor in NCU and for that reason is not easy



to find. It is not an authentic experience, but it was stimulating knowing that some young people are interested in tea culture and tradition. These guys do not belong to a proper school of tea, but they practice to make tea (お点前) every Tuesday and Wednesday. They organise a so-called "Tsukigama" (月釜), that is a tea party held for the general public every month in the tea room of the temple.

One of the cosiest tea ceremonies we attended was in **Inuyama**. A couple of Japanese people invited us to their second home, and they organised a special tea ceremony for us. They have a particular room with tatami, to practice the ceremony with guests.

It was a "house ceremony" so they told us to

relax because it was not a formal moment. They offered us two couple of tea, so there were two ceremonies. In particular, we attended a **Ryureiseki ceremony**, which is a kind of ceremony made on the table. We made it at their



home, with a woman who is a Tea master, for that reason, it was an authentic experience for people like us, who come from abroad. She did not speak English, but her husband did, so we talked about the tea world and had a conversation. For us, it was accessible because we spent several months in Japan, and we knew local people, but it was impossible to find for tourists.

→ (All the information about tea ceremony are available in paragraph 5.1.1)

D:matcha - second visit: we came back in Wazuka at the end of May, and we went to d:matcha restaurant for the second time with two Japanese students from KIT. We had the opportunity to ask new questions to the owners, who speak fluently English. D:matcha is a new kind of business that wants to innovate the tea sector without damage it. They are



developing a strategy based on ecotourism experience, such as tea pick up that, unfortunately, we did not, tasting and sightseeing of tea fields. They have a website both in English and Japanese, and they are active on social media: Instagram, Facebook and AirB&B. They have also all the information material in English. For that reason, it is quite easy to find also because international tour operators refer to them. Inside the restaurant, they produce bakery products and sell crude tea leaves, tea tools for daily consumption and tea ceremony (handmade cups, whisk and bamboo spoons). They offer iced Sencha as a welcome and hot and cold tea drink are included with the main meal.

→ (All the information about tea ceremony are available in paragraph 6.1.1)

Showa-Art Museum: this is a museum of tea located in Nagoya, and we visited on May 11th. Inside there is a typical tea house with a garden. Close to the entrance, there is a collection of porcelain, but there was not any explanation in English. A very kind older woman tried to explain to us some objects and their function in Japanese and

with gestures.

It is challenging to find on the net because the name does not remind the tea culture. The place is not in the city centre, and maybe, for this reason, the site is very traditional. The managers know well the history and tea cultural aspects. It is an attraction for tourist too because of the presence of the website in Japanese; it has not any social network. There are not English speakers although the guide spoke Italian because she studied in Milan. She prepared for us a pamphlet in English and explained to us the history of the tea house.

→ (All the information can be found in paragraph 5.3.1)

There was not any hospitality service, such as an iced tea dispenser. The shop sold just books and little souvenirs but any tea.

Wazuka-cha café: we visited this cafeteria and its tea shop during the second site inspection we had at the end of May. It is a new kind of place in Wazuka, they want to attract local people and also tourists, for consuming



Drinking tea during tea ceremony (JP)



authentic tea differently, but they have a website and a Facebook page in Japanese, so foreign people do not know it. Locals can easily find this place because it is located on the main street of Wazuka, but there are no clear signs to find it. When people enter the cafeteria, they offer a small cup of tea as welcome. They serve and sell tea cultivated from local farmers; therefore, they have a rental bike service for enjoying the panorama of tea fields. The map with bike paths they give is in English. There are a Japanese tea-instructor and tea-trainer called Nakayama. Her role is to connect customers and tea farmers spreading activities about Japanese tea: for example, she teaches to tourists how to use a teapot and use the appropriate temperature. Since no one speaks English, they manage the communication somehow without an interpreter.

Hanami with professors: During our second week in Japan, our professors invite us to stay together during the hanami in a park in Nagoya, it has been an exclusive and private occasion for knowing better each other. Ohtsubo sensei made the tea ceremony with a toolkit for drinking tea during hiking occasions, so we



enjoyed matcha tea after sharing homemade Italian food and sushi from the supermarket. We noticed that Italian people usually cook and sharing food, while Japanese people prefer buying ready-made food from the supermarket and sharing it. The tea ceremony was not strictly authentic but very traditional and special one. We used very modern tools to make tea outside, such as portable gas and a metal saucepan.

Matcha museum in Nishio: In June we went to Nishio, a city famous for the transformation of *tencha to matcha*. It was quite easy to find some information about Nishio and

Aiya brand on the net. It is difficult to book the experience because there are strictly reservation numbers (18 in total per day). So we booked one month in advance. There is the *museum of matcha*, that explains well the entire tea's transformation process, showing some machinery and tools, also in operation. Some videos helped to explain the process closer, with English subtitles. We also made an immersive visit in a sort of fake covered tea field. During the visit, they explained to us how to recognise different kind and quality of



tea thanks to a multisensorial quality tasting experience, then we chose the taste, and we

Hanami (花見 "Looking at flowers") is a **Japanese term** that refers to the traditional Japanese custom of **enjoying the beauty of spring-flowering** of trees. By now it mainly means the flowering of Japanese **cherry trees**, which in Japanese are called *sakura*, and therefore the *hanami* has become synonymous with admiring the cherry blossom. During this period Japanese people use to **have a picnic at the parks**, sharing food and drinks enjoying the cherry blossom.



transformed it grinding our mix of tencha. We drank our tea during a tea ceremony in a replication of a tea house. They are Japanese speakers only, so they gave us a pamphlet in



English with the primary information about the visit. We do not consider it as a tourist attraction for foreign people. Their targets are Japanese who want to discover some knowle-



dge about tea culture. Close to the museum, there is a shop area where it is possible to buy matcha powder and several kinds of sweets made with matcha.

Moreover, there is also a cafeteria, **Saijoen**, for tasting matcha tea and other dishes made with matcha. They sell only their products,

and during the shopping time, they gave us matcha sweet at the cashier. Talking about websites, the matcha museum one is in Japanese, the Aiya factory one in English and the Saijoen one in Japanese.

Daily consumption: living in Nagoya allowed us to discover the daily tea habit. We used to buy teabags at the supermarket, for preparing hot or cold at home. Sometimes we brought away with us in a reusable bottle. Lots of packagings do not have the instruction in English, so we translated it from Japanese to Italian. Sometimes we bought tea bottles at the supermarket to taste different kinds of brand and flavours. The most famous brands are ITO EN and AYATAKA. We rarely bought tea PET bottle to the vending machine, because products are expensive and they create plastic waste.



We used to drink tea also at the University canteen, as free tea infused was available at the machines during lunchtime. We considered it the right kind of service based on gastronomic culture.

Tea as a welcome in accommodation service: while we were in Japan, we had the oppor-



tunity to visit some big cities or small villages for continuing our research. Some ryokan and hotels offer tea bags and a kettle for preparing tea. This service is not considered the breakfast or the “five o'clock tea”, but a kindly welcome to the guests who can enjoy cold or hot tea as soon they arrive in the accommodation. We found two stick packs for each of us that are an easy way to prepare instant cold or hot tea.

Vending Machines There are almost **5 million vending machines** (自動販売機, *jidōhanbaiki*) in Japan, that means one of the world's highest vending machine densities (**1 per 24 people**). Machines can be found around towns, villages and even in the countryside. Almost none of them are vandalised or non-functional. Most of the machines sell **non-alcoholic beverages** such as juice, soft drinks, energy drinks, tea and coffee for 100 to 200 yen (it is more expensive than the supermarket). Usually, there are both hot and cold beverages. Few vending machines sell goods such as ice cream, rice, instant noodles.



3.2.2 Wine sphere starting from desk research ending with field research

We are pretty sure to say that we do not know our native context as well as we think, especially when we started to go in deep with the holistic diagnosis about wine in Piedmont.

The ordinary holistic diagnosis has allowed us to explore Piedmont region, with a particular focus on **Basso Monferrato** area in terms of historical and cultural settlements, but also from social, economical, morphological point of view.

As we said before, (as you can see in chapter 1.3.1), we made a research for having some “kick-off” case studies about wine projects related to different design scale: product, service and industrial systems. This step was able to give some preliminary tools for exploring the context of our studies.

Then we started our desk research work developing a scientific paper that we called meta-design dossier (as you can find in chapter 1.3.3), useful for the workshop’s activities, with a series of cartographic themes “unwrapped” in coordination with the other member of the Drinkscape programme (landscape designers and architects). The development of a framework in which we can work on, was significant also for us, as a native, for looking at some aspects with a more critical eye.

In addition to the previous experiences in Japan, we had several moments directly rela-

ted to wine sector in Basso Monferrato area, for enhancing the role of field research and knowing the actors and materials that flow into the wine supply chain. The HD format could turn into a vital tool to reach a **synchronised dialogue between the actors** of the research.

Wine tasting experience

For the bottom-up research point of view, we started with an **informal and spontaneous method** to have the first approach with wine, that is having some different wine tasting experiences. Some of the wineries and wine farms where we reach the wine tasting were in Cella Monte or nearby the village.

The other ones took place in another part of Piedmont. Wine tasting steps will be elaborated on chapter 5 more in deep, but in this section, we would like to show that one of the main elements of analysis should also be the taste perception of the product and raw material to work on. The tasting is performed, as well as for personal pleasure, also to assess the compliance with the characteristics provided by the production disciplinary of IGP and DOC wines in order to allow them to be put on the market. Almost the totality of the wine tasting experiences provide a guided tour of the winery and in some specific occasion also a tour of the vineyards, in order to explain the relationship with the territory and the main steps of the winemaking process.

Castello d’Uviglie tasting

One of the first wine tastings took place at Castello d’Uviglie (Uviglie, CN) in their wine farm. We had a tour of their site, and they talked about their production philosophy and relation with the characteristic of the area because they use pietra da cantoni quarry as a natural cellar for their wines that we tasted. The bottling fermentation process of this company is carried out very slowly at a constant



temperature of 12 ° C in the pietra da cantoni quarries of the Castello d’Uviglie, dating back to the 11th century. This kind of site inspection moments was useful for asking information to local people that work in the wine sector, discovering new insights to improve during the data collection.

<https://www.castellodiuviglie.com/index.php>

Cinque Quinti aperitivo

We had another wine tasting experience during the workshop in Cella Monte at Cinque Quinti family-run wine farm. This farm is a project arose from the desire of 5 siblings, Fa-



brizio, Martina, Michele, Francesca and Mario to continue a family-run activity founded four generations ago, giving it an innovative and fresh touch. The name comes precisely from this. They are five siblings, each of which with different ideas and skills will give his contribution to develop the activity and to reach the common goal. They have got a quite large infernot under their home, and after a meeting with them, we had an infernot tour with one of the siblings, Mario, and then we tasted their wines with a kind of aperitivo formula to talk with them and know more in deep their work and their future projects. One of the important future steps for them will be the launch of a Teaching Farm thanks to the certification obtained in 2018. They will soon start a complete renovation of the spaces dedicated to it and with the organisation of the first appointments addresses to local schools, groups and families whose desire is to deepen their knowledge of the agricultural world. They also explained to us that the most ambitious project is the one to build their wine cellar. Currently, for the vinification process, they are collaborating with trusted local wineries which they follow step by step.

So, they explained to us, in an effortless way, the efforts and the positive aspects of their work, so this was an excellent opportunity for us to ask information during an enjoyable environment.

<https://cinquequinti.com/en/>

La Cà Nova dinner



During workshop days, we had the opportunity to eat at La Cà Nova agriturismo to have dinner with typical local food and meanwhile, taste their wine. La Cà Nova is a winery from the early 1900s and Bellerio family the is the owner. The winery's name derives from the "Canova", name of the ancient farmhouse of the family of Bellerio, current owner, located in Rosignano. In the second half of the 19th century Marco's great-grandparents, in order to proceed with the construction of their farmhouse at Cella Monte, dug in the stone from the canton, the infernot, a very resistant yellowish sandstone. Today, thanks to a solemn tradition, Marco's passion has been producing different types of wines since his youth: Barbera of Asti, Grignolino of Monferrato Casalese,

Monferrato Freisa, Monferrato Casalese Correse, Piedmont Bonarda, Monferrato Rosso. The dinner matched each dishes with a particular wine to create the right pairing between food and wine. It was another experience that has allowed us to taste local flavours which could be useful for future projects.

<https://lacanova.net>

Harvest session

During our second site inspection, which took place on September 26th, we revisited Cinque Quinti wine farm, and we have taken part in a harvest session with them. We started to work with them early in the morning at their vineyards for harvest grapes which will be used for Barbera wine. We worked closely with their seasonal workers who came from East of Europe exclusively to work for Cinque Quinti farm. We had the opportunity to ask questions about some agricultural aspects related to the wine sector in general but also related to the Monferrato area. We became aware of their story more in deep, discovering that Cinque Quinti's project was born during 2015 harvest when Fabrizio and Michele decided to keep a small part of selected grapes to experiment our first ever wine production. Fabrizio and Michele are the two siblings whose lifestyle was shaped by the passion for the vineyards and the grapes passed on by their grand-father, are the foundation, the beating heart of the company. Together with Fabrizio and Michele, we harvested grapes for wine, discovering the grape characteristics to have a high-quality wine according to DOC label.

Tenuta La Pergola visit



In October, at the end of harvest session, we visited Tenuta La Pergola wine farm in Asti, Piedmont Region. The guided tasting was presented directly by the owners, Bodda family, with a detailed description of the company, the winemaking methods, the blotting process and the production of various wines. They explained the different combinations of each wine with the Piedmontese cuisine. We had a tour inside the cellar, and we talked with the owners to ask specific information about the winemaking process and the wastes derived from each step of the process. After the guided tour we tasted their wine which was accompanied by cheeses and typical cured meat of Piedmont region.

<http://en.tenutalapergola.it>

Site inspection:

The site inspections have been crucial moments for the field research connected with the holistic diagnosis. To design for and in a context need to know and see with the designer's eyes the environment to better under-

stand the characteristics of it and to develop projects which reflected the aim of the territory.

Site inspection with a local volunteer:

On the first site inspection in March 2019, we had the opportunity to be guided by a resident of Cella Monte who carried out voluntary work as a guide for the Cella Monte ecomuseum. She guided us for an entire morning, and she explained several peculiar local aspects related to history, architecture, but also to the administrative point of view, which helped us to read the data about Cella Monte and the all Monferrato area. She talked about problems and opportunities of the territory from her point of view, as inhabitant and expert of the territory. Talking with the volunteer and other local people, we understood that the substantial difference with the area of Langhe, which mostly attracts tourists to that area, is the percentage of vineyards: in the Langhe, 90%, Monferrato less than 50%.

Ecomuseum and infernot visits

Pietra da Cantoni ecomuseum has been operating since 2003 for the development of a unitary culture among the various realities present in the Monferrato area of Casalese, promoting initiatives aimed at its recovery not only as a historical testimony and as a family and social life, but also to revitalise activities and typical agricultural productions of this territory. During the first site inspection that we had, we made a guided visit inside the Ecomuseum with a local volunteer who told us about the particularity and uniqueness of the

life and landscape of the Monferrato Casalese. She explained to us that the ecomuseum deals with promoting initiatives aimed at the recovery of canton stone not only as a historical testimony and family and social life but also to revitalise and reinterpret the functional and economic role with respect to the typical activities of this territory.

Witnesses local farmers and entrepreneurs

All the visits of the various realities of the territory have allowed us to come into contact with local workers to ask for information and experiences directly related to their daily life.



3.3 Qualitative and quantitative data analysis about the tea sector

The holistic diagnosis **merged qualitative data** received from the days spent during the workshop in Yubune (so-called field research) and from the extended stay in Nagoya with **quantitative data** found thanks to website and books read (so-called desk research).



3.3.1 Geography

KANSAI REGION - MORPHOLOGY

Japan has three different levels of government; the national level, **8 Regions**, **47 Prefectures** and **1741 Municipalities**.

Kansai Region (Japanese: 関西), also known as Kinki (近畿地方, Kinki-chihō) or Kinai, is one of the eight regions of Japan, located in the southern part of the main island of the country, Honshū.

Kanji Ki, (畿) in Kinki means city or capital. It stems from the fact that in the Nara and Heian periods, the capital of Japan was located in this region.

Kansai includes the prefectures of Nara, Wakayama, Mie, Kyōto, Ōsaka, Hyōgo, and Shiga.

The analysed area of Yubune is located in the Sōraku district, Kyoto prefecture, Kansai region.

In Kyōto prefecture there is **Sōraku district** (相楽郡 Sōraku-gun) had an estimated population of 44,982 in 2007 and a density of 252.27 persons per km². The total area is 178.31 km². The town and villages inside the district are Kasagi, Minamiyamashiro, Seika and Wazuka. The Kansai region is a centre of culture and the historical heart of Japan. It occupies 11% of the national territory (27 335,11 km²) and in 2019 had 22,321,491 residents.

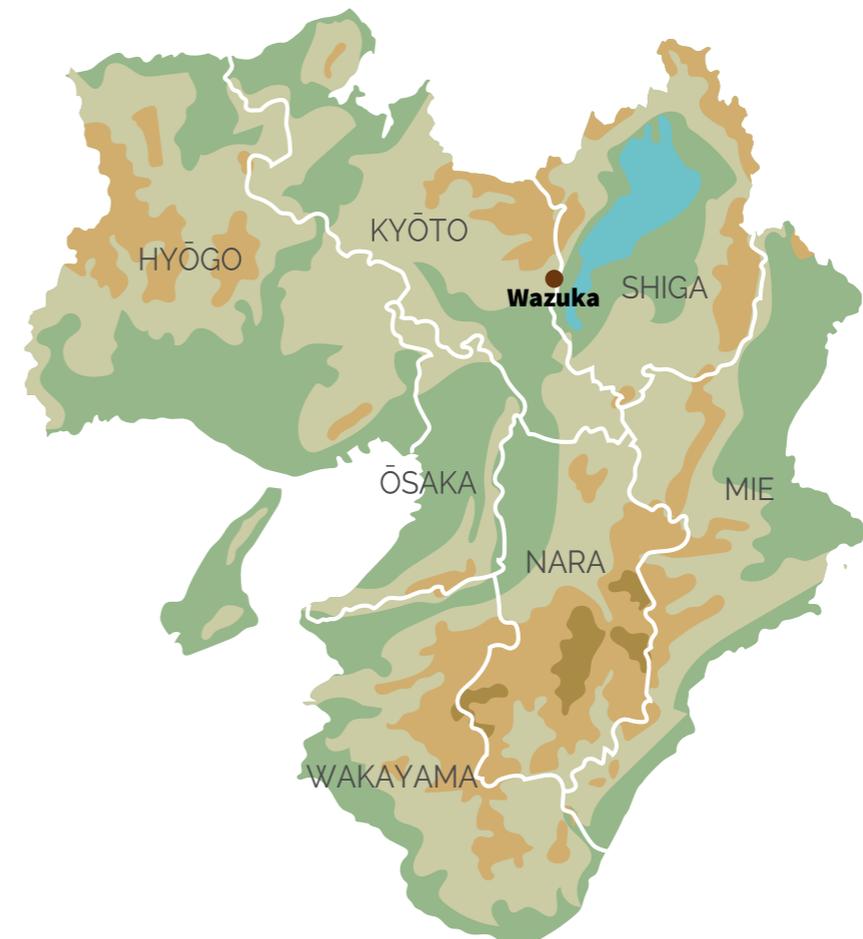
The morphology is pretty varied, because of the presence of the **sea** which creates a fragmented seacoast with capes and peninsulas, some big plains, lots of **hilly areas** and some **spread mountains**. The prefecture is rich in rivers, waterfalls and **hot springs**.

The plain of Osaka, with the cities of Osaka and Kyoto, forms the core of the region: from this, the territory of Kansai extends into the Seto Inland Sea towards Kobe and Himeji and to the east includes Lake Biwa, the largest freshwater lake in Japan. To the north the region overlooks the Sea of Japan; to the south, it is limited by the Kii peninsula and the Pacific Ocean and to the east by the Ibuki Mountains and Ise Bay.

As of 15 April 2016, **21% of the prefecture's** land area was designated as **National parks**: Seto Inland Sea National Park, Yoshino Kumano National Park, San'in Kaigan National Park, Ise-Shima National Park and 11 quasi-national parks.

Japan has a very **high percentage of forested land**. Forests cover more than two-thirds of its surface. In contrast, the rate of agricultural land is meagre at just 12% and has been declining by almost 0.5% annually. The use per capita of developed land is one of the lowest

within the OECD (Organization for Economic Cooperation and Development) with an average of just 260 square metres per inhabitant of developed land. Since 2005, the area has been expanding at a rate of 0.5% per year, even if the number of inhabitants has slightly declined over the same period²².



WAZUKA - MORPHOLOGY

Wazuka is a town located on a valley of the southeast side of Kyoto Prefecture and forms an urban area along the **Wazuka River**. It is one of the four areas in southern Kyoto that produces tea, producing less than 40% of Uji tea. There are few flatlands, lots of **tea fields** and 76% of the area is forest²³.

Looking at the population increase and decrease from the 2010 census, the population has decreased by 10.30% to 4,483 and now it is about 3500.

Wazuka has more than 300 tea growing families, that is a significant number for a total of 1400 families.

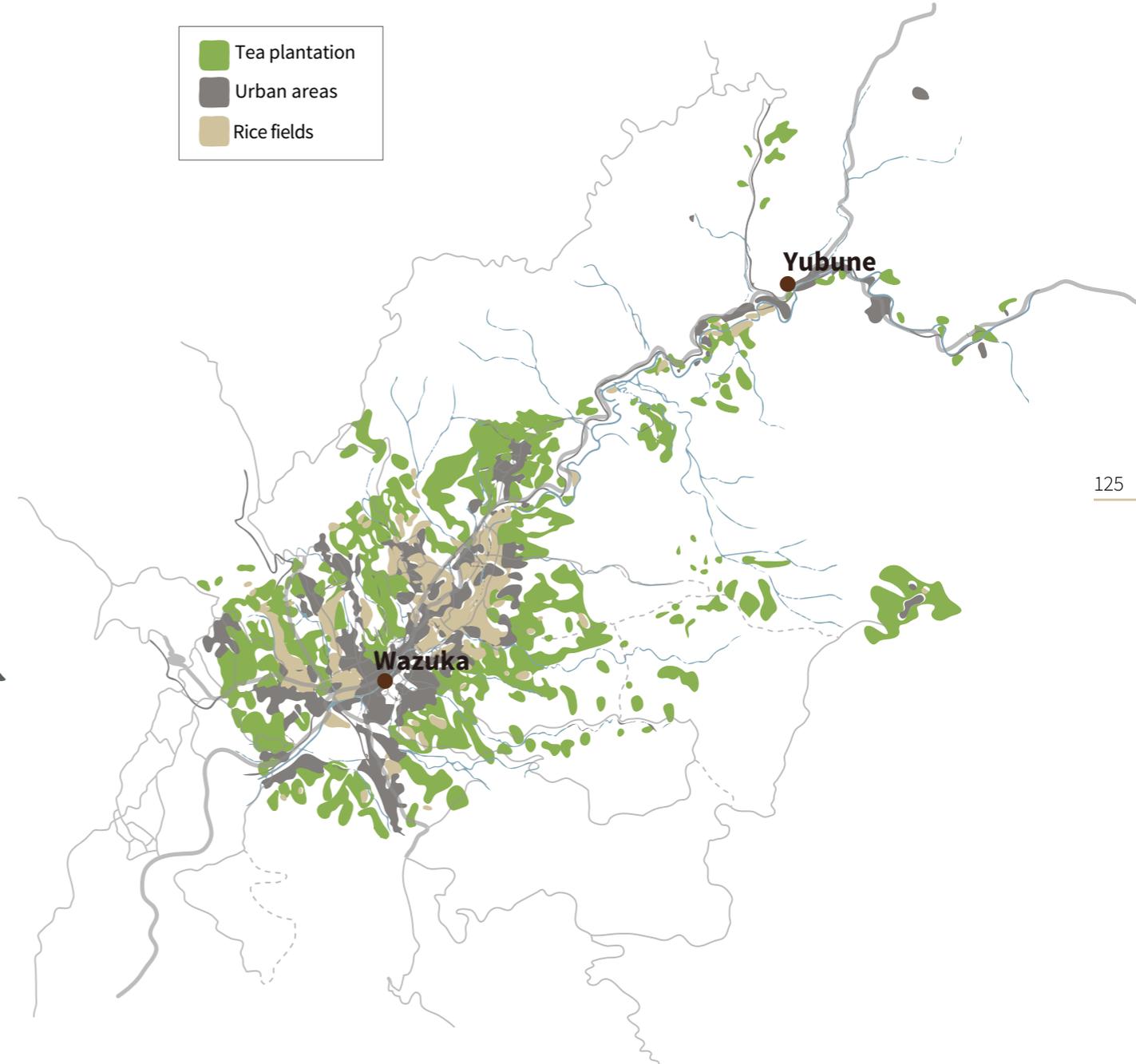
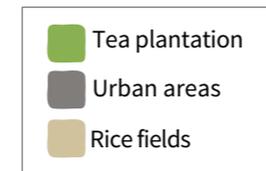
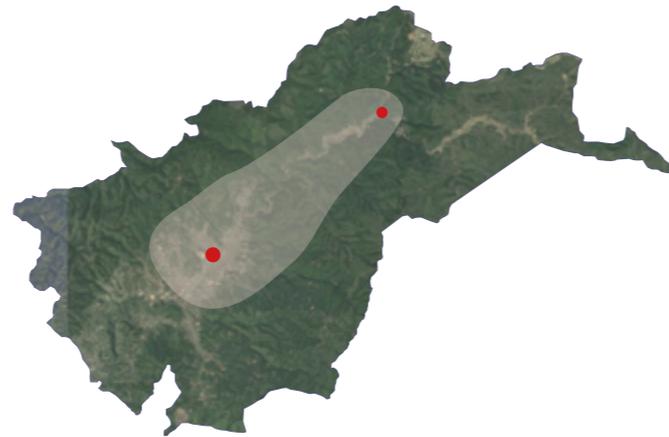
The name "Wazuka" is not widely known because most tea produced in Wazuka is sold as Uji tea through tea wholesalers.

Wazuka area was selected in the Kamakura period (1192 – 1333) for tea production and has held an 800-year history as one of the leading production areas of Uji tea. Today Uji tea comprises only about 4% of the tea produced in Japan, and Wazuka tea only half of that. Also, a significant crop of rice is produced among other agricultural products.

In the last half of the Meiji era, it was the region that boasted the highest production in the prefecture but still lagged in terms of quality. Later, the quality was improved by improving fertiliser application, participating

in fairs, and introducing tea machines. Throughout the town, the tea plantations spread on the slopes of the mountains. On April the 4th 2013, Wazuka Town has been included as the most beautiful village association in Japan.

Due to the steep slope of the mountain, the introduction of riding pluckers has not been very advanced, that should have replaced the hand-picking. With the introduction of machine cutting (especially the two-maned one), the area of the tea plantation has expanded.



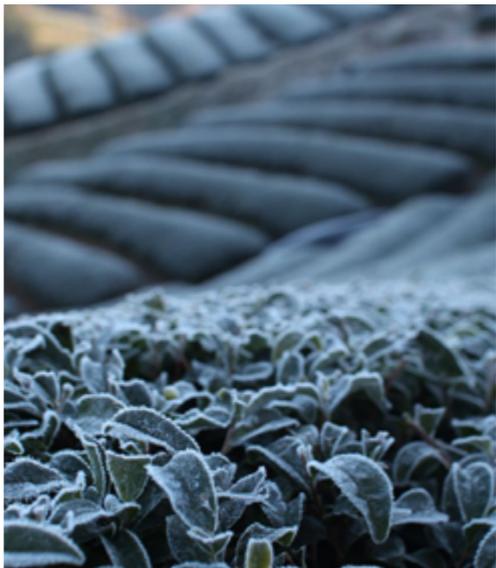
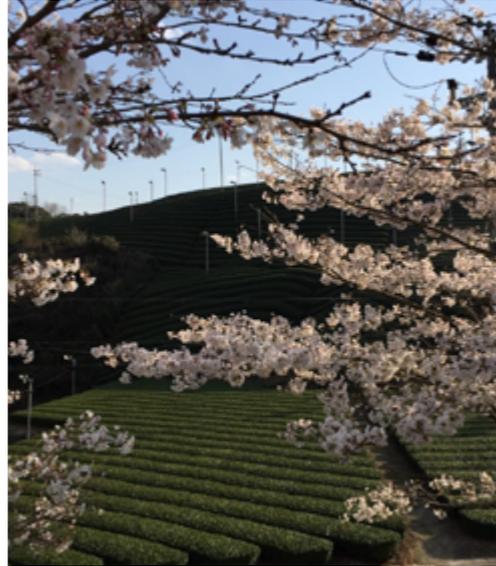
CLIMATE DATA

There are three different typologies of climate in Kansai Region.

In the northern part of Kansai the climate is influenced by the Sea of Japan and heavy snow is frequent, in the southern part the Pacific Ocean influences the climate, and finally, the central part of Kansai has a Seto Inland Sea climate. **Typhoons** hit the southern part during the rainy season.

Due to its unique geography, Uji and **Wazuka microclimate** is ideally suitable for growing tea: tea plantations are located **50 kilometres inland**, shielding them from the storms, as well as making them colder in winter, warmer in summer.

Tea is mainly grown on hills along rivers or lakes, which produces humidity, dense and heavy fogs, as well as reasonable temperatures. Rainfall, however, is not as intense as in the rest of Japan.



THE SOIL

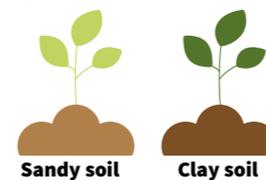
In Japan, tea is historically mainly grown on steep slopes where rice cultivation is impossible: it is different in Uji area, where tea plantations are often set on the best land on **smooth slopes or top of hills**. The soil is usually fertile and acidic, which is perfectly suited for the cultivation of green tea.

Indicators of soil factors mainly refer to the physical properties and conditions of the soil.

They include:

- Soil Temperature
- Soil Moisture
- Soil Types

Changes largely influence these conditions in the air temperature and quantity of **precipitation**. Thus, the areas covered by plant also influences these changes acting as a buffer zone, limiting penetration of sunlight and thereby minimising the temperature changes on the surface of the soil. Generally in Uji Area, there are **two types of soil**, namely those where clay or sand predominate. In several tea plantations, tea growers are mixing the two soil



types to obtain positive results. Based on anecdotal information obtained from tea growers it was mentioned that tea plants which are

grown on **sand type soils** would produce teas with better tea aroma and deeper green colour, whereas those which are grown on **clay type of soils** would produce teas which have a strong flavour.

Among different soil types, sandy soil has large particles; therefore, because there are spaces among the particles, in general, it has low water retention, and nutrients runoff is frequent. Clay soil on the opposite it has small particles with smaller space in between, which made clay soil have excellent water retention properties.

Uji's area land is often rich in humus and in red clay, the old sediments of nearby lake Biwa, that tend to produce dark coloured leaves with a strong flavour.



Yubune Gonose

Yubune

Yubune Hakayama

The village of Yubune can be divided into **three different areas**: The first one, **Yubune Gonose**, is the most ancient, and Wazuka River and Yusuhara River surround it. In this area, two of the main houses are located, and they belong to the two most leading family funders of Yubune. The architecture demonstrates their historical importance, indeed in this area there are only wooden constructions that have the traditional Japanese style, with no contemporary materials.

The second area, called **Yubune centre**, is on the left side of Watsuka River. This is the first area

of expansion, where the settlement developed. Some traditional constructions have some additional volumes with contemporary finishes.

The third and last area, **Yubune Hakayama**, is the most recent zone of expansion: it is composed of contemporary houses. Thus they do not have traditional materials, and their shapes and disposition are different from the ones of the first zone.

The whole area is developed on the right side of Watsuka River along to the main road that crosses the valley.

LAND USE IN THE ANALYSED AREA - YUBUNE

As the map shows **Yubune village**, is surrounded by wood and hills. The forest is mainly formed by **Japanese cedar (Sugi)** and by broadleaf forest. Between the northern village and the forest, there is a **bamboo area** that creates rhythm. All the fields are small and inside the village because of the slopes that do not allow to cultivate. They are some old **rice nurseries** that follow the shape of the **river**.

Tea plantations are mostly located around the river plains and on the hills area, whereas tea plantations from each location produce tea

with different characteristics. Tea characteristic from each location is directly affected by the natural environmental conditions of each location. Through hundreds of years of observations on these natural environmental conditions, each tea grower has developed unique techniques which allow the full exploitation of nature in producing their teas.

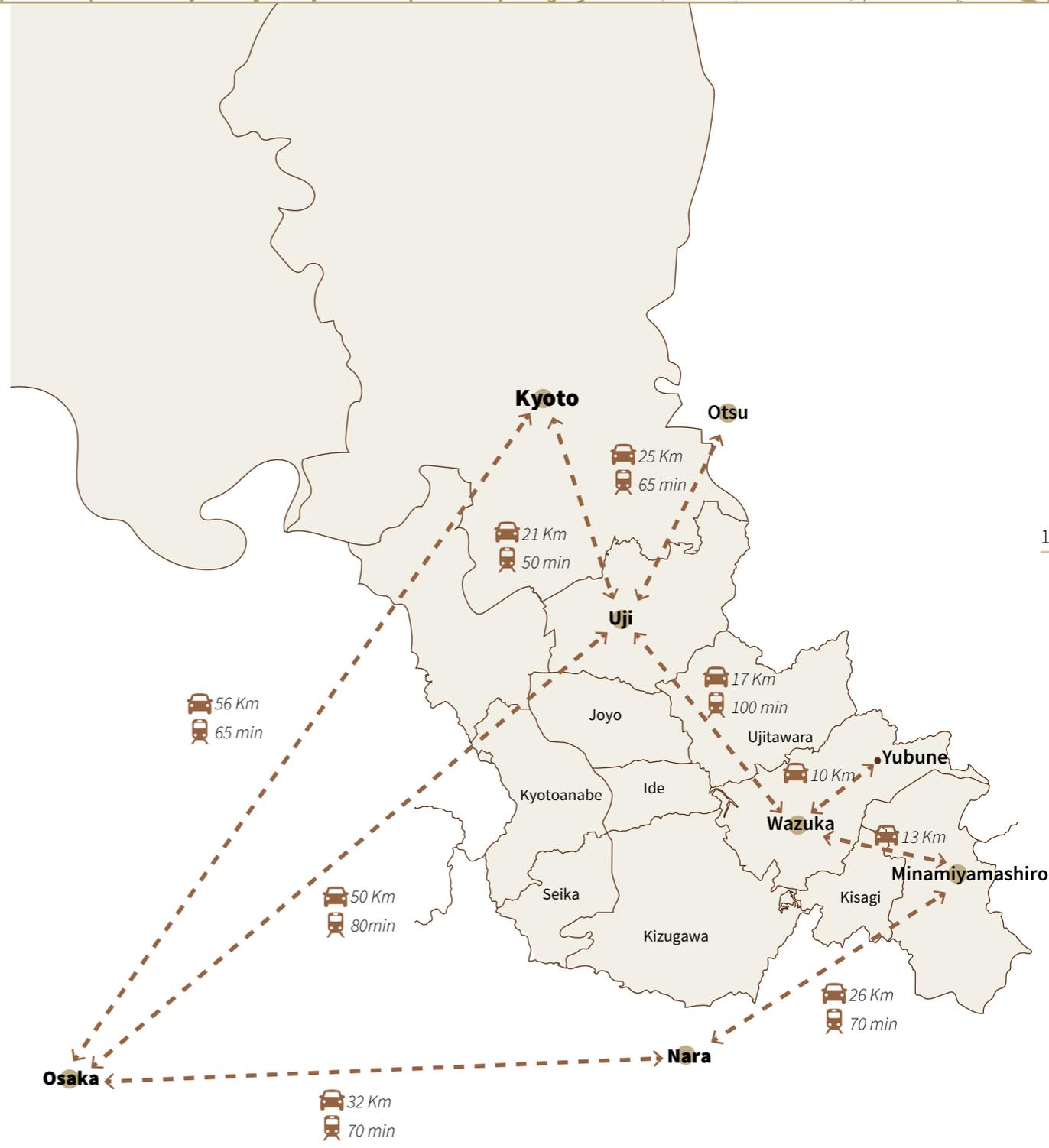
The **residential area of Yubune** is spread along the river, and it forms a long and narrow village. Warehouses and tea factories line up to surround the garden in front of the main buildings. It is also a characteristic of the landscape.



TRANSPORTATION

As you can see from the map on the other page, the area of Wazuka is 17 km from Uji and Uji city is 15 km distant from Kyoto. There are frequent trains along the **JR Nara line** connects Kyoto City and Uji. And there is one-way trip which takes about one hour by local train. or half an hour by rapid one. The main cities next to Uji and Wazuka are: Nara at first, Kyoto and Osaka. It is possible to reach Wazuka **by train** or **by car**, but there are Shinkansen in the area which connect different zone.

On the other hand, Yubune is not so easy to reach without a private vehicle because of the position of the village. From **Kyoto city** to **Yubune village** there are around **50 minutes by car** taking the National Route 422 which connects Kyoto with rural areas in the south of the Prefecture. The distance among **Wazuka and Yubune** takes **20 minutes** by car through the Prefectural Road number 5.



3.3.2 Demography

POPULATION

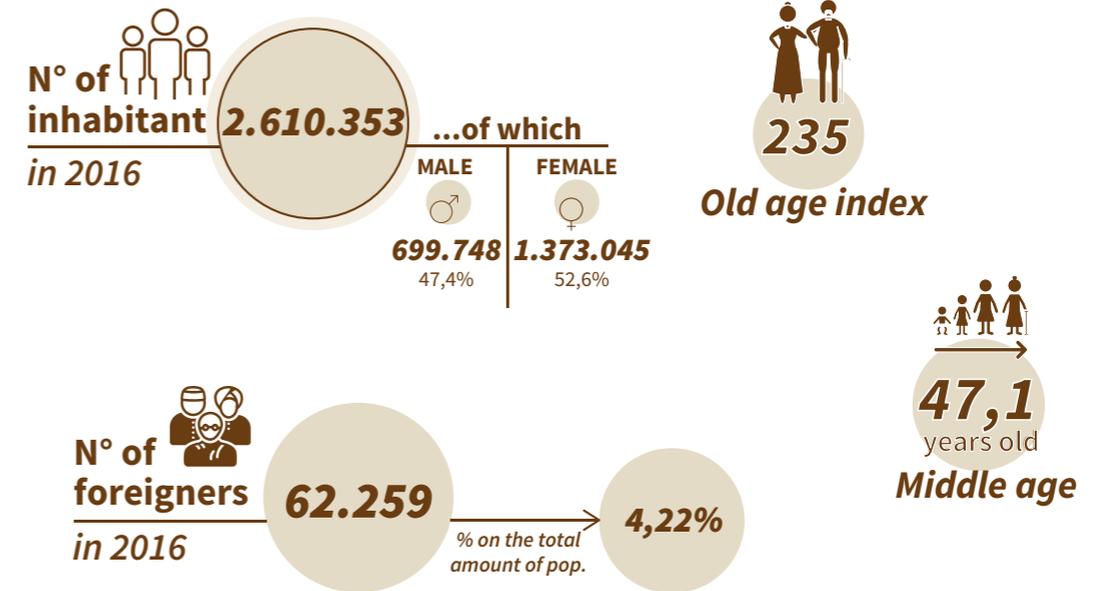
About the demographic analysis relating to the territory, we collected data on the **municipality of Wazuka city**, and the **Kyoto area** to have a more comprehensive context view.

Data not available for Kyoto area were available for Kyoto city. The area of Kyoto has 2.610.353 inhabitants in 2016, with the majority of female (less than 53% of the total population). Even if Kyoto is a **university city**, the old average index is quite high: 235, that means that the average age is more than 47 years old.

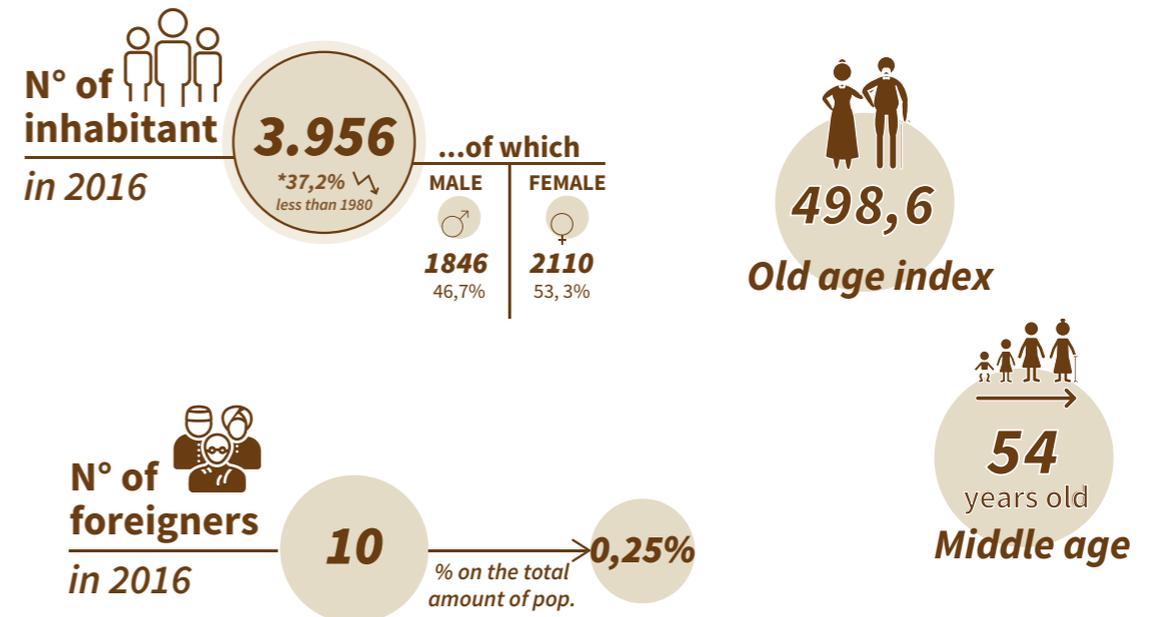
The percentage of **foreign people** is more than 60.000, (4% of the total). Indeed, there are some people from other countries like China and South Korea.

In Wazuka area the number of inhabitants is less than 4.000 with a majority of the female. Only ten people are foreign, and they all came from Asia. The old average index is higher than in Kyoto: 498, which means that the average age is 54 years old.

KYOTO



WAZUKA



FAMILY

The **number of families** is less than 200.000 in Kyoto, with an average of the number of the components of two that is very little. The number of birth is steadily decreasing (-7%), and the number of death is continuously increasing (9.5%). The balance is negative (-4.613 people).

In Wazuka area there are **1400 families** composed of two members as average. The number of birth does not change between 2014 and 2016, but the number of death is increasing.

In Wazuka there is a presence of just one primary school (in 2016) with 130 pupils.

The balance between birth and death is negative, -47.

During the last years, the percentage of birth is decreasing by 3%,

while the percentage of death is increasing by 15%.

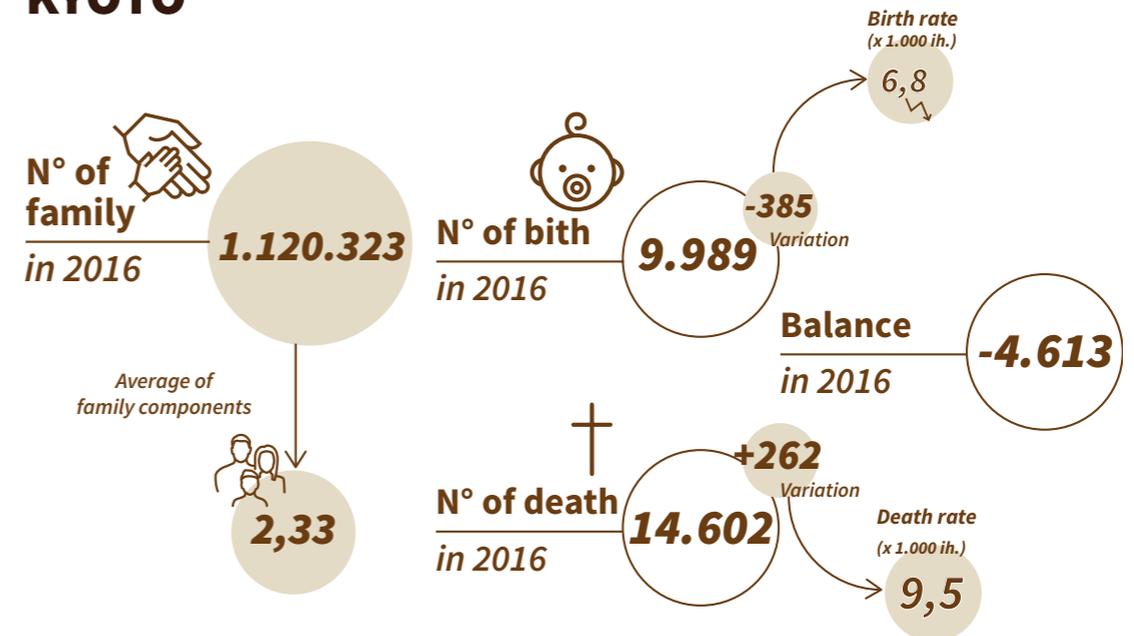
The **old age index** is defined as the percentage ratio between the number of over-65s and the number of young people up to 14 years. As the charts show it is possible to see that in Wazuka this ration it's almost the double of Kyoto's one. This is because the **lack of young people in the rural area** of Japan as Wazuka is.

The **birth rate** represents the average number of birth per year per thousand inhabitants, in Kyoto city the number is higher than Wazuka, according to demographic trend.

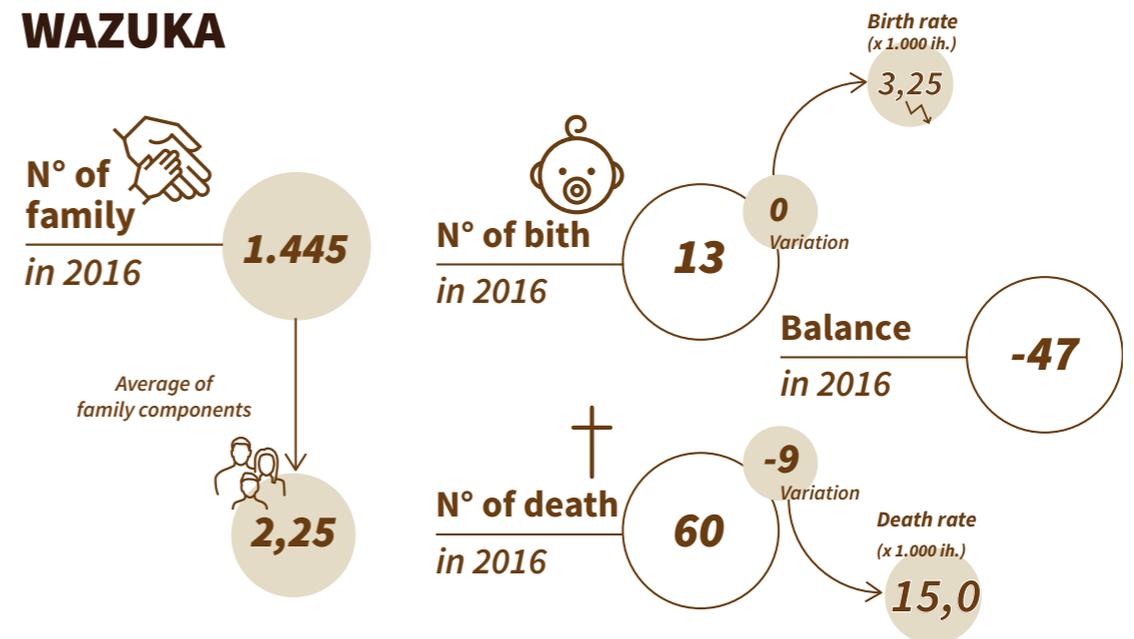
On the contrary, the **death rate** shows the average number of death per year per thousand inhabitants and it is possible to see that in Wazuka the amount is higher than Kyoto.



KYOTO



WAZUKA



3.3.3 Cultural aspects

TYPICAL DISHES

Japanese cuisine combines staple food, which is steamed white rice or *gohan* (御飯), with one or several *okazu* (the main dishes) and side dishes. This one may be together with miso soup and *tsukemono* (pickles). "*Ichijū-sansai*" (一汁三菜, "one soup, three sides"), refers to the preparation of a typical meal that has roots in classic *kaiseki*, *honzen*, and *yūsokucuisine*²⁴. Japanese cuisine has a vast number of regional specialities known as *kyōdo ryōri* (郷土料理) in Japanese, prepared using local ingredients and traditional recipes. While "local" ingredients are now available nationwide, and some regional dishes such as *okonomiyaki* and *Edo-style sushi* have spread throughout Japan, there are many regional specialities that survive and some new ones still being created.

Kansai offers a massive variety of dishes, starting from street food to healthy vegetarian cooking. However, across this wide range of dishes, from fried foods like *okonomiyaki* and *kushiage* to tofu dishes like *yudofu* and *yuba*. Every Kansai food has a richness of taste that comes from using high-quality ingredients, accurately and enthusiastically prepared to reach a delicious flavour.

Japan is known for green tea, but Uji green tea is famous among all Japanese people. Uji is one of the first areas in Japan where green tea

plant was cultivated after it arrived in ancient times from China. There are many shops in many big cities like Kyoto specialising in food made with Uji green tea, including ice cream, green tea *soba* noodles, and sweets²⁵.

According to Japanese cuisine definition, it is possible to subdivide the categories of Japanese food as ***Bento, Main dishes, Desserts, Noodles, Sashimi and Sushi.***

Most of the dishes that people can try in Uji and Wazuka areas are characterised by the use of tea powder to make for example green tea noodles or some typical Japanese dishes have a unique flavour of green tea. In some cases, tourists can find some dishes like pasta with *sencha pesto* or *matcha pancakes* which represent a fusion cuisine to attract visitors.

All the dishes are accompanied by a cup of tea, which could be cold in summer and warm in winter.

It is only right to spend some words for *Fucha Ryouri*, a traditional particular cooking method that originated in the temples of China, but also applied in green tea areas in Japan, especially in Uji temples; and *Fucha-ryori* tea cuisine is like a Chinese-style *shojin-ryori* (vegetarian cuisine) which is not so common among people in their daily routine.



Anko

Anko is a sort of Japanese jam made with azuki beans, a legume that is extensively grown in East Asia. The paste is prepared by boiling the beans, then mashing or grinding them.



Kansai Region



Chawanmushi (茶碗蒸し)

A delicate custard-soup, its name meaning steamed in a tea cup. Each portion of the dish is ideally served in a small, lidded cup, either as an appetizer or as a part of a bigger meal.



Kyoto prefecture



Futomaki

Futomaki is a variety of rolled sushi that is characterized by its large size and a strict balance of used ingredients. The rolls are typically filled with vegetables of different colors, and usually don't contain seafood.



Kansai region



Green tea dishes

From matcha parfaits to matcha hard and soft ice cream, matcha cake, matcha dumplings, matcha tofu, and matcha curry, matcha foods are popular both to eat in and take out as souvenirs.



Uji



Matcha sweets

Typically served in Matcha café, this big glass of ice cream is seasoned with dorayaki, and other sweets made with matcha and other sweet ingredients.



Kyoto and Uji



Matcha udon

Experience a different way of enjoying udon with this recipe for matcha udon noodles with kamaboko fish cake. The matcha green tea in the udon noodles gives them a refreshing, leafy quality of flavour.



Wazuka



Mitarashi dango

They are popular Japanese treat which consists of skewered rice cakes covered in a sweet, sticky soy sauce glaze. They are traditionally made with five round cakes.



Kyoto prefecture



Nishin soba

A traditional dessert, it has the shape of a stick and is obtained by mixing honey, sugar and egg white: this cake has received the municipal denomination of origin from the Municipality of Alessandria.



Kyoto prefecture



Obanzai (おばんざい)

It is a traditional style of Japanese cuisine native to Kyoto. For food at least half of its ingredients must be produced or processed in Kyoto. Ingredients in obanzai cooking must also be in season.



Kyoto prefecture



Shiso (シソ)

This herb has also been known in English as the "beefsteak plant", possibly on account of the purple-leaved. They are a part of the seven spices of Japan, originating from over 300 years ago in Kyoto.



Kyoto Prefecture



Taiyaki

Is a Japanese fish-shaped cake. It imitates the shape of the tai (Japanese red seabream), which it is named after. The most common filling is red bean paste that is made from sweetened azuki beans.

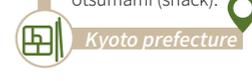


Kansai region



Tsukemono (漬物)

Japanese preserved vegetables (usually pickled in salt, brine, or a bed of rice bran). They are served with rice as an okazu (side dish), with drinks as an otsumami (snack).



Kyoto prefecture



Okonomiyaki

Similar to an omelet or a pancake, okonomiyaki is an immensely popular Japanese dish. The batter is made with eggs, flour, water, grated yam, and shredded cabbage.



Kansai Region



Pheasant (懷石)

Pheasant meat is a high protein meat that has been used as an ingredient since ancient times. Traditional dishes include pheasant stew, pheasant sukiyaki, pheasant rice pot, and pheasant soba noodle.



Kyoto Prefecture



Shishi nabe

The usual ingredients for this nabe include vegetables, mushrooms, tubers, konnyaku, wheat bran, tofu, and pork, but the broth tends to differ across different regions.



Kyoto



Warabimochi

Warabimochi is a sweet Japanese concoction reminiscent of jelly. It is made from bracken starch, and is traditionally dusted with sweet toasted soybean flour known as kinako.



Kyoto prefecture



Yatsushashi (八ツ橋, 八橋)

It is a type of wagashi a traditional Japanese confections that are often served with tea and sold mainly as souvenir sweets served with tangy Ponzu sauce for dipping.



Kyoto prefecture



Yudofu (湯豆腐)

Tofu cooked in hot water (Yu). Usually the hot water is not actually just water but Kombu (dried kelp) broth to give the dish more flavor. It is typically served with tangy Ponzu sauce for dipping.



Kyoto prefecture

MAIN ARCHITECTURE

The most attractive spots in the Uji area, and generally in all over Japan are the Holy Architecture, related to different religions.

Japanese architecture (日本 建築 Nihon kenchiku) has a history as old as that of the country. Strongly **influenced by Chinese** architecture; however, it stands out for certain important aspects and differences that are typically Japanese. Most of the buildings that remain today of Japanese pre-modern architecture are castles, **Buddhist temples** or **Shinto shrines**. Temples, shrines and gates are ubiquitous to see while people are walking around Japan, from the city centre to rural areas, and they represent the city's charm. With this paragraph, we would like to show some of the most famous buildings to visit in the Uji area and in Wazuka town, which represents the history of these places.

UJI

Byōdō-in (平等院)

It is a Buddhist temple in the city of Uji in Kyoto Prefecture, Japan, built in the late Heian period. Byōdō-in is inscribed on the UNESCO World Heritage List as one of the Historic Monuments of Ancient Kyoto. Fig.

Ujigami Shrine (宇治上神社)

It is believed to be the oldest standing shrine in Japan and is linked to Byodoin Temple as its "guardian shrine".

Kosho-ji Temple (興聖寺)

It the first Soto sect temple, was founded in 1233 in Fukakusa in Kyoto's Fushimi area.

Shojuin Temple (正寿院)

It has gained immense popularity thanks to its heart-shaped window called inome. Inome is a traditional Japanese pattern with over 1400 years of history used for several historic buildings in the country. As per tradition, people believe that the pattern help avoids disasters and bring happiness.



WAZUKA²⁶***Kaijūsen-ji*** (海住山寺)

Its temple (five-storied pagoda) is often credited with bringing tea to Wazuka village. It is a National Treasure of Japan. Kaijūsenji Temple was founded in 735 and dated back to the time when Emperor Shomu, who prayed for the safe construction of the Great Buddha statue, ordered a Buddhist priest known as “Roben Sojo” to build this temple.

Wazukatenmangu Shrine (和東天満宮)

This shrine was built in 983 when the painted image of Lord Sugawara Michizane was enshrined. The main hall presents the architectural style of the Muromachi era in the 15th century. It is designated as an essential cultural treasure.

Kyoto Wazukaso (京都和束荘)

It is an accommodation where people can drink tea-infused and kaiseki cuisine, a big bath in which there are tea leaves bags. Indeed, it was renewed in July 2016 with the concept of “Inn to savour tea using all five senses.”

Jubu-san Kontai-ji Temple (鷲峰山金胎寺)

A famous mystic in Nara era founded the temple around the end of 7th century and, later the Emperor Shomu rebuilt it as a Royal temple to protect Kimon, the devil's gate, of Hei-jo-kyo.

Shoho-ji Temple (正法寺)²⁷

The temple was established by a Japanese Buddhist priest of the Nara period called Gyoki to reassure the spirit of the son of Emperor Shomu. Ginkgo and maple trees are planted throughout the entrance on the temple grounds.

Analysing the relationship between **typical architecture** and **tea landscape** in Wazuka area, it is essential to mention some examples of buildings designed for enhancing the magnificent skyline from a panoramic point of view in this area.

Tenku Café

Relax and enjoy some tea while gazing out over Wazuka Town. The tourist can stop first at Wazuka-Cha Cafe, located at the base of the hill. It is a small log house built near the top of the mountain. People can relax here with a cup of tea while enjoying a panoramic view of the whole town.

MUSEUMS²⁸***Tale Geji museum***

The Tale of Genji describes the story of an incredibly handsome nobleman and his love affairs in the Heian period, with the last ten chapters happening in Uji. The museum offers explanations, movies and interactive games available in English, making it much fun to experience the glamorous world of Genji.



NATURAL SITES

WAZUKA

Miroku Stone Buddha

It is a Buddha statue made by stone said to be from the Kamakura Period. It is carved into a formidable rock surface.

Gyo-ba(行場)

Buddhist mountain regarded high mountains as sacred and did their spiritual training deep in steep mountains. Kontai-ji Temple wants to be a spiritual training place, and it still has Gyo-ba, a site for spiritual practice. The area around is designated as a historic natural conservation area of Kyoto Prefecture.

Yubune Forest Park (湯船森林公園)

It has a hexagonal gazebo, nature paths, and a place for barbecuing, that is popular in summer, while mountain bikers flock throughout the year.

Nagomi-no-ko(なごみの湖)

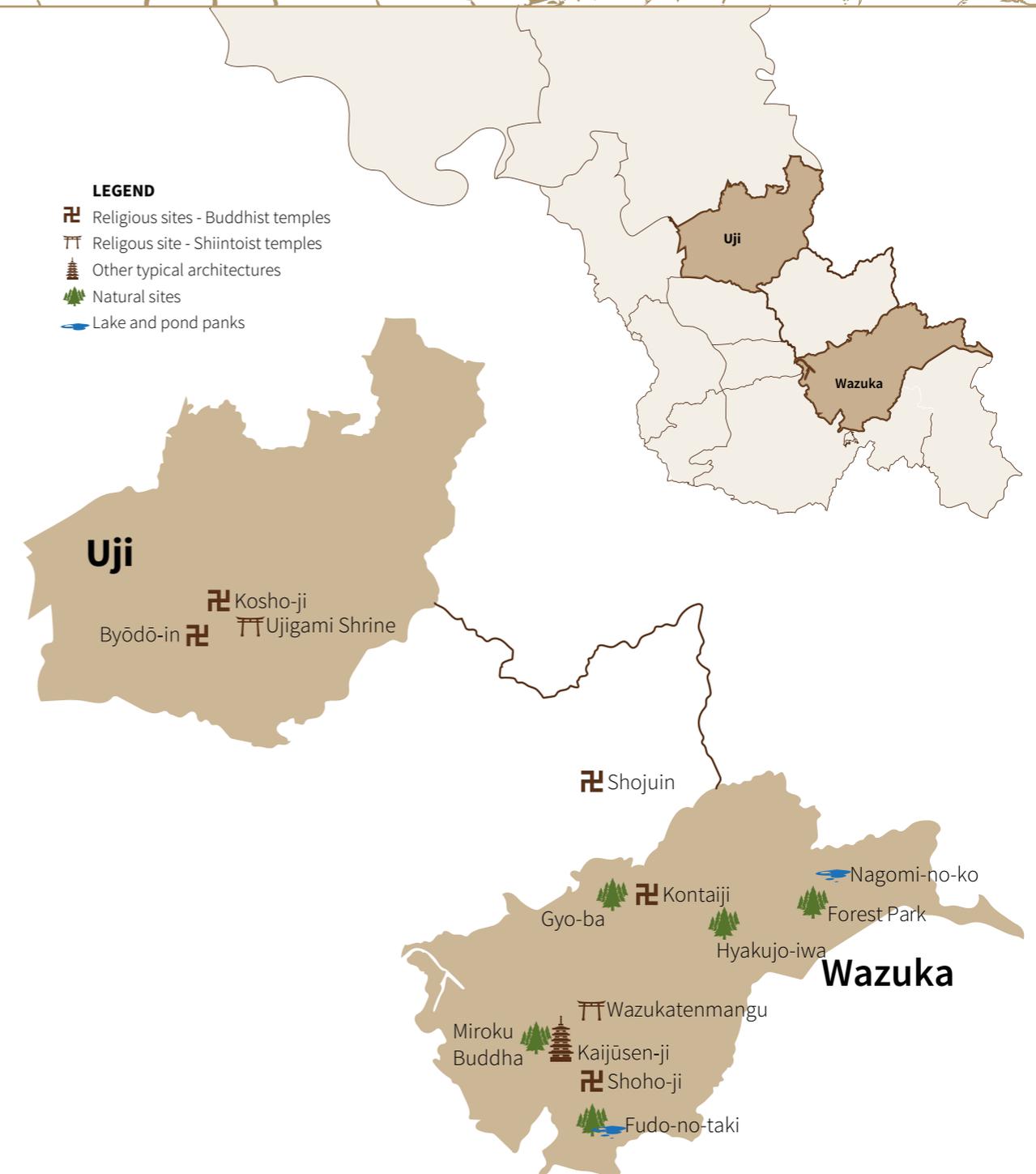
It is an artificial lake in the Yubune Forest Park, made for blocking a feeder stream to the Wazuka River. People can enjoy sportfishing here.

Hyakujo-iwa(百丈岩)

Massive granite rock in a beautiful ravine called Kamakura-dani. It is also called Hachi-jo-iwa, and its view is among 200 selected natural scenes of Kyoto.

Fudo-no-taki (不動の滝)

This waterfall used to be a training place where the ascetics of Mountain Buddhism performed cold water ablutions for their spiritual training. Fudo-myō-ō, Acala, is enshrined in its basin, and people believe it has miraculous power. The waterfall is also called “Ogon-no-taki”, Golden Waterfall.



CUSTOMS AND TRADITIONS²⁹

One of the particular aspects of **Japanese heritage** is the considerable number of festivals spread all over Japan, and they are traditional festive occasions to celebrate something that is linked with religions or not. Some festivals came from old Chinese festivals, but they have undergone significant changes as they mixed with local customs. Now, some are so different that they do not even remotely resemble the original festival despite sharing the same name and date. Various local festivals are mostly unknown outside a given prefecture. With this section, we would like to show a panorama **of main festivals** which characterises the **Uji** and **Wazuka** areas.

FESTIVALS^{30 31}

Chagenkyo Matsuri

Each year, the town holds an annual festival called Chagenkyo Matsuri or Teatopia Festival. The festival is on the first weekend of November, and it attracts more than 6000 tea lovers from Japan and around the world. People can try lots of local teas and tea-inspired foods.

Kecha-sai Matsuri

There are two festivals: one is held in June/October and Ujicha Matsuri is held in October. Both festivals show gratitude to the benefactors of Uji tea. People ask for a successful harvest, and they offer a prayer for the further development of the tea industry.

Water drawing ceremony³² (お水取り)

It is called the sacred water-drawing festival; it is a Buddhist festival that takes place in the Nigatsu-dō of Tōdai-ji, in Nara. The festival is the final ritual in observance of the two-week-long Shuni-e ceremony. This ceremony aims to purify the people of their sins and to inaugurate the spring of the new year. Once the Omizutori finishes, the cherry blossoms have started blooming, and spring has arrived.



SPORTS

The analysis of the sports activities focused on two main categories: the **leisure sports** related with the landscape, and consequently green tea, and the **competitive sport**, that are specific of the area. The first group includes the amateur cycling and trekking around the tea plantation: both activities are suitable for tourists too.

The second group includes sport mainly for locals, such as the golf, the Mountain bike at the forest park in Yubune and the cormorant fishing.

Landscape

**Leisure sports
Green tea**



- E-biking
- MTB
- Racing biking

Culture

**Competitive sports
History**



3.3.4 Economy

MAIN BUSINESSES

Data about businesses' structure of Kyoto Prefecture

Kyoto has a **labour force** of **1.3 million people** of a total of 2.6 million inhabitants. The number of the **establishment** is about **123.000**. The Prefecture has a different industrial cluster, like:

- *electrical equipment,*
- *transport equipment,*
- *precision equipment,*
- *textile and chemical industry*

There are some **innovative industrial clusters**, such as ICT, Electronics, Life science, Environment and Energy.

List of major industries in Kyoto prefectures³³

Kyoto is famous for its world-renowned traditional arts such as Nisijin brocade and unique Kyoto styles of Yuzen silk dyeing, dolls, pottery. The traditional arts of Kyoto is the energy behind the increase of many advanced technologies. One of the precious aspects relates to Kyoto Prefecture regards the Japanese culture and tradition which plays a vital role for business activities of the Prefecture, and its traditional local industries as valuable assets

that support Japan's tradition and culture. To conserve them for future generations and to encourage them to develop in a way that is complementary to contemporary lifestyles, the prefecture is conducting a range of programs under a prefectural ordinance designed to promote traditional manufacturing and cultural industries.

Many **world-leading companies** are located in Kyoto.

Moreover, Kyoto's **smaller businesses** with the products they make and technologies are fundamental as **touristic attractive**.

During the last years, Kyoto is aiming to become a significant IT cluster, attracting IT companies to the area and promoting new investment businesses.

The prefecture of Kyoto hosts more than ten **foreign-affiliated companies**. Indeed, the technological capabilities of Kyoto businesses combined with the R&D capacity of the universities and research institutions made Kyoto under significant attention from foreign-affiliated companies promoting R&D.

Major Companies of Kyoto Prefecture

Kyoto prefecture-based manufacturing industry is a **high-technology product-based**. The leading technology companies are Nidec, Kyocera, Murata Manufacturing, Omron, Takara Holdings, GS Yuasa, SCREEN Holdings, Mitsubishi Logisnext, Maxell, Faith.

The technology sector also includes a **video game and animation** company such as Nintendo, Kyoto Animation, and Tose.

Moreover, Kyoto prefecture is home of the **chemical industry** FALCO.

The most crucial company which produces **industrial pottery** is called Zero.



MAIN ECONOMIC SECTORS

Economic information of Uji area - Wazuka area

The area around Wazuka city is very active from the production point of view. Even if the area products **mainly green tea**, there is a significant **forestry sector**. Indeed, the area is very **woody**. The wood is also composed of **bamboo**, that is a prevalent material in Japan and by paper **mulberry** for creating the famous washi paper.

The presence of the Wazuka River guarantees a quite large **fishing sector**.

HANDICRAFT

Uji area and Wazuka are not famous only for the production of tea.

Handicraft is also essential in Wazuka area.

As in many villages in Japan, there are some essential handicraft sectors, like:

- Pottery,
- Silk weaving (with the production of Kimono an Obi),
- Dyeing with plants (called Shibori)

Indeed, **Asahi pottery** is deeply rooted in the capital of tea. The pottery has been in continuous production over four hundred years, through fifteen generations of the Matsubayashi family. The Asahi craft workshop provides tea bowls treasured

for preparing whipped tea to tea masters. Another representative Asahi product is the spouted **teapot** (kyusu or hobin) for preparing steeped tea. It was introduced to the craft about 150 years ago., and this pot is designed to bring out the excellent flavour of fine tea and is favoured by connoisseurs.

Each pot is shaped individually and with great care. The Asahi craft workshop focuses on **utensils** for various modes of **servicing tea**, while at the same time creating a wide variety of utensils suited to contemporary life.

Silk weaving (Yūki-tsumugi 結城紬)

This handicraft practice is one of the most famous Japanese handicraft sectors.

There are many steps to create silk fabric: the process begins with the **tiny, hardened silkworm cocoons**. These are collected and then submerged in slightly oiled water, slowly stretched until they form a bag-like structure. Each bag is then carefully teased into a long, thin silk thread, by hand. Once the thread is ready, it must be dyed. The patterns used currently are decided each season by the wholesalers and passed on to the artisans; from there, experts take the time to mark out each thread, tying off the parts that should not be dyed with a specific type of thread. This process alone can take weeks, even months.

When the pattern has been marked the threads go off to be dyed, using a unique process where large bunches of threads are bound

together and thrashed carefully against rock slabs to ensure complete colour penetration and evenness.

Only after that does the thread move to the loom, where it takes time to hook each thread into the warp and weft, and finally gets woven into the delicately patterned silks. One kimono uses roughly 2,000 cocoons and can take a year or more to produce.

Shibori (絞り)

Shibori is an ancient Japanese technique for **dyeing fabrics** that is still little known in the West. In *shibori*, the fabrics are tied and manipulated, or protected in other ways, before being immersed in the dye bath.

In this type of dyeing, artisans create very particular decorations. To make this happen, the parts of the fabric that do not have to absorb the colour are protected. It is fascinating to experiment with this technique using **vegetable dyes** obtained from plants and vegetables (for example, from beetroot, wisteria or nettle).

Thanks to this procedure, it is possible to produce very original abstract decorations. The name of this technique derives from the word "*shiboru*", which means twisting, tightening and pressing. In India and other countries such as Malaysia and Indonesia, similar dyeing techniques have different names, such as banda and tritik. Compared to the more well-known "tie and dye" techniques, shiboru produces much more imaginative, rich and varied decorations.

Shimenawa": The Sacred Rope⁴⁷

The *shimenawa* is a traditional rope across an object or space to denote its sanctity. They are made from *washi* (the Japanese paper described in paragraph 1.2.2) and folded into a zigzag shape. *Shimenawa* that is suspended across space is usually thicker in the centre and taper toward the ends, while that tied around a sacred object is of a consistent thickness. A shimenawa is frequently hung to the torii, making it one of the first things one sees when visiting a shrine. Shimenawa also encircles sacred trees. In Japanese homes, one often sees a shimenawa in front of the household shrine, and it is a New Year decoration hung above the front door.

Economic information of Yubune Village

Years ago, the centre of Yubune and Wazuka business was tea and **forestry**, but now the forestry is declining due to the absence of demand for wood by cheap imported materials from foreign countries. The **tea industry** was also affected by the decline as the forestry because when the bidding began after the WWII and the low-quality green tea could be shipped quickly, so the price of the tea of Wazuka was not profitable and it declined and waned.

TEA SECTOR

Tea productive sites in Uji area

There are **113 active tea growers** and **21 registered tea plantations** inside Uji Area from the total population of 189,609 residents.

Although the brand name of Uji Tea might not be a familiar name among most people, Japanese green tea from Uji area is prevalent among Japanese people as it is regarded as a high-quality tea with health benefit properties. For the Japanese green tea enthusiast, teas which are cultivated and produced from Uji Area, especially powdered green tea, which is known as matcha is the benchmark of high-quality tea in Japan.

There are three types of tea produced in Uji Area mainly consist of tencha, gyokuro and sencha. Most of these tea products use the same tea cultivars, whereas the differences occur in the cultivation process.

Currently, **Uji Area is the oldest and most famous tea growing region in Japan**, where according to historical archives, tea cultivation in the area began in 1191 AD (Kyoto Prefecture Government, 2011). Originally Uji Tea refers to tea products which are cultivated within the borders of Uji Area, and it is well known for its excellent quality as it only used to cater to the nobility. Because of its resource consuming cultivation methods, traditionally the tea produced in Uji Area is only available in a low volume, therefore to comply with the continuous high demand from consumers, the **Uji**

cha Cooperative (京都府茶業組合) (2006), a wholesaler collective, defined Uji Tea as tea products which are grown in four prefectures: Kyoto, Nara, Shiga and Mie; and processed inside Kyoto Prefecture by a tea wholesaler based in Kyoto Prefecture.

In comparison with wine products, where the information label is printed on each wine bottle, unfortunately on most tea packages information about the location of the tea-growing region is not available even for products which are sold domestically inside Japan.

Census about tea farmers and factories

WAZUKA

According to Wazuka data of 2016, there are 292 tea farmers in that area, and the tea plantation surface is around 595.1 ha in the area, which is the 37.1% of Kyoto green tea production.

The number of Sencha factories was 105 in 2016, which is quite different from the total amount of tencha factories in the area which are just 25. The total production amount is 725t which is the best in Japan according to the production standard.

YUBUNE

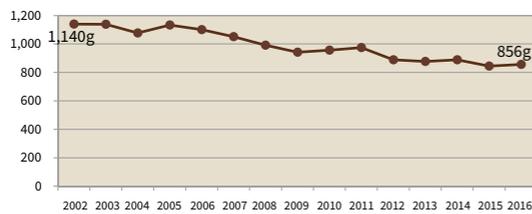
Yubune village counts 13 tea farmers, we know that this is a quite low amount, but compare to the number of villagers in the area which are 299, it represents a relevant data.



3.3.5 Tea consumption

The consumption volume of green tea (*leaf tea*), which had been on a **declining trend**, has recently remained unchanged. Indeed, **PET-bottle green tea** beverage product is on the **increase**, doubtless due to the quickly ready to use consumption.

Change in consumption volume of leaf tea per household



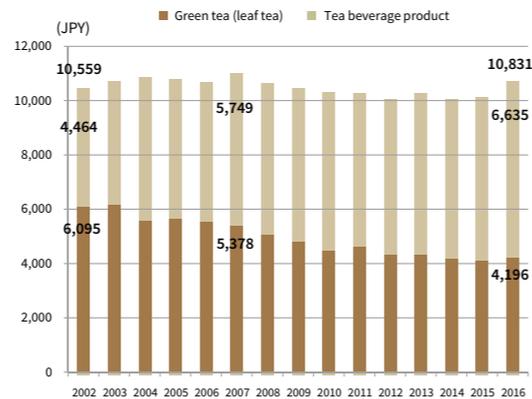
The total annual expense per household of green tea (leaf tea) and tea beverage product is about JPY10,000. However, the amount of spending of tea beverage product has come to exceed that of tea leaf, showing a consumer choice to a more convenient style of tea consumption. On the other hand, the consumption of soda and mineral water has been increasing.

Gradually the consumption of brewed tea with leaves is decreasing, and nowadays families consume 856g of tea leaves, which means 2,3 g per day. A teacup contains 2 g of tea leaves, so it means that a family consume only one cup of tea each day.

In 2015, the consumption volume of green tea

beverage product reached a record-high, which justifies the decreasing of the consumption

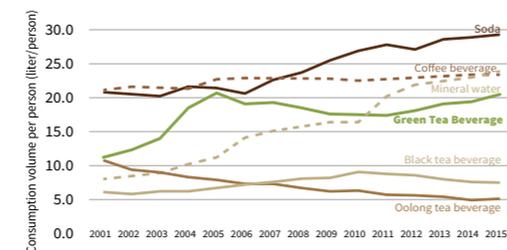
Amount of annual expenditure for green tea leaf/tea beverage product per household



of leaf tea. From 2007, the amount of expenditure for tea beverage product exceeds that of green tea leaf.

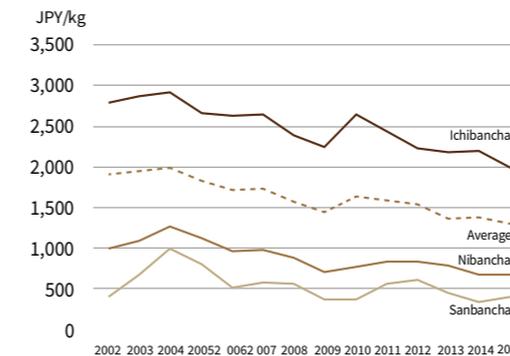
Looking at the chart of the change in consumption volume of soft drinks, it is clear how the **consumption of fizzy drinks is increasing** at the expense of the consumption of Oolong, Black and a Green tea beverage.

Change in consumption volume of soft drinks



Talking about the price of leaf tea, it was on a higher trend until 2004 due to increased market in PET-bottle green tea beverages. However, after 2004, the slowdown in demand is pushing the crude tea price descending.

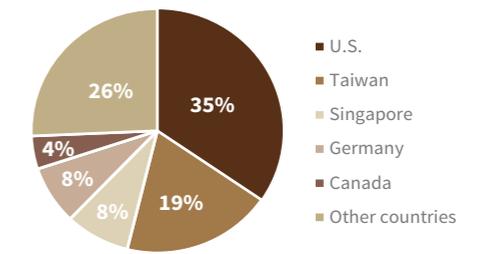
Change in tea price (crude tea and regular Sencha)



Indeed, the price of crude tea has decreased in 15 years, and the price of import Chinese green tea has doubled in 7 years.

Tea import turned to decline as a percentage of domestic tea increased, decreasing to only 20% in ten years.

Major countries importing tea from Japan



Thanks to the growing interest in Japanese food in foreign countries, **export volume increased** a fourfold in ten years. The export to the U.S. is about 40% of the total Japanese tea exports.

In 2016, the green tea export increased from 2015 by 14%³⁴.

In 2015, consumption volume of green tea beverage product reached a **record-high**  **decreased**  The consumption of leaf teas **decreased**

Change in price of import Chinese green tea

Year	2009	2010	2011	2012	2013	2014	2015	2016
Price (JPY/kg)	245	252	261	285	382	476	582	520

Unit: JPY/kg

Act on Promotion of Tea Industry and Tea culture

The "Act on Promotion of Tea Industry and Tea culture" came into effect in **April 2011**, and it is described in the report of MAFF "Current outlook of Japanese Green Tea"³⁵.

1. Purpose of Act

The purpose of this Act is to provide for the development of necessary policies by the Minister of Agriculture, Forestry and Fisheries, and to take various measures such as securing stable business management of tea producers, expanding consumption, promoting food education using tea to contribute to such consumption, promoting export and disseminating knowledge on tea tradition, to contribute to the achievement of sound development of tea industry and healthy and affluent lives of nationals.

2. Summary of Act

(1) Development of basic policy (Article 2)

The Minister of Agriculture, Forestry and Fisheries shall provide for a basic policy on the following matters: (i) significance and basic policy for tea industry and promotion of tea culture; (ii) setting a target for production quantities according to long-term perspective on tea demands; (iii) measures for the promoting tea industry; (iv) measures for the promotion of tea culture; and (v) any other matters necessary for the promotion of tea industry and tea culture.

(2) Development of promotion plans (Article 3)

Prefectures shall make an effort to develop the promotion plan by the primary policy.

(3) Assistance measures by the national and local governments (Articles 4 through 10)

The national and local governments shall make an effort to implement the assistance measures with the following matters:

(i) securing stable business management of tea producers (e.g. improving environment of tea fields, assistance in replanting of tea trees and promotion of disaster prevention); (ii) improvement of processing and distribution (assistance for projects for creating new added value through integral collaboration of agriculture, manufacturing, retail and other sectors) (iii) promotion of quality improvement; (iv) promotion of consumption; (v) promotion of export; (vi) promotion of tea culture; and (vii) commendation of contributors to tea industry and tea culture.

(4) The assistance of the national government (Article 11)

The national government must make an effort to implement necessary measures such as providing information, advice and financing to local governments.

3.3.6 Tourism

Tourism in Japan has **continuously been increasing**, thanks to the commitment by the government and citizens to a greater openness to the world after the Second World War. The majority of the tourists are Asian; especially they come from China.

Japan attracts tourist for lots of reasons: the **architecture, nature, history, culture, food**. Indeed, there are lots of shrines, pagodas, imperial palaces, but also natural parks, onsen. There are two superior periods for visiting Japan: during the **Hanami** (the cherry blossom) and the **Momiji-gari** (the period of red maple leaves).

Responsible tourists who love experiencing the culture will appreciate the variety of typical food and beverage that Japan offers, including indeed green tea.

Indeed, going into details with tourism in the intervention area, it is clear how green tea is the main attractor for tourists.

As mentioned in the previous chapter, the **Uji area is one of the most famous areas for appreciating Japanese green tea**, because it is one of the leading production areas. Uji area attracts mainly inner tourist, Japanese people who are interested in tea culture. Indeed, the Uji area is a kind of place to **escape from ordinary tourism**.

The qualitative analysis of tourism is focused on three different aspects: landscape, culture,

and products/food. Indeed, for the research, those aspects are more relevant than others.

Talking about the tourist experiences related to landscape, lots of them concern the tea sector. Tourist can harvest tea field during the harvest session and learning about tea culture. We noticed that this kind of harvest session if offered almost all of the summer, spring and autumn, so it is a fake harvest; it is all explained in *chapter 6*.

Besides harvest sessions, tourist can take part in tea field tours for enjoying the view. Also, the Wazuka area is known for the mountain bike paths spread through the woods. Along the Wazuka river, tourist can attend to a cormorant fishing demonstration, which can be seen on summer nights. Fishers using fire, nets and trained birds make for an exciting spectacle. During fishing season, there are boat tours that on the river that will get tourists very close to the action for 1800 yen.

The tourist attractions related to the Japanese tea culture do not include just tea. Indeed, other areas revolve around tea sphere, such as the **Shodō** (Japanese calligraphy), **kimono**, **pottery**. For example, tourist can attend a Japanese calligraphy lesson, that is considered an incredible form of art.

Furthermore, being the tea capital of Japan,

Uji is the perfect place to try a traditional **Japanese tea ceremony**. The municipal government holds it, (Taiho-an Tea House) is next to the Uji River. It offers tiny, authentic tea ceremony rooms ("honseki") and a larger one ("ryureiseki"). Tea can also be enjoyed at Mt. Buttoko observatory, that offers a decent hike and a view of the area.

Tourists can experience many activities related to food and products. For example, tea ceremony sweets can be tasted and purchased in some tea shops in the area. In some tea factories, people can attend a tea tasting lesson and create their tea as we did in Nishio (paragraph 3.2.1). Also, people can brew tea leaves into tea in the proper way through a brewing lesson. On AirB&B, tourists can book some experiences related to food like cooking lessons, that allow to learn how to cook typical Japanese dishes thanks to the experience of local people.

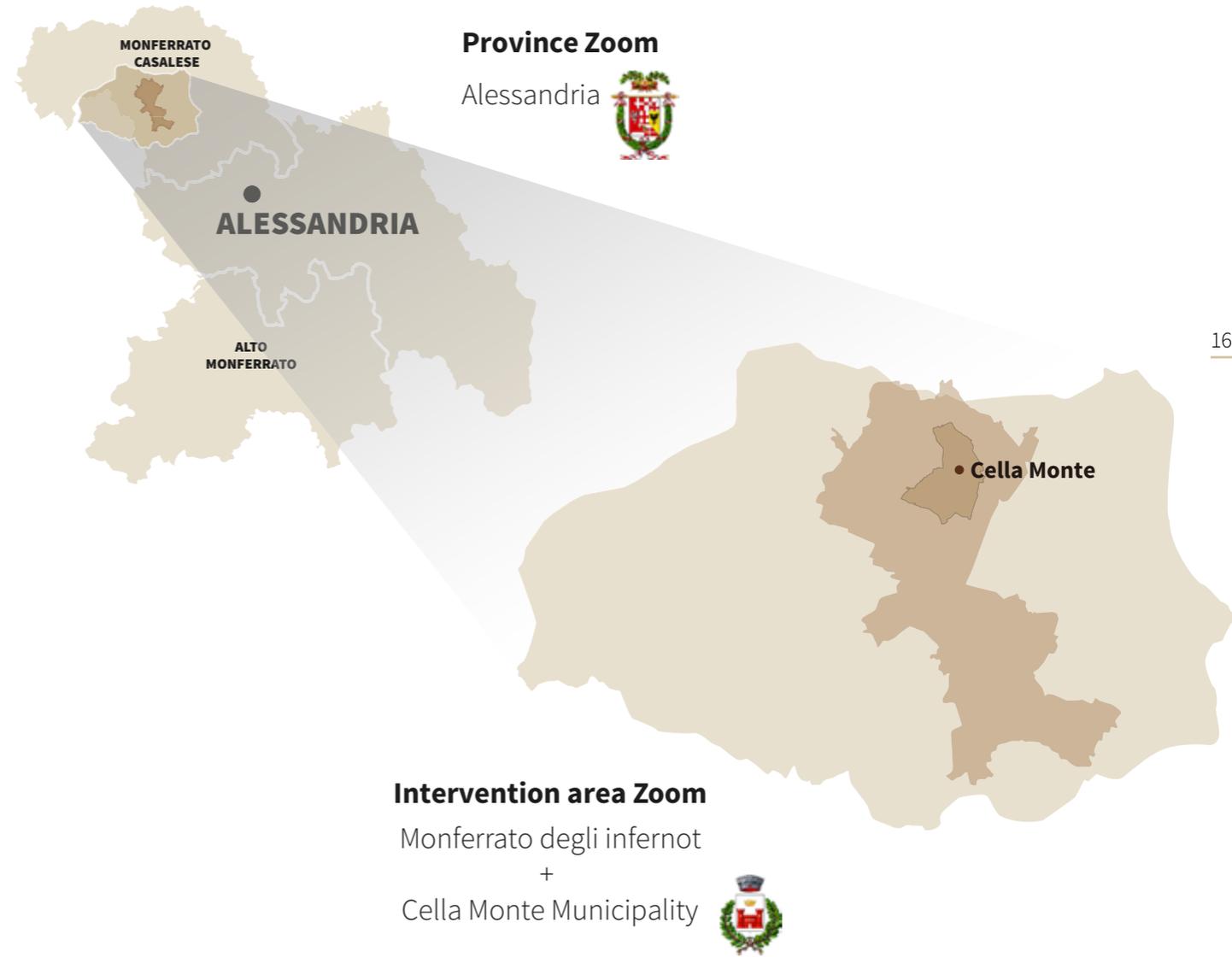
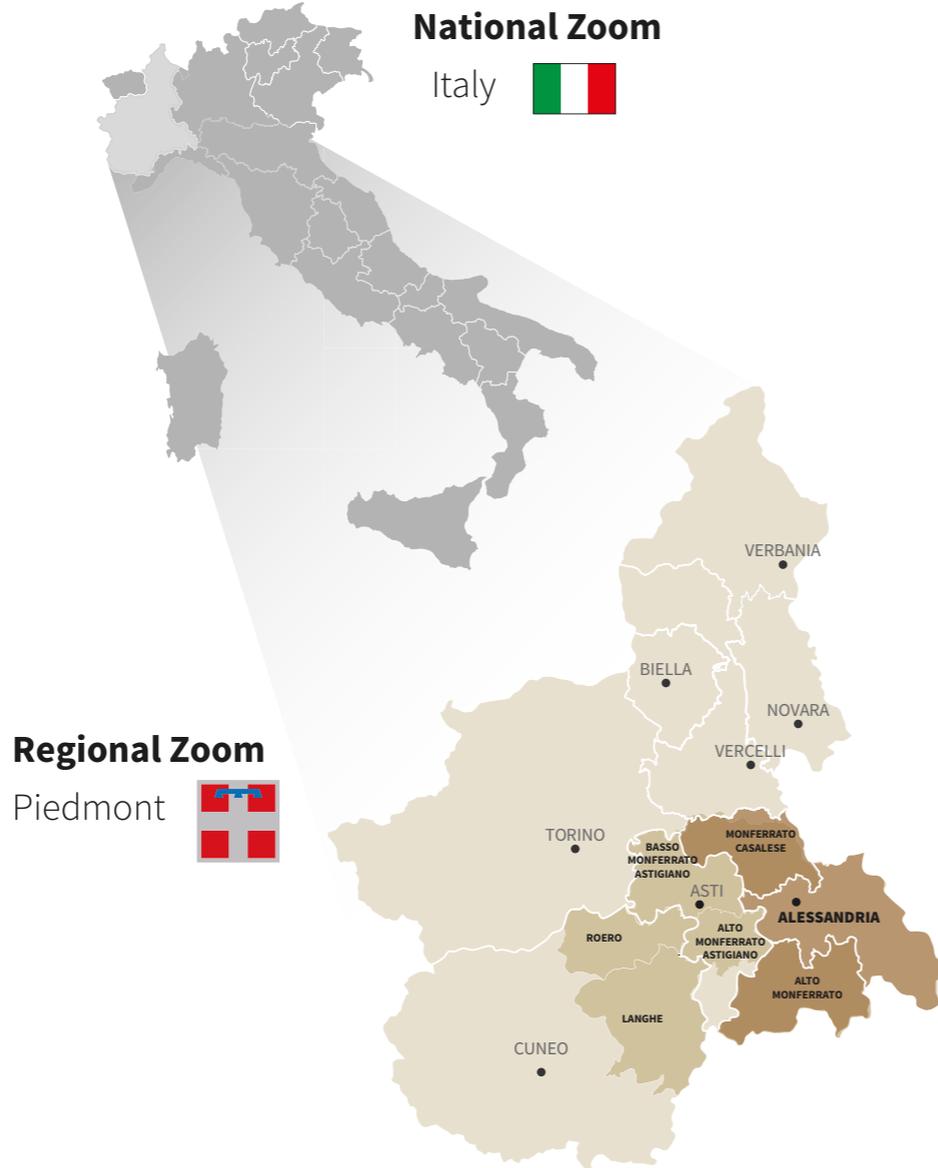
Kyo pottery (a type of Japanese pottery traditionally from Kyoto) has been a cherished local tradition since the Muromachi period. At Sumiyama city (Uji area), visitors can tour factories manufacturing pottery in the Kyo and Kiyomizu traditions and also design and painting their pottery.

It is essential to underline for this research that it is not always easy to find all the information tourists need. Indeed, lots of websites are in Japanese only, so experiences that must be booked are suitable only for Japanese speaker.



3.4 Qualitative and quantitative data analysis about the wine sector

The holistic diagnosis merged quantitative data found thanks to **website and books read** (so-called desk research) before the workshop and qualitative data received from the days spent during the workshop in **Cella Monte** (so-called field research).



3.4.1 Geography

PIEDMONT REGION - MORPHOLOGY

The analysed area of Cella Monte is in the Alessandria province, Monferrato area, in the Piedmont region.

Piedmont (Italian: *Piemonte*) is a region in northwest Italy, one of the twenty regions of the country and the capital of Piedmont is Turin. It borders the Aosta Valley region to the northwest, the Liguria region to the south, the Lombardy and Emilia-Romagna regions to the east and; it also borders Switzerland to the northeast and France to the west. The total area is about **25,402 square kilometres**, and the population is 4,377,941 (as of 30 November 2017).

Piedmont is surrounded on the north, west and south by the **Alps**, including **Monviso**, where the Po rises, and Monte Rosa.

The morphology of Piedmont characterised by the significant presence of **mountains (43.3%), by extensive areas of hills (30.3%) and plains (26.4%)**. It is coincident with the upper part of the drainage basin of the river Po, which rises from the slopes of Monviso mountain in the west of the region and is Italy's largest river.

The Po drains the Alps and Apennines, which surround the area on three sides.

The **Monferrato Casalese** or **Basso Monferrato** is a hilly area between 120 and 350 meters

above sea level, with some higher elevations (Sacro Monte di Crea).

The **Alps and the sea influence the climate**

of Monferrato and make it optimal for the vine plant. The semicircle of mountains offers protection from storms from the North and the West, so the annual rainfall is limited to around 600-700 mm of rain; winters are relatively gentle compared to latitude, with a minimum of a few degrees below zero and, selected, the snow rules are modest.

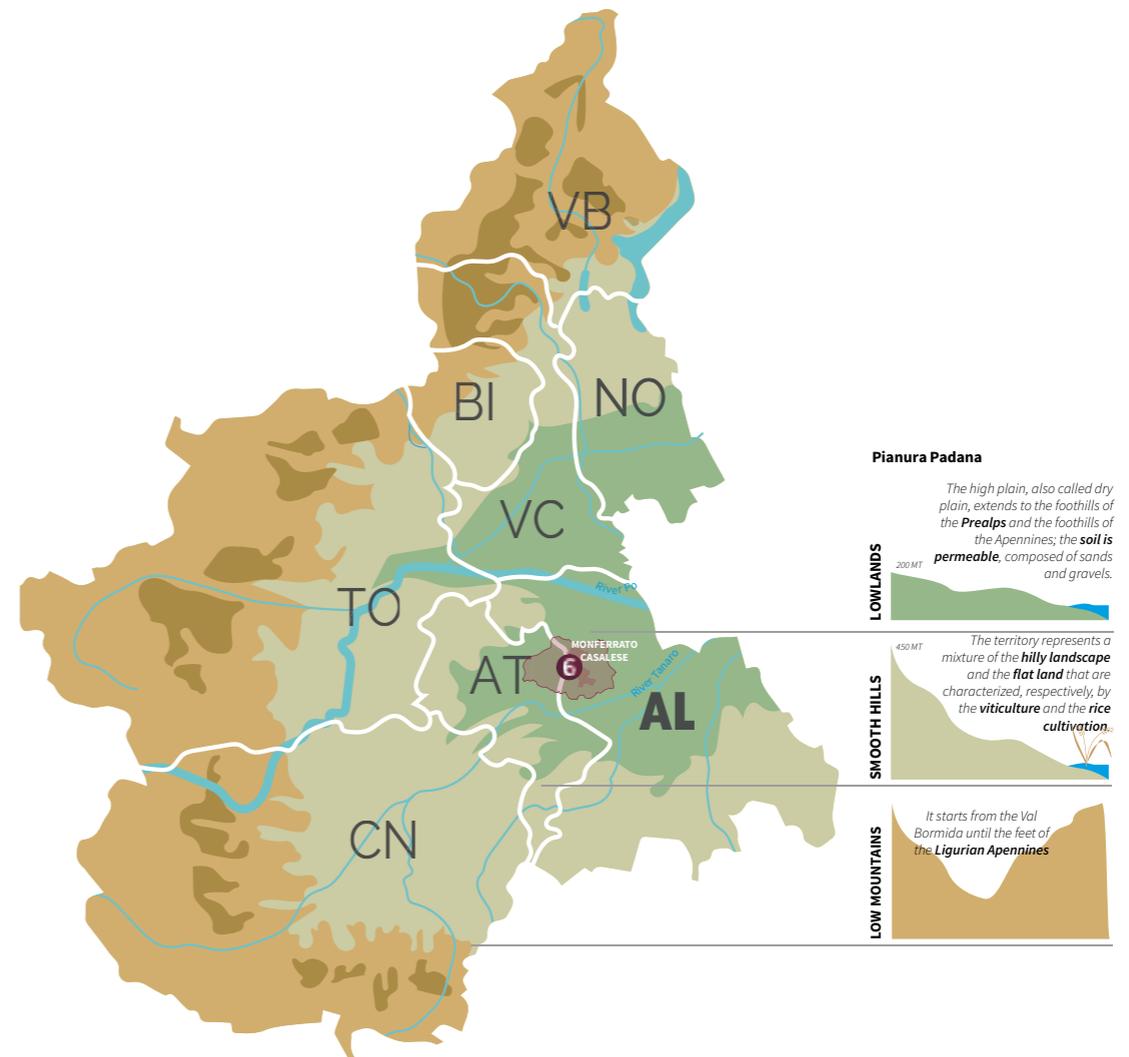
In the Monferrato, the **vineyards occupy the hilly slopes**, except for the northern slopes, reserved for the hazel grove or the wood. The hill is the optimal environment for viticulture.

Cella Monte is a town the **Province of Alessandria**, located about 50 kilometres east of Turin and about 25 kilometres northwest of Alessandria.

Cella Monte borders the following municipalities: Frassinello Monferrato, Ottiglio, Ozzano Monferrato, Rosignano Monferrato, and Sala Monferrato. The area is 5,6 square kilometres, and its population is 499 until 2017.

The analysed area of Cella Monte is located in the Basso Monferrato district in Alessandria province.

There is a natural reserve called "**Sponde fluviali di Casale Monferrato**" that covers an area of 119 hectares creating a link between the city and the river.



CLIMATE DATA

The area is characterised by a typically Po Valley climate with **cold and foggy winters** and hot and sultry summers. The rains are not very abundant (about 700 mm), and fall mainly in autumn and spring. It has a more **continental mild** than the rest of Piedmont. Winters, due to the higher number of foggy days, tend to be more rigid (average of +0.4 degrees in January), while summers are sultry but much more sunny and dry: the hottest month, July, has a average temperature of +24 degrees and is also the most dry, with 32 mm of rain often concentrated in one or two thunderstorms (at the height of summer the Atlantic perturbations tend to flow much further north). Often the hail during august damage the grapes used in the grape harvest.

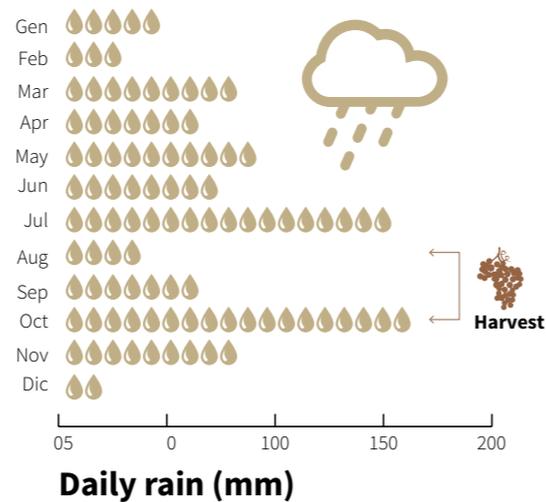
The average temperature in July: 24 °C

The average temperature in January: 0 °C

Annual rainfall 700 mm

Drier months: February and December

In Monferrato the vine sprouts in April and blooms in early June. The black grapes get coloured in August: the harvest begins in early September for the most precocious varieties (Chardonnay) and ends in mid-October for the later ones (Barbera), with considerable differences linked to the vintage trend.



THE SOIL AND THE FOSSILS

A territory is the reflection of the land on which it is set, and these are derived from the rocks that form the substrate on which the composition of the soil somehow conditions any biological activity. The **Monferrato soils** and the underlying rock that originated them derive from more or less deep marine sediments. The "beach line" is still recognisable in areas where loamy and light soils become sandy and darker (Viarigi, Castagnole Monferrato). To this calcareous, alkaline matrix, slightly weak in nutrients, the characteristics of soils and therefore of wines are bound, rich in fruity notes, which are obtained from this particular "terroir". The other elements that compose it are the climate, the native vines, and a millenary tradition of viticulture.

The subsoil of a vast area of the Monferrato consists of marly arenaceous deposits known as "Pietra da cantoni", from which blocks of building stone (the cantoni) are made, with which they are built, in all or part, most of the buildings.

Inside the rocks, there are sometimes fossil remains of organisms of the past, which have been preserved for millions of years and this paleontological heritage represents one of the most intrinsic and descriptive features of history and events, even shocking ones,

that have transformed and formed a specific territory. One understands, therefore, how

much they are a fundamental part, sedimented in the landscape and become integral and essential elements of the rediscovery and awareness of the places. This particular territorial identity is well marked, especially in the Asti and Monferrato areas. 5.4-1.8 million years ago, the Mediterranean presented a somewhat different configuration from the current one. The "Bacino Astigiano" was a full, shallow sea inlet bordered to the south by the Langhe hills, to the west towards the Cuneo bay from a less deep-sea area to the north by a low island, represented by the current northern Monferrato, while to the east it communicated with the Padano sea. In the central zone of the basin, deeper, muddy sediments were deposited: the "Argille Azzurre", which in our zones can emerge in the bottom of the valleys and the beds of the watercourses; towards the edges or coastal areas, instead the sandy deposits were accumulated such as the "Sands of Asti".



Microfossils and macrofossils are preserved in rocks typical of the Monferrato Casalese, laid in ancient sea basins, such as the *Pietra da Cantoni* or clays, sands and limestone outcropping in various localities.

Over time, due to the accumulation of detrital sediments and the withdrawal of the sea following the raising of the seabed, the depth of the basin decreased, and the continental

environment gained ground and overlapped the marine areas. Numerous paleontological shreds of evidence can be found of all the stages of the evolution of the Asti area in the Pliocene. The clays contain many fossil remains of deep-water organisms, such as associations with foraminifera, molluscs with common gastropods, other invertebrates such as brachiopods, crabs and sea urchins. In the "Sands of Asti" there are abundant fossils, in particular, mollusc shells, which sometimes form thick layers of a specific power.

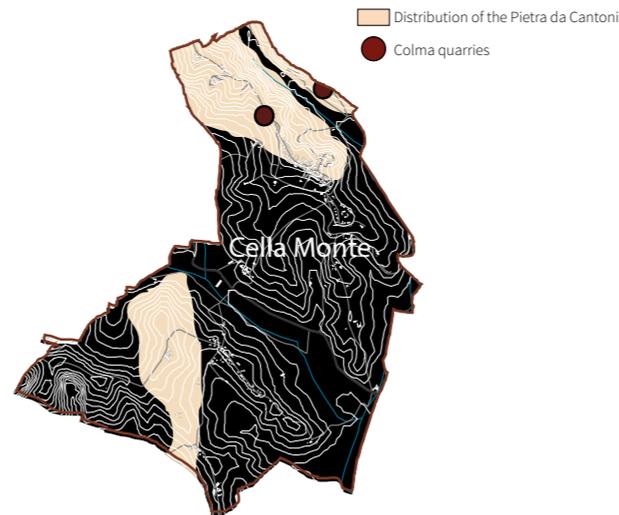
The *extraction of pietra da cantoni* was a traditional activity of the area and has indelibly marked the landscape. It is the reason why in the town of Cellamonte the "Ecomuseum della pietra da cantoni" was established, among whose projects there is also the reopening of a quarry for the renovation of historic buildings and the enhancement of the *infernot*.

PIETRA DA CANTONI QUARRIES

The identification of quarries is not easy, due to the low level of mechanisation when these were in operation; this allowed almost total revegetation by nature to make them part of the landscape.

There are also examples of reuses and transformations that have altered its appearance and identifiability: the quarry of Rosignano now public square or the quarries of Ozzano and Ottiglio, become respectively lime quarry and cement and sand quarry, that now are closed.

The most active quarries are located in Rosignano Monferrato municipality, and it is called *Colma quarry*. Nowadays, these quarries are neglected and in inadequate conservation states, without any security measures. The extraction process continued until 1950.



In the past were done some studies about it, for geo-touristic reuse but at the end, nothing has come of it. The Ecomuseum of pietra da cantoni started some projects about it to allow didactics experience, virtual reality, videos, photos of the intern of the quarries, but also, with the aims to restarts a limited extraction activity to obtain stones for maintenance and restoration of local buildings.

Moleto quarry is an area of about 84 hectares, located in the municipality of Ottiglio in the province of Alessandria, 15 km west of Casale Monferrato and more precisely in the area called "Cave di Moleto".

The area is now a territory of deep mining whose origins date back to the first decades of the XX century during which pietra da cantoni were obtained, intended for construction use having a size of 50x25x15 cm approximately. Subsequently, the activity continued with the extraction of the Marna rock for the production of concrete, then completed in 2000, when the mining concessions were exhausted.

LAND USE IN THE ANALYSED AREA

The landscape in the Monferrato area could be described with a *patchwork pattern* which gives the unique features of the landscape. The pattern is composed of scattered *settlements, wooded areas, meadows, vineyards and agricultural fields*.

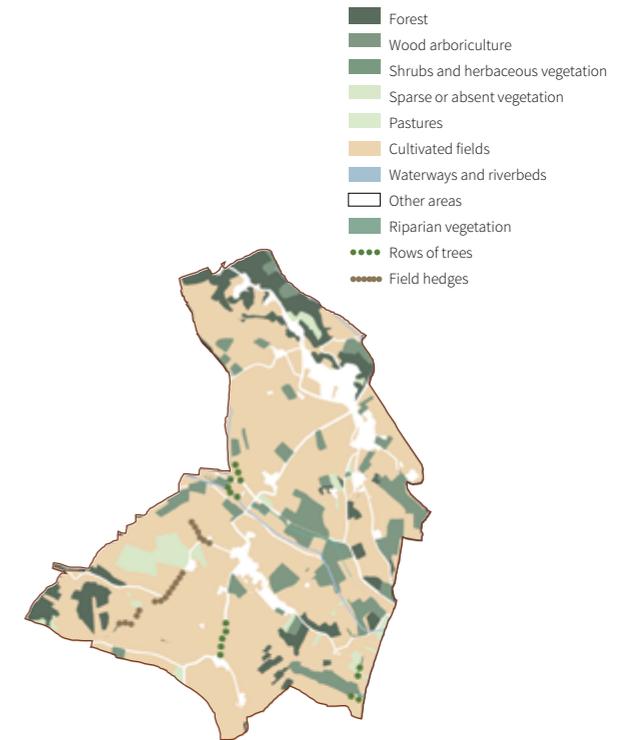
Settlements concentrate on the crest of the hill, following the shape of it. They are built of the same local material, that gives uniformity to the landscape.

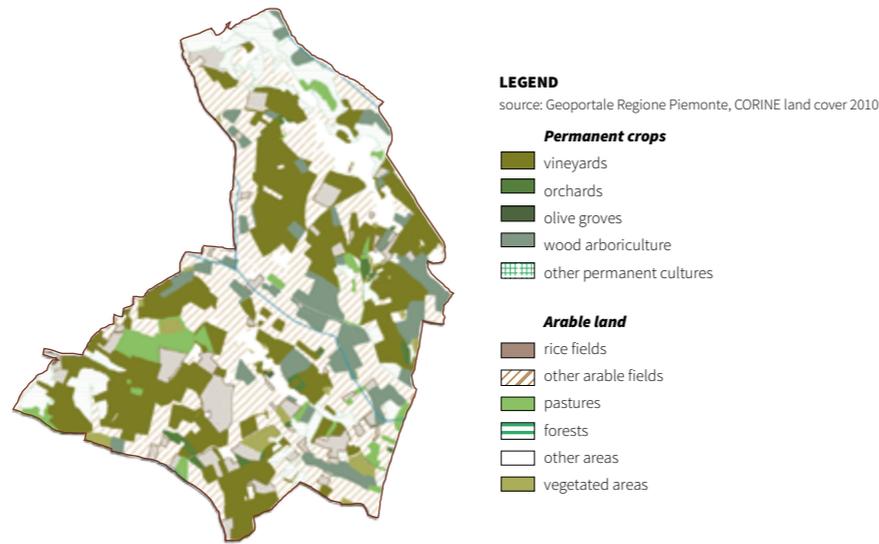
Wooded areas are usually located around the settlements. There is an increase of them, and many of these are the result of artificial reforestation.

Meadows are scattered mostly in the lower areas. The maintenance of these areas is crucial because if they become abandoned, they interfere with the traditional landscape.

Vineyards are usually located on the southern side of the slope because of sun exposure.

Agricultural fields give rhythm to the landscape for their shape and colours and alter and modify the landscape due to the crop rotation.





WOOD AND ARBORICULTURE

In the forests of Piedmont live almost 1 billion trees, and there are 52 tree species and 40 shrub species. The wooded area tends to increase: since 1960, it has almost doubled, following the spontaneous colonisation of abandoned land and for artificial reforestation and is more than double that of 1880.

In addition to wood production, the environmental and social functions of arboriculture and, more generally, of afforestation (planting with forest species on agricultural land) have been recognised for several decades:

- reconstruction of ecological networks, improvement of the landscape and protection of water resources, especially in lowland and intensive farming areas;

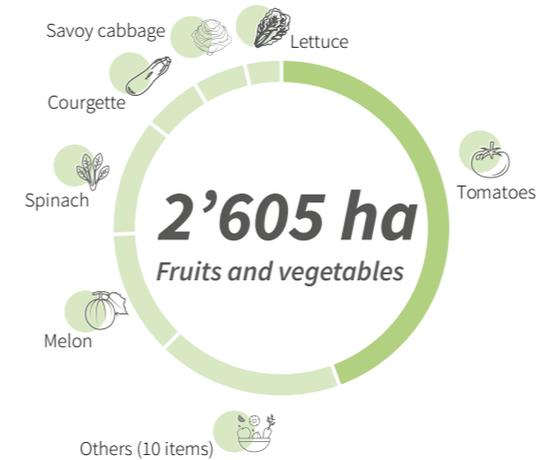
- reduction of greenhouse gases, through the absorption of carbon in plants and soil;

- protection of the territory and the soil from erosion, loss of organic matter and hydraulic instability.

In Piedmont, as in the whole of northern Italy, the prevalent type of woodland tree cultivation is undoubtedly specialised poplar cultivation, but in recent decades there has also been widespread planting with native broad-leaved trees, which grow less rapidly than poplar (medium-long cycle arboriculture). There has been a reduction in the wood arboriculture during the last decades; this decrease is mainly due to the reduction in poplar cultivation, due to lower profitability, and in part to the removal of the medium-long cycle arboriculture, at the end of the cultivation and contribution commitments.

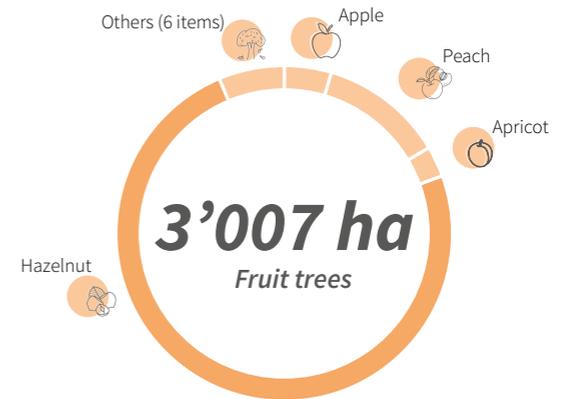
AGRICULTURE

The agricultural system in the province Alessandria occupies 100.000 hectares of fields. The vast central plain is mainly dedicated to cereal cultivation: wheat, barley, corn, soy, sunflower. The cultivation of sugar beets, destined for industrial production, is widespread. In the flat areas of the Casalese, the landscape is characterised by the presence of vast rice fields. In the Novese (Novi Ligure), the few flat areas are mostly used for cereal farming and

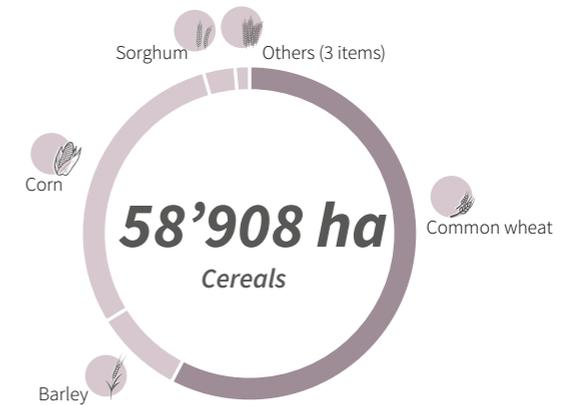


the fields are characterised by the presence of mulberry rows, introduced in the XVII-XIX century, for silkworm breeding. In the hilly areas of the Novese, Casalese, Acquese (Acqui Terme), Tortona and Ovada areas, the vine dominates unchallenged, and the production of wine is remarkable. Val Curone is a common area of fruit production, especially hazelnut. Lawn cultivation is widespread in the valley of the Acquese. Along the rivers (the Bormida in particular) extends the poplar cultivation. Almost half of the fields are dedicated to the

growth of forage crop, more than 42.000 hec-



tares. It is directly linked with the breeding sector. Alfalfa (*Medicago sativa*) is a perennial flowering plant and flower cultivated in 11.200 hectares. Then, there are 10.000 hectares of meadows. Grasses are in more than 7.600 hectares. 4.800 hectares are dedicated to the pastures parc, and the remaining parts are dedi



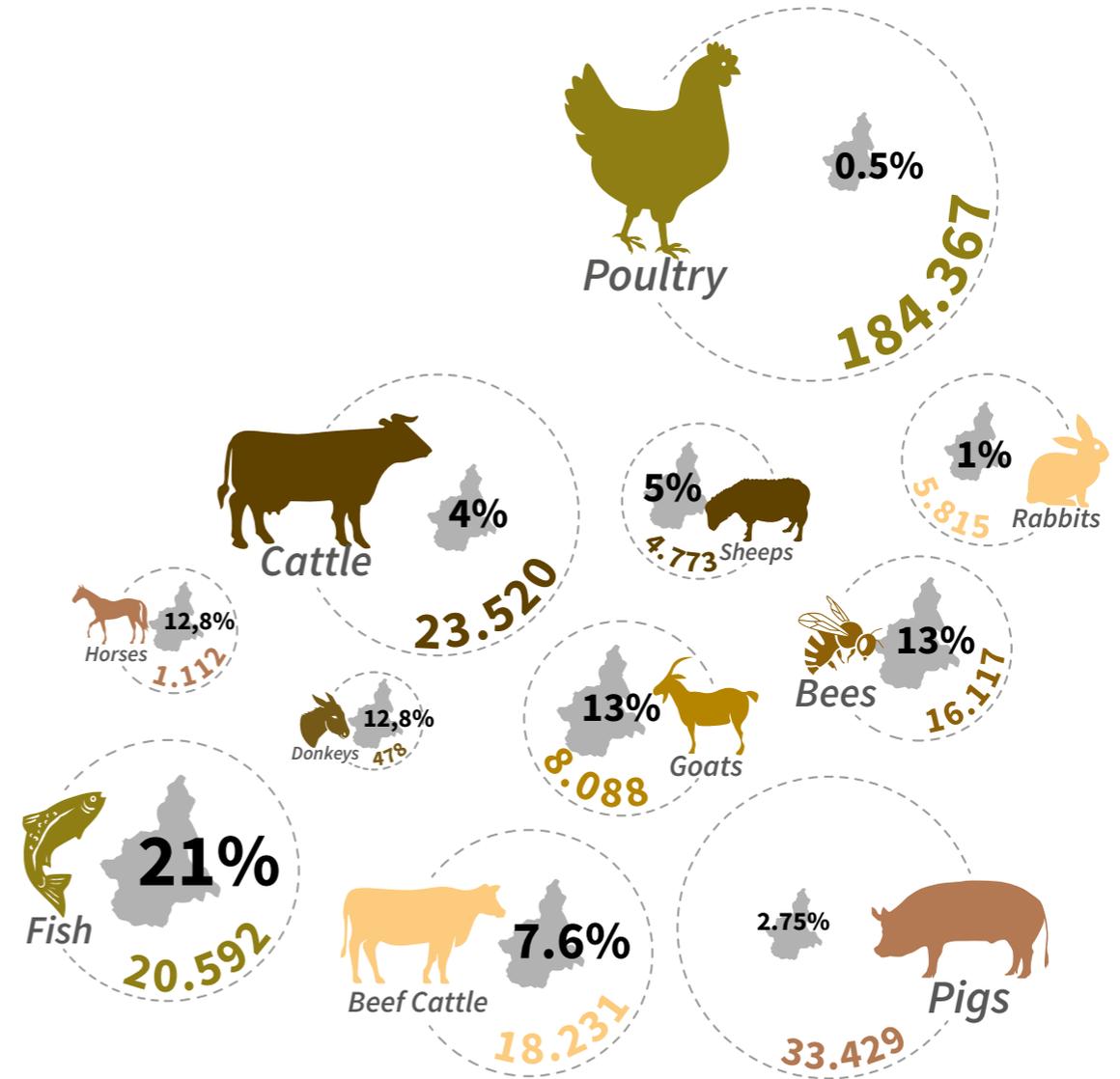
BREEDING

cated to the cultivation of corn and ryegrass. It is a significant amount of fields exploited to feed animals, so not for cultivating fruits and vegetables for humans.

A little less than 60.000 hectares are dedicated to cereals. Standard wheat fields occupy 34.000 hectares than there is the cultivation of corns and barleys. Being mostly a hilly area, there are no rice crops.

Roots and tubers are cultivated in 1.300 hectares, especially onions. Fruits and vegetables occupy 2.605 hectares.

Within the province of Alessandria, breeding is very developed. Even though the Piedmont region does not border with the sea, there is an important river fish breeding. The province of Alessandria provides more than the 20% of it, with more than 20.000 fish bread. In the second place, there is the breeding of goats an bees. Poultry is the most bread animals in terms of numbers, but it is only 0.5% of the breeding in Piedmont. The breeding of horses corresponds to 10% of the total Piedmontese one.



TRANSPORT AND INFRASTRUCTURES

The municipality of Cella Monte is not adequately connected with public transport. Since there is no train station, the village can **only reachable by car**.

Cella Monte is 84 km from Turin, by car it takes from an hour and 10 minutes to more than an hour and a half.

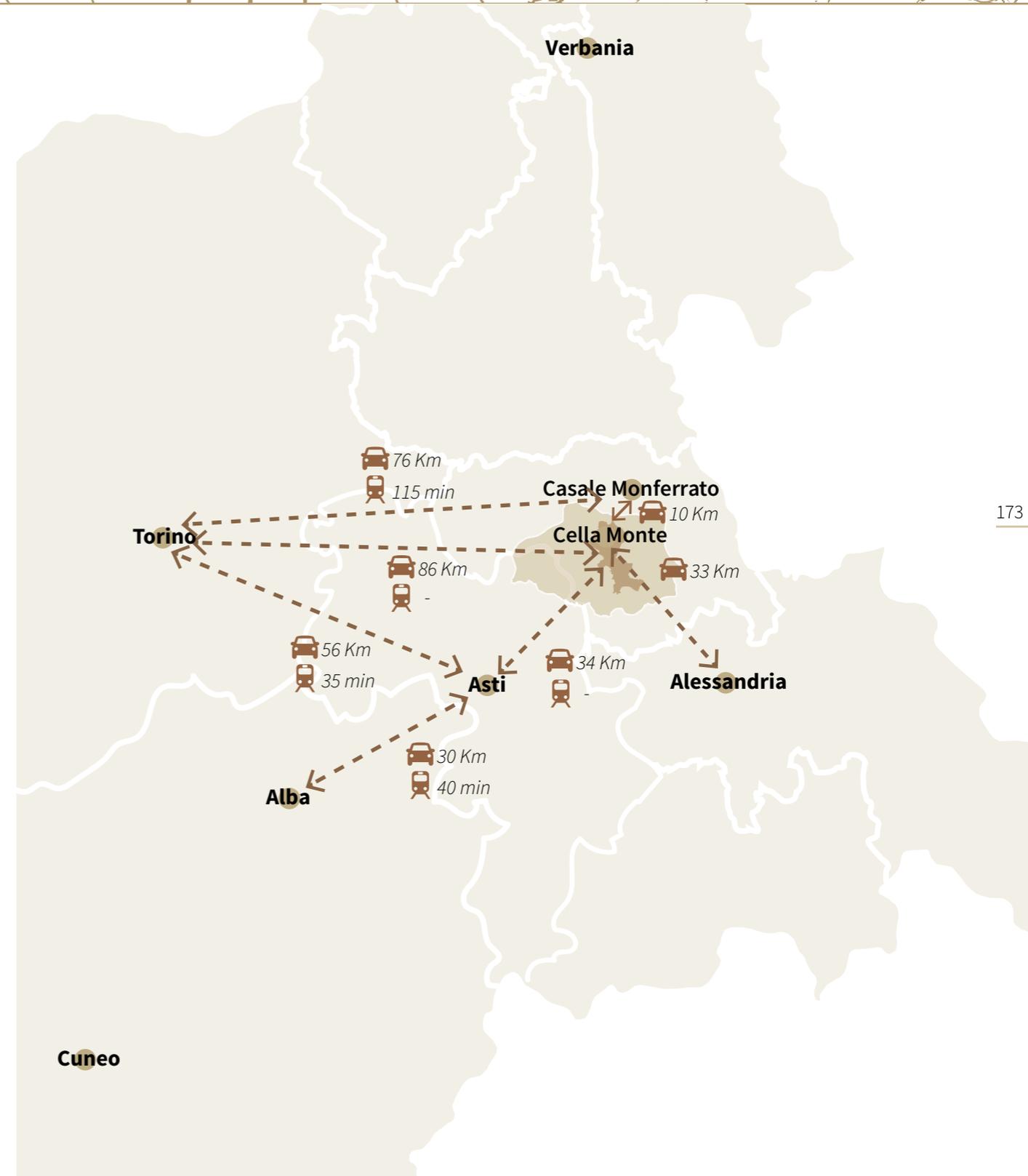
Instead, Turin is well connected with Casale Monferrato, a larger and more famous town than Cella Monte. Indeed, Casale can be reached both by the highway and by train. The provincial capital closest to Cella Monte is Alessandria, which is 34 km away and takes 40 minutes more. **Casale Monferrato** is the most important town near Cella Monte, it is only **10 km away**, and it takes 15 minutes by car.

In Alessandria province there are three small airports for tourist, one in Casale Monferrato and the other in Novi Ligure and Alessandria city. The intervention area is not crossed by highways and railways but just by province **roads, hiking and bicycle paths**.

Regarding the hiking paths, 40 routes make up the “*Camminare il Monferrato*”, a list of itineraries born from the collaboration between the **CAI** of Casale Monferrato some years ago,

the Special Reserve of Sacro Monte di Crea and the bi-monthly Il Monferrato.

There are not cycle routes outlined by tracks except for two wine-related routes. In the territories of the Monferrato, it is possible to rent bicycles to practise sustainable tourism and move quickly into the vineyards.



3.4.2 Demography

POPULATION

About the demographic analysis relating to the territory, we collected data on the **municipality of Cella Monte**, or the area of intervention of our research, and of the province of Alessandria to which the municipality above belongs, in order to have a more comprehensive context view. In the province of Alessandria has 190 municipalities and Cella Monte is 125 in descending order in the list of municipalities classified by several inhabitants.

In 2019 **Alessandria province** had **424.174 inhabitants**, with a percentage of about 51,2% of women and 48,5% of men. Talking about the housing density it is possible to say that it is relatively low because there are 118,4 inhabitants per km², which is a relatively low density, but we are talking about a countryside province, and Alessandria province does not have a big city centre town.

Analysing the municipality as a lower scale and consequently more particular, we can see that **Cella Monte**, in 2019, has province has **499 inhabitants**, with a percentage about 50,7% of women and 49,3% of men. Cella Monte has a housing density of around 90,89 inhabitants per km², which is a **low-density village**.

In general, this low population density allows the presence of substantial green areas in the

part of the Piedmont region, which is characterised by vineyards, crops fields and trees for truffle.

The **average provincial age** is around **48,1 years**, data that is a little bit more than the national one. An increase in this figure can quickly be expected in the coming years, mainly due to the lowering of the birth rate, which presents a negative trend, with a decrease from 7 to 5.9 in five years, while the mortality index grew almost analogously. In Alessandria, but generally in all Italy there is a decrease in births and ever-higher mortality, this trend could lead to a phenomenon of a decrease in the population, which has already been witnessed in recent years.

Talking about the average age of the population, we can make the same conclusive remarks for Cella Monte village, which, in 2018, registered 49,1 years old for the middle ages data. There is also a constant instability of the birth rate which in 2018, however, recorded a share of zero births per 1000 inhabitants in the municipality, with a consequent increase in the mortality index.

At the same time, the migration flow from or to Cella Monte to other municipalities or regions in the world is relatively low and irrele-

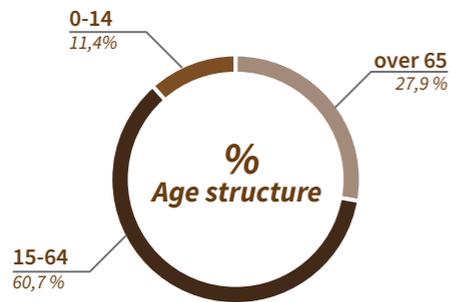
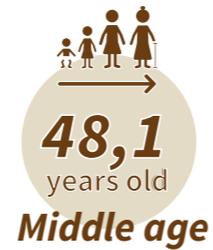
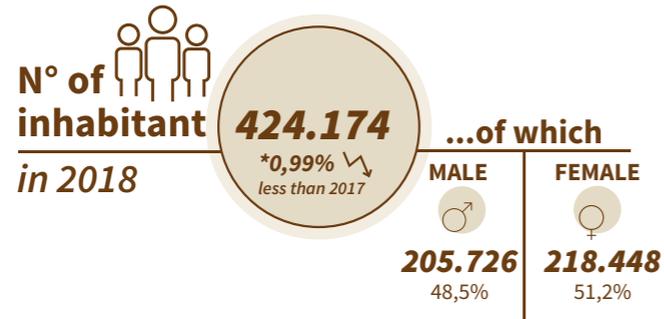
vant; probably this figure can be linked to the advanced state of the country's population.

Among the Piedmontese provinces, Alessandria ranks third in terms of attendance: if in 2005 5,6 out of 100 residents were foreigners, in 2018 the figure doubled with 11,1 out of 100 foreigners.

At the local level, if a distinction is made by citizenship, it is noted that the number of foreign citizens residing in the territory of the Municipality of Alessandria has a tendentially positive trend. The total amount of foreigners in Alessandria Province is 46.877 people, and the most significant foreign community is from Romania with 28.9% of all foreigners present in the area, followed by Albania (16.2%) and Morocco (14.9%).

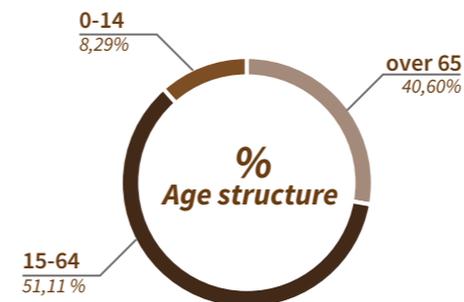
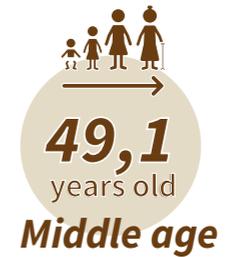
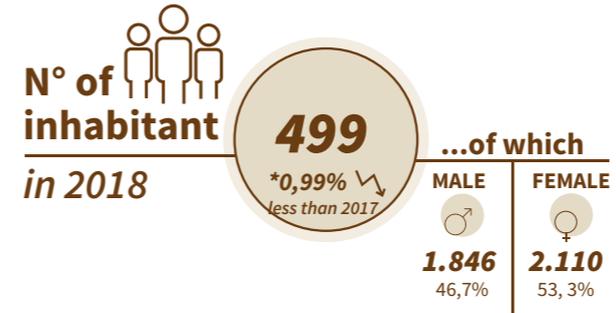
Cella Monte does not have the same number of foreigners in the village, because the total amount in 2019 represents nine people which is 1,8% of the entire community, most of them came from east of Europe the same as Alessandria province. This is because most of the people who work seasonally in the vineyards come from other parts of the world, the majority from East Europe. Generally, in Italy it is possible to say the same thing, most of the immigrants cover the demand for labour in the fields, especially in times of greatest need, such as the grape harvest in the vineyards, the harvest of olives, fruits or vegetables.

ALESSANDRIA PROVINCE



The largest foreign community is from **Romania** with **28.9%** of all foreigners present in the area, followed by **Albania (16.2%)** and **Morocco (14.9%)**.

CELLA MONTE



In Cella Monte there is a foreign community that comes once per year to work during harvest period. They come from **Romania** and **Albania**.

FAMILY

Alessandria province in 2018 registered 199.225 families. The number of components for each family was 2,09 on average, which has undergone a minimal reduction in recent years. It means that more and more families decide to have only one child or none. The balance among the number of births and deaths is negative because of the number of deaths is always more than children who born.

The same analysis made for Cella Monte shows very similar trends. The number of families in 2018 was 222. The average of components for the family is 2,25, which is similar to the national data. Also, in this case, the balance among the number of births and deaths is negative.

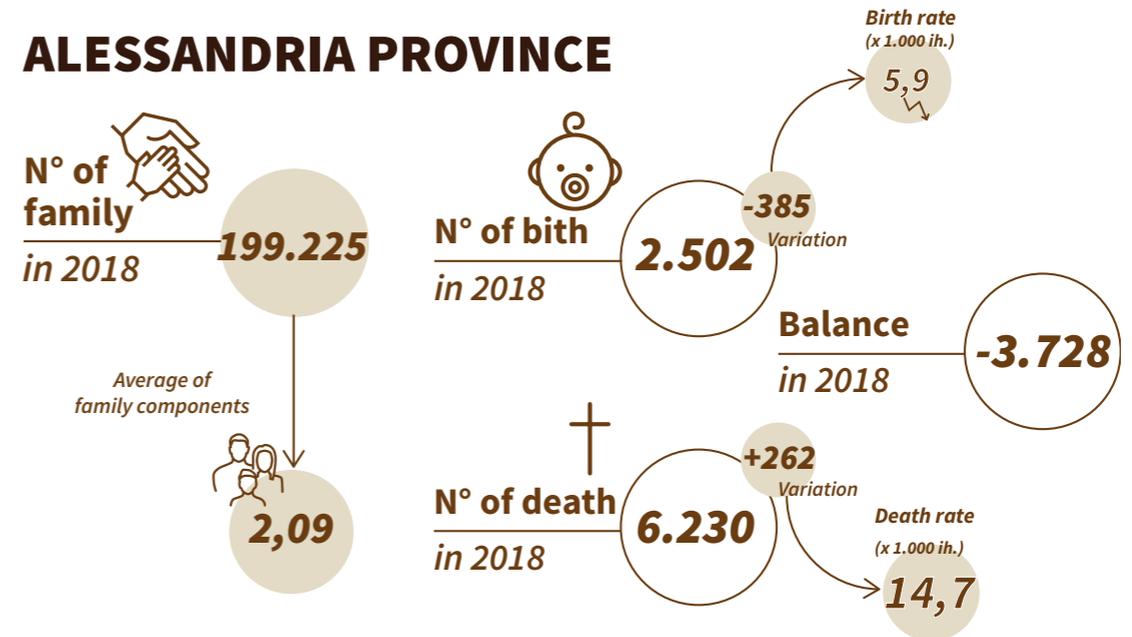
Education

Alessandria Province counts 171 kindergartens, 149 primary schools, 65 secondary school, 74 high school and some courses from 3 different universities.

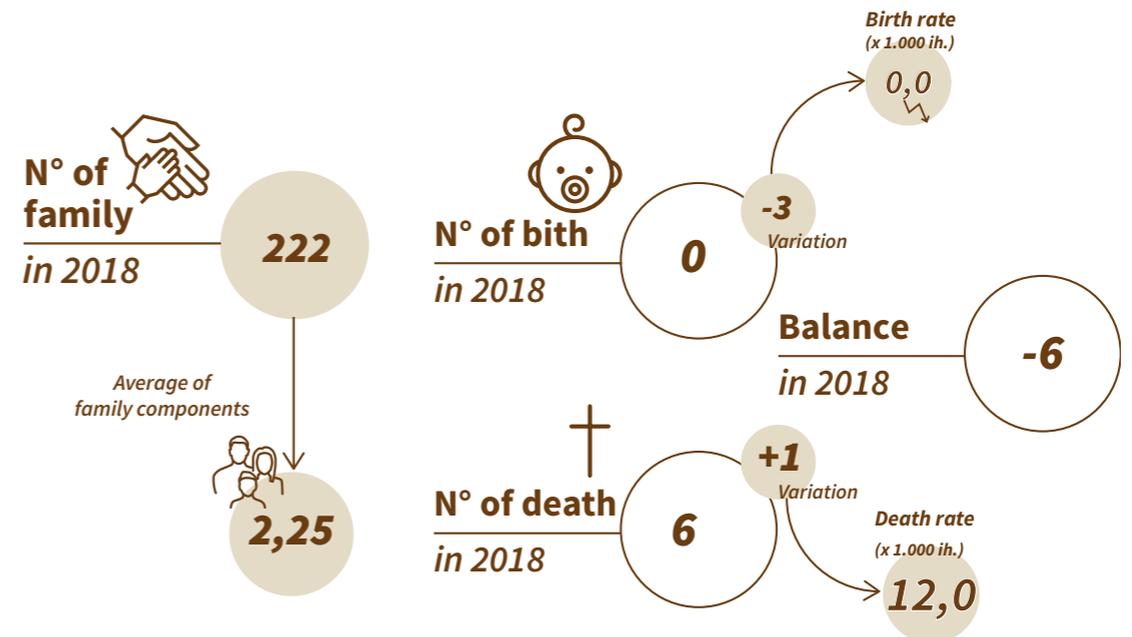
There are not schools in Cella Monte, but the students can attend lessons at schools close to Cella Monte, which count: 3 kindergartens, two primary schools, two secondary schools, two high schools.

In Alessandria province and also in small vilage like Cella Monte the majority of the population has a middle school or high school diploma, from this data it is perceived that the population is generally educated, but not specialised, or that most of the young people move to other regions, even that by changing residence for university studies, therefore not falling within the collection of census data.

ALESSANDRIA PROVINCE



CELLA MONTE



3.4.3 Cultural Aspects

Monferrato is a region surrounded by greenery, with a rich history behind it and a culture well-rooted in the territory. Some products in the Basso Monferrato kitchen are protected by certifications that enhance their excellence and relationship with the territory.

One of these certifications is the PAT: traditional agri-food products, nationally known certification. The "traditional products" are those whose methods of processing, conservation and seasoning are consolidated over time and are practised homogeneously and according to traditional rules on their territory for a period of not less than twenty-five years.

TYPICAL DISHES

The salient features of Piedmontese culinary culture are the abundant use of butter and lard (especially in the past), the consumption of raw vegetables, the use of sanato (veal meat of a few months fed with milk only), the choice of cheeses, the extensive presence of truffles, the preparation of breadsticks and the careful use of garlic (bagna cauda).

The recipes of Alessandria province cuisine are part of the popular tradition of Monferrato. There are many points in common with Ligurian cuisine and Provençal cuisine.

The essential ingredients are mainly meat, red wine such as Barbera or Grignolino, used for cooking or to accompany hearty dishes. But

also desserts such as bonet, street food desserts such as sweet focaccia or lacàbon and mixed appetisers such as cold cuts and salami. Basso Monferrato is also known nationally and internationally for its gastronomy, made of unique and sensational flavours and aromas: it therefore also has a vast and essential culinary heritage beyond wine.

First dishes

In Monferrato area, fresh pasta is real culinary excellence. In many areas of Piedmont there is typically stuffed pasta such as agnolotti with three roasts, but also other types of pasta such as egg tajarin and like pasta it is possible to eat polenta combined with sausage, cheeses and meats of the territory.

The meats

Among the meats, the best known is the excellent Piedmontese Fassona beef meat, with which they prepare exquisite roasts, braised meats, mixed Piedmontese fried and boiled mixed Piedmontese.

Cured meats and cheeses

Monferrato is also known for the production of a wide range of artisan cured meats: raw salami with pork, wild boar or donkey, natural or flavoured with wine, truffle, wild herbs; lard; bacon and cooked salami. Next to cold cuts, we often find cheese. There are numerous varieties: fresh, seasoned, vaccines, goats.

Monferrino truffle

Monferrato is undoubtedly the land of truffles, a rare product that attracts thousands of tourists every year on the occasion of the International White Truffle Fair.

In addition to dedicated festivals and fairs, tourists can also participate in the search and collection of truffles, under the guidance of "trifulai" experts and trained dogs.

Autochthonous fruit and vegetable products
The Piedmont Region is the first in Italy for biodiversity and cultivation of indigenous products. Only inside the Monferrato are 74 native and exclusive apple qualities from the area. The domestic trade-in products are the primary source of income for the Monferrato region, which boasts ten fruit and vegetable products requested nationally. Among all, there is the sugarloaf chicory, scientifically called *Cicorium Intybus* var. *Foliosum* is a quality of radicchio belonging to the Asteraceae family. It is called sugarloaf because of the high quantities of vitamins and sugars that make the leaf sweet. Orbassano celery is a quality of celery originating in the Monferrina region. In the 1600s, the Duchess of the Savoys, Anna Maria of Bourbon-Orléans, when she arrived in Italy from France, she cultivated the violet celery of Tours, softer and sweeter than the Monferrato celery of the time. Over the years, the two qualities of celery grafted thanks to the moist soils of the Orbassano area, naturally generat-

ing a new quality with red ribs on the top and an almond flavour.

Desserts and sweets

Among the desserts we find, a wide range of baked goods but not only, but also ancient recipes of products served as dessert. From the sweet bonet made with cocoa and caramel amaretti, until the ugly but good ones (biscuits based on toasted hazelnuts), up to the famous krumiri and meliga pasta and many other biscuits with local ingredients such as hazelnut.



Acacia Honey

It is a type of monofloral honey, produced by bees that live near acacia plants and draw exclusively from them.



Alessandria



Agliata of M.to

Monferrato green agliata is a typical Piedmontese appetizer, originating from the hilly areas of Monferrato. The basic recipe involves the use of parsley, basil, celery, cheese and, of course, abundant garlic.



Alessandria



Agnolotti alessandrini

Barbera wine is used to cook the meat known in local dialect as matamà obtained from the neck of adult cows. Agnolotti made from either horse or donkey meat.



Casale M.to



Focaccia Novese

It is a sort of flatbread (maximum one centimetre high) seasoned with extra virgin olive oil and coarse salt. During the production process, the focaccia is stretched and then subsequently manipulated to produce small beds on the surface.



Alessandria



Hazelnut “tonda e gentile”

The Tonda Gentile (synonym Trilobata), or Piedmont Hazelnut, is a variety of IGP hazelnuts produced in Lower Piedmont, including some areas of the province of Alessandria.



Alessandria



Lacabòn

A traditional dessert, it has the shape of a stick and is obtained by mixing honey, sugar and egg white: this cake has received the municipal denomination of origin from the Municipality of Alessandria.



Alessandria



Brut ma bun

The name translates to 'ugly but good'. These cookies are made by incorporating meringue; an egg white and sugar mixture; with roasted chopped nuts. Typically in Piedmont they are made with hazelnuts.



Alessandria



Chestnut honey

Chestnut honey is obtained from chestnut flowers and is collected between the months of June and October. It is a dark honey, with an aromatic smell and a complex flavour.



Alessandria



Cicoria “pan di zucchero”

The Cicoria pan di zucchero belongs to the subfamily of the Cichorioideae and is, therefore, a close relative of chicory, red chicory, green chicory and endive.



Alessandria



Mandrogne little salami

These are fresh cured meats to be eaten after cooking which differ from cotechini and sausages in size and raw material.



Tortona



Montebore

The Montebore cheese is made by mixing raw milk: 70% vaccine and 30% sheep. It is typical from Tortona city which is close to Monferrato area.



Tortona



Muletta salami

It's a seasoned raw salami and it is different from salami in the type of gut in which the meat is stuffed, which in this case is a blind pig's gut. It gives to the Muletta a much larger diameter than a common salami.



Basso M.to



Nocciolini

Small round cookies made with meringue (sugar and egg whites) and hazelnuts that are typical of the town of Chivasso, but they are also common in Alessandria province.



Rabatòn

With the shape of a half cigar 6-7 cm long and a diameter of 3 cm. The consistency of the dough is like that of the potato dumpling, it is red and its main ingredients are ricotta, eggs, beets, parmesan cheese and breadcrumbs.



Red celery

It is a quality of celery originating in the Monferrina region. In the 1600s, the Duchess of the Savoys, when she arrived in Italy from France, she cultivated the violet celery.



Polenta with various flours

The undisputed queen of the Alessandria side dishes is polenta prepared with various flours, cheeses and various sauces that enhance its gustatory qualities.



Krumiri

Made without water from wheat flour, sugar, butter, eggs and vanilla, in the form of a slightly bent, rough surfaced cylinder. This handlebar shape is said to have been chosen in honour of king V. Emanuel II.



White truffle

The truffle is an underground mushroom in the form of a tuber, which lives in symbiosis with the roots of some plants, such as, for example, oak, lime, hazel, hornbeam and poplar.



ATTRACTIVE SITES

The primary and numerous places of interest in the area are in Casale Monferrato, all to be discovered and appreciated for the history, art and architecture they offer. **Casale Monferrato** is architecturally characterised by various historical periods and is also a cultural and artistic journey between palaces, monuments and sculptures that allows to observe and compare numerous and various architectural styles.

Among the civil buildings in **Baroque style**, we find **Palazzo Treville and Palazzo Sanazzaro**, while the Renaissance style prevails in the elegant Casa Torielli and in the Civic Tower, a historical symbol that overlooks the city at the height of 60 meters.

As for the **Romanesque style**, there is the

Cathedral of Sant'Evasio, one of the oldest monuments (11th century), and the Castello dei Paleologi, an imposing fortification erected in 1352 by Giovanni il Paleologo.

Architectural details

Local people are very proud of some architectural details of the **Monferrato area**.

In Monferrato area, there are lots of **widespread historic garden** that allow people who access to discover a hidden point of view of the territory and architecture.

They are dated around 1850, and they are unusual for a botanical point of view. Regional laws intend to promote the development and the conservation of horticultural species.

They are private, non-shared environments because they are closed, fenced but during

some occasions, the owners open them to the public for visiting them as a tourist attraction.



Rural architecture

The **“casot” o “ciabot”**, are little buildings composed by one or two floors above ground that were used as temporally warehouse, temporally dwellings (for farmers who worked fields far from home) or storage of tools.

They represent an essential typology of typical



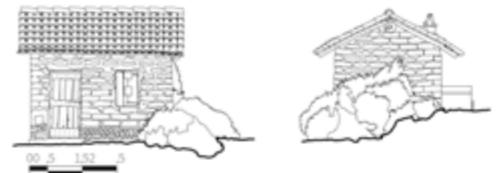
Piedmontese architecture and also a relevant example of useful architecture: a vital necessity to which ciabot responds is deeply connected with the location of vineyards. In the “Langhe Roero & Monferrato” area, villages could be so far from the work fields; the dis-

tance, from 2 to 5 km, did not allow the countryman to return home during the day, for this reason, the need for shelter from the weather.

Another fundamental the function of these elements is the rainwater harvesting that the **ceiling of ciabot conveys to underground wells in case of drought**. This typology of rural architecture, if it is nearby the vineyard, it results isolated in the middle of the field, constructed along the slope; if it is near another field, it is usually close to path or irrigation canals. They were usually built with structural walls in stone flakes, were rarely made

Frazione Coppi, Regione Frati

Typology: casot in Pietra da Cantoni with a rectangular plan and a Piedmontese structured wooden roof
Dimensions: 4 x 3 m.



Frazione Coppi, Regione Boaruzzo

Typology: casot in Pietra da Cantoni with a rectangular plan and a Piedmontese structured wooden roof
Dimensions: 5 x 6 m.



of bricks. A little wooden staircase permits to connect with a floor made of wood as well



as the structure of the ceiling, covered with stones, straw or tiles.

The dense networks of **rural architecture scattered** throughout the Piedmontese territory is a consolidated image of the **wine-growing landscape**. In the second half of the nineteenth century, when the relationship between hills and wine was strengthened, these buildings called “*cascine*” became characteristic and typical elements. These buildings have two specific functions: residential and working. They usually have two floors with a cellar, a kitchen on the ground floor connected to the stable, and bedrooms on the upper floor. The rustic part, also on two floors, with stable on the ground floor and barn on the first floor. The main body faces East-West to take advantage of higher solar radiation in winter. The windows on the south side allow for more magnificent interior lighting.

There are four main **typologies dispositions**:

- Simple sleeve
- L-shaped
- Separated volumes
- Courtyard

Wood, easily available for in the area of Langhe Roero and Monferrato is used for the ceilings structures (wooden truss). The main typologies of wood that is used for rural architecture element are castagni, quercia e rovere, for their strength and robustness; pioppo is used for secondary elements or windows frames. Stone material, for the elevated pres-

ence of arenaria and tufo, is used for structural elements ornamental finishes (is also easy to find clay, for that reason in structural walls is used bricks as well).

Metal elements, basically soft iron, are used for a chain of a wooden truss.

On the whole territory in the most ancient and noble houses, there are frescoed ceilings, with different subjects: food and wine, many landscapes, no religious scenes.

The houses are dated in the 700', while the **paintings on the ceiling** were made in the first decades of 1900, painted by itinerant painters, who frescoed ceilings in exchange for food and lodging. Some were paid. They are called Piedmontese ceilings.



MAIN NATURAL SITES

The **Po Vercellese / Alessandrino park** is a protected natural area and occupies 14,035 hectares of territory. This park constitutes the third segment of the system of protected areas of the Po river belt and extends from the territory included in the municipality of Crescentino (where the Po Torinese park ends) to the borders of Lombardy.

The park includes **12 protected areas** (five special natural reserves, an integral natural reserve and an equipped area):

- the riserva naturale speciale Ghiaia Grande,
- the riserva naturale speciale Confluenza del Sesia e del Grana,
- the riserva naturale speciale Boscone,
- the riserva naturale speciale Confluenza del Tanaro,
- the riserva naturale speciale del Torrente Orba,
- the riserva naturale integrale Garzaia di Valenza,
- the area attrezzata Sponde fluviali di Casale Monferrato,

MAIN RELIGIOUS SITES

The urban centre of Casale Monferrato has two relevant religious architectures: the **Church of Santa Caterina** in perfect Baroque style and the Synagogue, built-in 1585 after Guglielmo Gonzaga allowed the Jews of Casale Monferrato to profess their religion freely. The **Syna-**

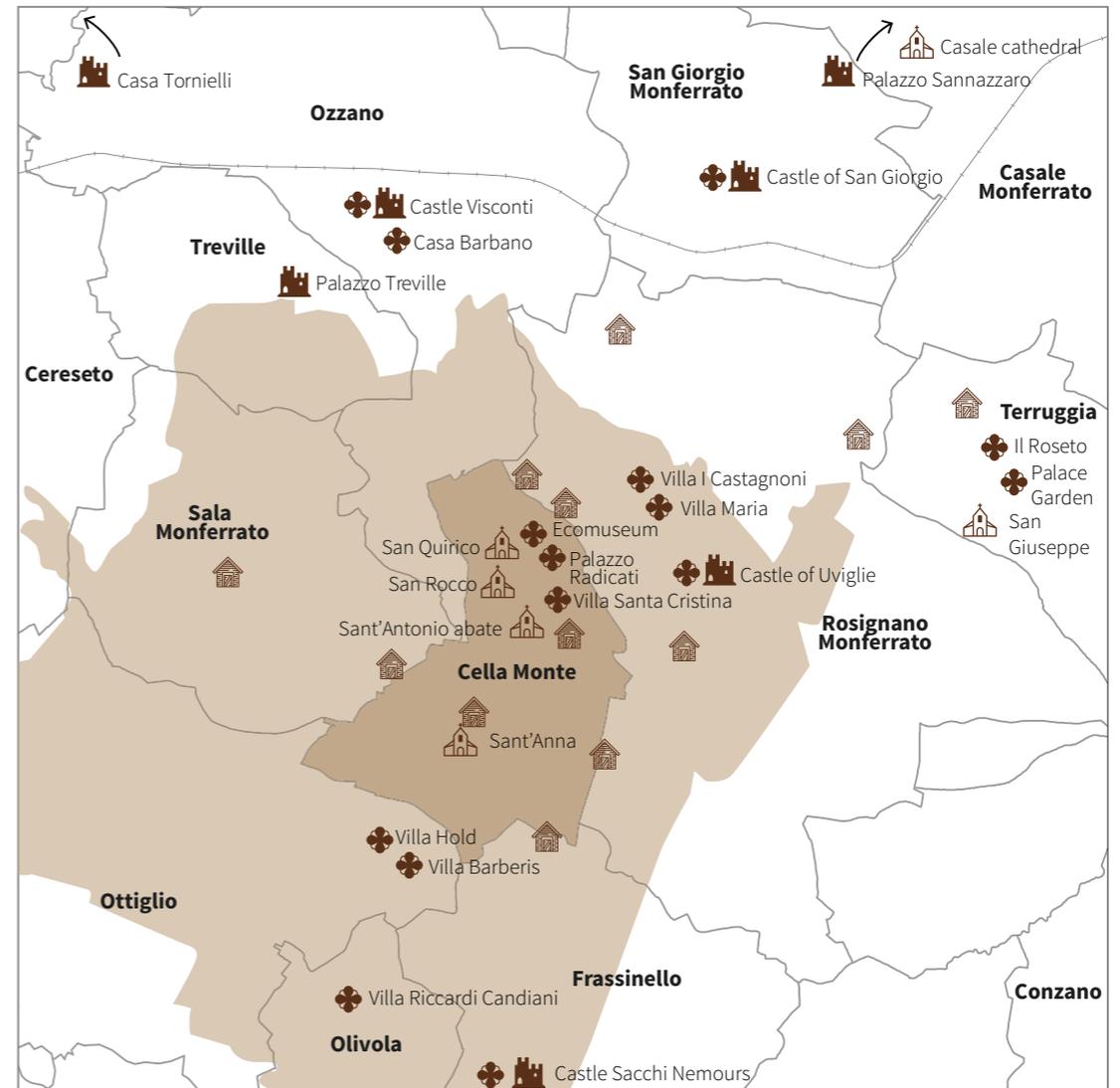
gogue also has a museum, in which numerous objects are testifying to the presence of the Jewish community in Casale Monferrato and throughout the Basso Monferrato area.

Serralunga di Crea, a place of worship and Unesco heritage Tourist attraction of great charm and historical, religious, landscape and artistic value of the Basso Monferrato is the Sacro Monte di Crea, whose religious origins date back to around 350 AD. When Sant'Eusebio (bishop of Vercelli) built an oratory in honour of the Madonna right on top of the hill. Subsequently, during the Gonzaga dynasty in the 14th century, the Sacro Monte di Crea became a real place of worship, characterised by a complex of 23 chapels depicting the Madonna in frescoes and statues. One of the most beautiful chapels is located at the highest point of the hill: the Cappella del Paradiso.

The Sacro Monte di Crea is a place of worship of enormous importance, capable of arousing emotions even thanks to the breathtaking panorama it offers on Monferrato: con

LEGEND

- ✿ Widespread garden
- 🏠 Casòt and Cascinòt
- 🏰 Historical buildings
- 🏛️ Religious buildings



CUSTOMS AND TRADITIONS

SPORTS

In Monferrato area is very famous a sport called in Italian **pallapugno leggera**. It is defined as balon in the Piedmontese, and it is a team sport played with a ball on a level playing field and with or without support, be it a wall, net or other.

The game is played by wrapping the fist with a series of strips of fabric (on average for a total of about 10 meters) to which towards the end a piece of suitably modelled leather is superimposed. This sport is historically rooted in lower Piedmont and Liguria, where it is practised professionally.

Between the nineteenth and twentieth centuries, the pallapugno went through a crisis

that led to its almost total disappearance, except for some provinces of Piedmont (Turin, Asti and Cuneo) and Liguria (Savona and Imperia). Indeed, it has always been an emblem of peasant culture and Piedmontese and Ligurian folklore: it was narrated by writers such as Edmondo De Amicis, Cesare Pavese, Beppe Fenoglio, Giovanni Arpino and Franco Piccinelli, who was also long President of the Federation.

Culture

Competitive sports

History

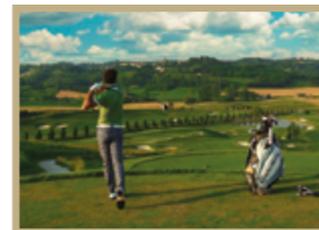
Pallapugno - Balon



Tamburello



Golf



Landscape

Leisure sports

Food and wine



Trekking



Cycling



E-biking



MTB



Racing biking

EVENTS

One of the main aspects related to Italian culture and tradition is the presence of several events during the whole year. The generic name of that events is sagra (plural: sagre) which is a local festival, involving food, and frequently a historical pageant and sporting events. Most of the events and sagre which take place in the Monferrato area and particularly in Cella Monte village involved food, music and flowers. It is common to find several events during spring and summertime, because of the good condition of the weather and because people can enjoy the events with sunlight even during the evening. There are many events related to typical food and especially at the end for summer and the beginning of autumn there are events related to wine production. These events are important because they create significant flows of people all around the villages (even people from a big city such as Turin).

In May the spring event "Le colline sono in fiore" takes place, visitors will be able to witness an original challenge among residents who prepare floral decorations on display in the central street. The inspirational theme changes every year. For fans of roses, a map is available that accompanies the discovery of the specimens planted in the most characteristic points of the country. Cella Monte participates in the national competition of "Flowering Municipalities" - "Comuni Fioriti" and in 2006 he represented the small Municipalities, at the first participation of Italy in the Europe-

an "Entente Florale" competition, obtaining the silver medal. Every Sunday afternoon in May, young musicians are hosted at the Auditorium S. Antonio for a review of classical music called "Laburnum".

After a brief introduction on the events that characterise the area of the Basso Monferrato with a particular focus on the municipality of Cella Monte, we describe in more detail two events that represent for the municipality a high value of visibility and fame in Italy and beyond.

Sagra of White Truffle in Valle Ghenza

One of the most famous events in Cella Monte is certainly the Truffle Festival Della Valle Ghenza with the traditional conference, the exhibition-market of truffles with the sale of typical products and the Pro Loco cuisine with seasonal dishes of the Monferrato tradition. It takes place on the first weekend of November.

Jazz: Re: Found festival

After years of research, Jazz: Re: Found decides to take place outdoors and dedicates four days to concerts, live sets, DJ sets, sound systems, workshops, tastings, food, glamping, vinyl and cultural tourism. The heart of the festival is the municipality of Cella Monte. Each edition of the festival reveals new paths and hidden details in a constant search through the mysteries of music. The same goes for Cella Monte, the central place of the event that hides truth and legends in its history.



❄️ Winter

Christmas markets



🌸 Spring

Festivals
Floral manifestations



☀️ Summer

"Sleepless nights" festival
Tastings under the stars
Concerts in the square



🍁 Autumn

Antiques market
Food festivals
Harvest festival



3.4.4 Economy

MAIN BUSINESSES

Data about businesses' structure of Alessandria Province

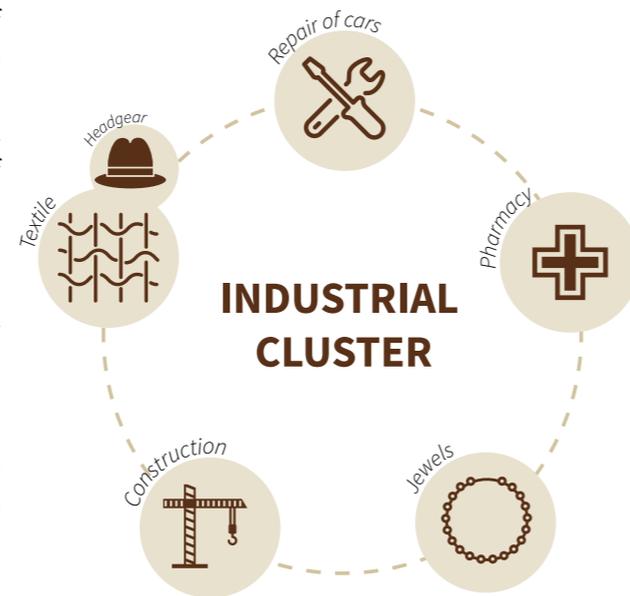
The "Basso Monferrato" area is located inside the province of Alessandria. The productive system of this province has a total of 29,828 businesses (active) in 2018, with an average annual number of **employees 109.350.16**. Most of the companies active in the Alessandria area operate in the wholesale and retail sector and the repair of cars and motorcycles with a total of 7.582 active companies; of these, the employees are around 20.199.

As regards the internal organisation of the companies, it can easily be seen that most of them are organised through non-corporate legal forms (63.54%) followed by limited liability companies (16.2%) and companies in a collective name (9.1%). The other types of business organisation cover only a small fraction of the total businesses.

In line with what characterises the Italian business system, there is an evident prevalence of SMEs, with many average employees per company equal to 3. The structure of Alessandria economy is made up of **28.468 micro-enterprises** (with the number of employees between 0 and 9), together with the small enterprises (with the

number of employees between 10 and 49) which number 1.174 companies in the territory under exam. There is a presence of **155 medium-sized** companies (with several employees between 50 and 249) and, lastly, **31 large companies** (with several employees more significant than 250).

Major Companies of Alessandria Province



From the analysis of the companies present in the Alessandria area, interesting realities have emerged that represent not only regional excellence but a spearhead at an international level. There are almost 400 large companies in the Alessandria area (391 units registered by the reportaziende.it website in 2018).

In Cassano Spinola (AL) there is **Roquette S.p.a.** with a turnover of 420.928.966 €, it is a family group with an international dimension. Roquette Italia S.p.A. was established with the name S.P.A.D. in 1960 with registered office and factory in Cassano Spinola (AL), as the first branch of the parent company "Roquette Frères Company" of Lille (France). Roquette is a leading company in ingredients for food specialities and pharmaceutical excipients. The products and solutions it develops, offer recognised nutritional, health and technological benefits for the pharmaceutical, nutrition, food and other industrial sectors. Roquette enhances vegetable raw materials such as corn, wheat, potatoes and peas.

The **Bulgari Gioielli headquarters in Valenza** was inaugurated in 2017, in the historic goldsmith district it represents the largest jewellery manufacturer in Europe. The new pole has become the headquarters of the prestigious brand's representation and the new symbol of the Valencian goldsmith tradition. With a turnover of € 417,226,335, the Bulgari brand has chosen Valenza, in the province of Alessandria, as the place of historical and cultural representation for the jewellery line.

Itinera S.p.A., with headquarters in Tortona and with a turnover of € 383,188,000, is one of the leading Italian companies operating in construction sector, that works in Italy and abroad, specialising in the construction of significant infrastructural and civil and industrial construction works, sectors in which works both as a builder and as a promoter of new greenfield concession initiatives.

In addition to the goldsmith district of Valenza, the province of Alessandria is known for the textile sector together with the province of Biella, for this reason in the city of Alessandria, there is one of the companies that made history in the textile sector, **Borsalino S.p.a.** Borsalino is an Italian manufacturing company whose foundation dates back to 1857 with headquarters in Alessandria. To its founder, Giuseppe Borsalino, we owe the creation of a particular model of a felt hat which par excellence took the name of Borsalino. The company, in bankruptcy proceedings from 18 December 2017. Haeres Equita, which has leased the business branch since 2015, guaranteeing the continuation of the activity, in July 2018 is obtained at the auction curated by the bankruptcy trustees by Haeres Equita chaired by the Italian-Swiss entrepreneur Philippe Camperio.

MAIN ECONOMIC SECTORS

Data about Alessandria Province Export

The Alessandria province export is 98% made up of products from manufacturing activities (an amount of 3.17 billion euros out of 3.24 billion euros of total export). The non-manufacturing sectors account for a total of 2% of total exports: the most consistent items are "agricultural, forestry and fishing products". Exports in the manufacturing sector (which we remember represents 98% of total exports) are divided between EU and non-EU destination countries according to these percentages: 57% to EU28 countries, 43% to extra-EU28 countries. As regards international trade, France, Switzerland and Germany remain the main markets followed by China and are the preferred partners.

General economic information of Monferrato and Basso Monferrato

Monferrato area in general and specifically also the area of the **Basso Monferrato**, is one of the best known Italian wine regions in the world, especially as regards red wines and sparkling wines. In addition to **viticulture**, the essential activities for the Monferrato economy are **agriculture**, which concerns the cultivation in particular of hazelnuts and various types of fruit. In addition to agriculture, breeding also has a significant impact on the territory, which concerns the **production of meats and cheeses**. Gastronomy with the **truffles and tourism** linked with truffles and wine are two decisive aspects for the territory; the tourism sector is currently growing and being re-launched. Industry plays a limited role in the local economy nowadays; in the last twenty years, only small companies have generated in the **construction, engineering, food and manufacturing sectors**. Furthermore, the marly limestones of the hills around Casale Monferrato favoured the plant in the area of cement works. Tourism is limited by the **lack of hospitality sites** and famous cities of art but has a specific development in the region thanks to the agritourism, the presence of "minor" artistic emergencies such as castles, rural churches and small historical centres, and food and wine attractions.

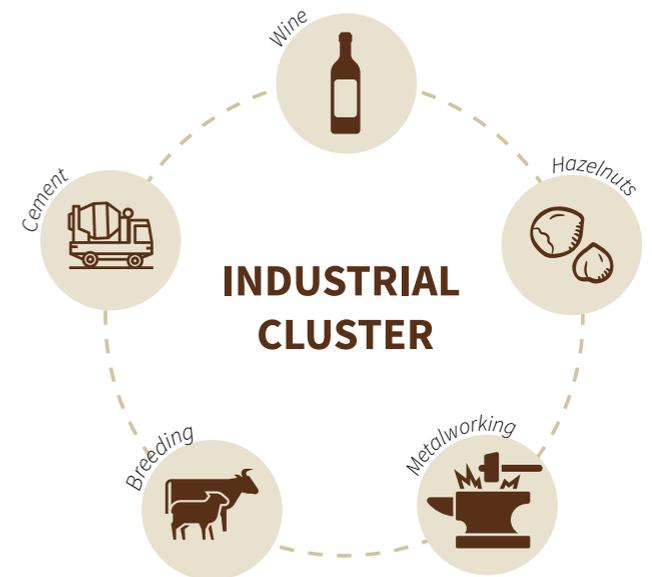
General economic information of Casale Monferrato urban centre

Casale Monferrato is one of the most dynamic centres in Piedmont Region, the economy is mainly **industrial**, with companies active in the metalworking sectors (refrigeration systems, printing machines and tools, carpentry, small parts, tanks and doors and windows), textiles, electrical engineering, accident prevention, paper converting, cement, publishing, food (confectionery, distilleries and delicatessens), commercial furnishings, clothing and processing of plastics, wood and glass.

Typical food production is the "**krumiri**", biscuits patented in 1870 by the pastry chef Domenico Rossi. Logistic warehouses are located in the area. Agriculture, of which the city is an important market and commercial outlet, is aimed at the cultivation of rice, cereals, vegetables and above all of the excellent vineyards with the production of numerous **DOC wines** (Barbera, Grignolino, Cortese, Malvasia, Dolcetto and Freisa); poplar cultivation is also developed.

HANDICRAFT

In Monferrato area, there is not a specific handicraft sector, but a luthier gives an example of high-level craftsmanship from Rosignano, a shop where many "sick" instruments of great value arrive and where valuable pieces are built. There are also artistic craftsmanships of wrought iron and wood in many villages. Goldsmiths and miniatures workshops in Casale, Giarole, Mirabello and Valmacca. Manufacture of clogs and wickerwork in Valmacca.



WINE SECTOR

Wine productive sites

According to the goals of the thesis, we would like to highlight the presence of **Wine farms**, **wineries** and **Wine industries**, which are the wine production and conservation centre.

We had analysed data from **Paesaggi vitivivoli** webportal, which is provided with an OpenData section related to the number of actors who are involved in the wine production and distribution sector. The website allowed the user to download the data collected thanks to the project “*Promotion of ‘architetture del vino’ through cataloguing, education and fruition activities*”.

This project is financed by the Ministry of Culture and Tourism under Law 77/2006, regarding the ‘architetture del vino’ in the territory (all buildings connected to the wine production chain such as the places of cultivation, distribution and promotion, production and conservation, cultural properties and fortresses). Thanks to these data, it is possible to understand that there are more than **9.500 wine farms inside Langhe, Roero and Monferrato UNESCO area**. As we know from the previous sections, the analysed area for this thesis is related to Monferrato of Infernot area, which is the **Component n°6 of the UNESCO sites**. This area has **202 Wine farms, wineries and Wine industries, around 2% of the total amount**.

On the other hand, there is a peculiar aspect related to wine production inside the Piedmont region, which is the presence of **Social Wineries**. According to the open data analysis, there is a Social Winerie inside Monferrato of Infernot area, which is located **in Rosignano Monferrato**.

The wine produced in the Monferrato area are many, the red one prevails, but there are also few white wines, from local and international vines.

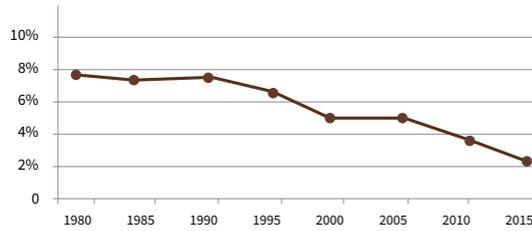
The main DOC of the territory are: *Barbera del Monferrato, Grignolino del Monferrato Casalese, Grignolino, Malvasia di Casorzo, Ruché di Castagnole Monferrato, Monferrato Freisa, Monferrato Rosso, Monferrato Bianco, Monferrato Casalese Cortese, Gabiano, Rubino di Cantavenna*.



3.4.5 Wine consumption

The analysis of historical data on consumption makes it clear how wine has always accompanied the daily life of Italians with a progressive inclination for quality instead of quantity.

Share of large consumers



In 1983, for example, 61.2% of the Italian population consumed wine; ten years later, in 1993, wine consumption is shared by 58.0% of Italians; twenty years later, despite the reduction of 5 percentage points, the share of consumers still stands at almost 56.0% of Italians. In general, data from 1983 to the present day indicate that the Italian population that consumes wine has always remained above 50.0% (51.7% in 2016), while the share of large consumers has gradually decreased (people whom they drink more than half a litre per day) which goes from 7.4% in 1983 to 4.5% in 2003 and reaches its minimum value in 2016, with 2.3%.

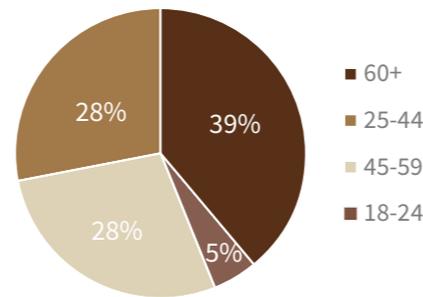
There are higher levels of consumption in the northern regions, (in particular in the north-

east, and the centre), compared to the south and islands. In 2016, it was in the North East that the highest share of consumers resides (56.6%); followed, in order, by the regions of the centre and those of the North West with respectively 54.4% and 53.8% of residents consuming wine.

The long-term analysis of consumption data indicates neither collapse nor excesses, but a relatively stable frequency, which allows the wine to be defined as a food that has always been an integral part of the proper average Italian diet.

Wine has been a permanent presence in the life of next generations and the sector, under-

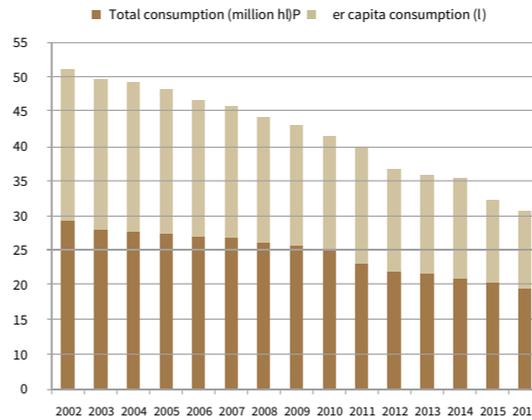
Market shares by age



stood as the product in its articulations and businesses, has evolved in line with the more general socio-economic, cultural and lifestyle evolution of Italians. Today it is on the most

advanced frontier of the new sustainable development, oriented to increase the quality of life of people, with particular attention also to the immaterial and symbolic dimensions, decisive for a functional consumption for the holistic well-being of people.

Consumption



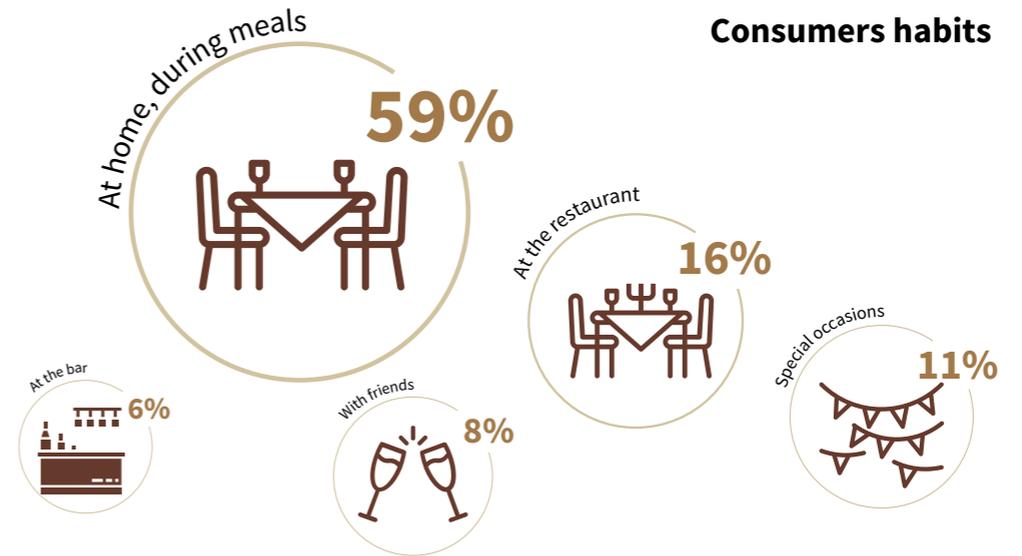
Wine and communication

If, as anticipated in the previous pages, the period relating to the 90s was marked by the qualitative improvement of the offer, the last few years highlight the growing attention to communication. The main goal was to transfer the values contained in the wine to the final consumer.

Winemakers want to communicate the production philosophy, tell the story of the company, the producer, the quality of a grape variety, the charm of a wine.

It is fundamental since these elements allow greater identification of the brand for the consumer, and the brand becomes a point of reference for the global consumer inundated by a growing offer from all over the world.

Consumers habits



3.4.6 Tourism

Tourism in Italy is one of the main relevant economic sectors. It represents more than **5% of the national GDP**. According to the Enit Studies Office, more than 360 million nights spent in the Peninsula until October 2019 (+ 4.4%) and which brought in revenues of around 40 billion. Italy has attracted 3 million participants in events organised and sponsored in the world of luxury. Almost 32 million opportunities for visibility of the Bel Paese through targeted advertising communication actions and co-marketing actions. The 2020 plan of the National Tourism Agency proposes Italy of sustainability, tailored to the new markets and new segments.

As the qualitative analysis for tea sectors, the touristic experiences have been divided into experiences related to the landscape, to the wine culture and the product and food.

The **landscape of Langhe-Roero and Monferrato** offers an immersive exploration of the territory through sustainable modes of transport too. Indeed, there are websites and **blogs** talking about **paths and tracks for MTB**, and it is possible to rent the e-bikes on this website, which are the perfect mode to ride this hilly territory. There are some **organised tours**, but the blogs help tourist in finding new paths freely also through the vineyards. On blogs, there are also paths for motorcycle too.

On the websites, tourist can find lots of **experiences linked with vineyards**, such as tours and **harvest sessions**, as we did in September.

Monferrato area could also offer an unusual activity: tours inside the Pietra da Cantoni quarries but unfortunately they are all closed because they are unsafe.

Touristic experiences linked with wine culture are related to some places typical of the Monferrato area: the **infernot**. As we will describe in chapter 5.3.2, the infernot are private underground cellar dug out by the Pietra da Cantoni. Visits must be agreed with the owners, but there are some events in which the infernots are open for the public.

Despite this, the owners are all proud of their infernot, so they gladly accept to make tours freely.

The **Ecomuseum of Pietra da Cantoni** is supposed to be an essential place for tourism but actually is not.

Experiences linked with products and food are various. In Cella Monte people can make **wine cellar tours** in lots of vineyards. Together with wine tasting, people can also eat local dishes and buy some typical food. Some wineries like Cinque Quinti offer a particular activity for children on their **education farm**: the aim is to get closed children and rural life.

There are many possible lessons linked with the wine world, such as cooking, wine tasting held by sommeliers and also wine mix lesson (currently offered by *Enosis*, which is an R&D site based in Fubine - AL).



3.5 Appendix: issues noticed and key points to develop

The following diagrams show a summary of everything that has been elaborated during the research carried out for the holistic diagnosis.

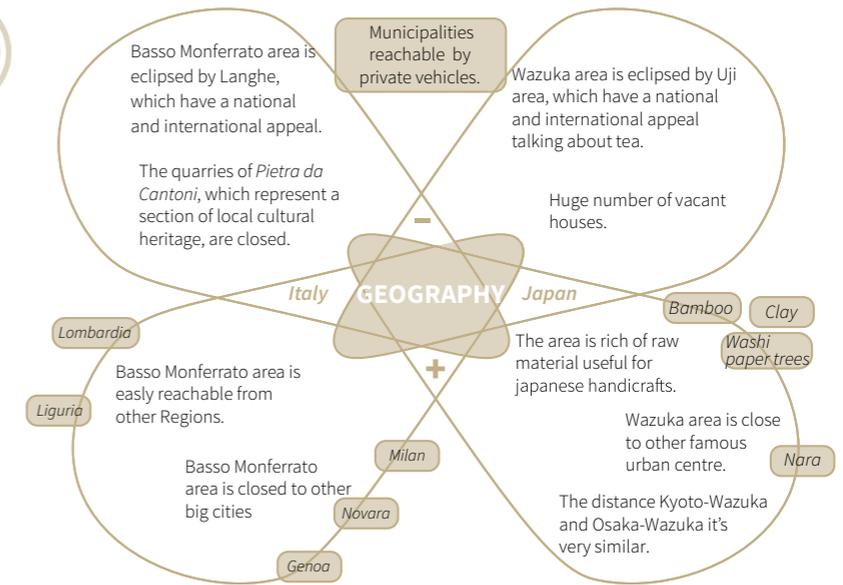
The graphic representation, divided into research areas, shows the **strengths** and **critical aspects** that emerged during the analysis phase, to show a complete picture of what the areas of interest of the project could prove to be for future developments.

GEOGRAPHY



Both areas suffer from the problem of being shadowed by other more famous areas, well known for wine and tea production. From tourists too.

Furthermore, both areas are not reachable by public transport even if they are well connected and close to other main cities. The areas of interest are full of opportunities in terms of the raw materials supplied.

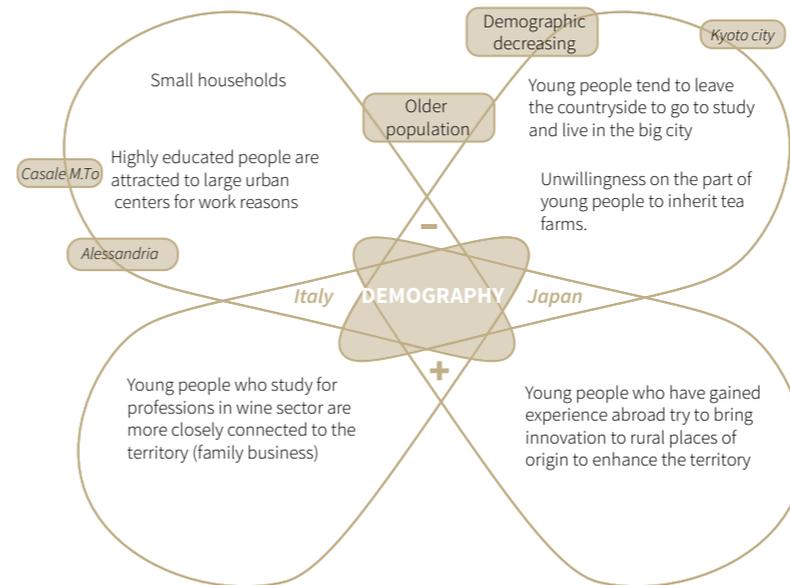


DEMOGRAPHY



Both areas have a big problem with the decreasing of the demography, due to the increasing number of aged people and a few births.

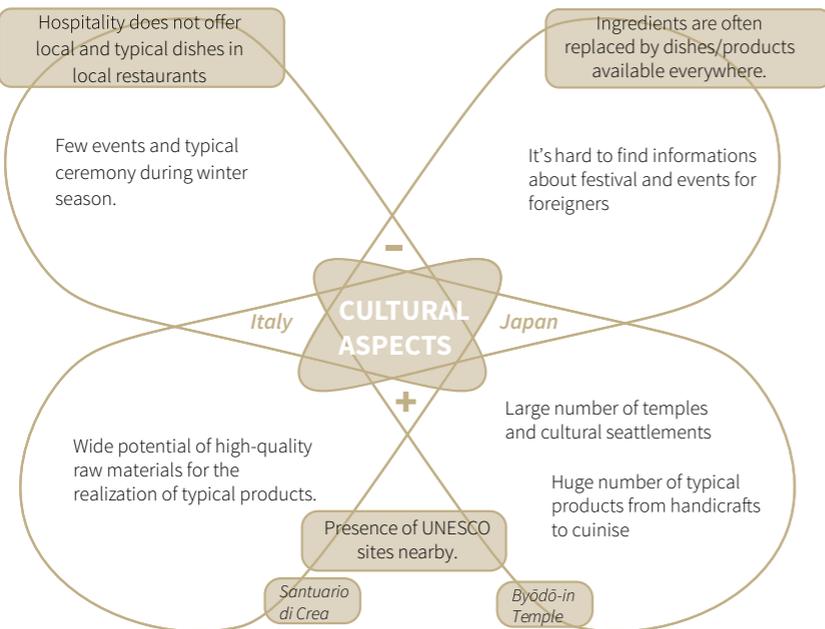
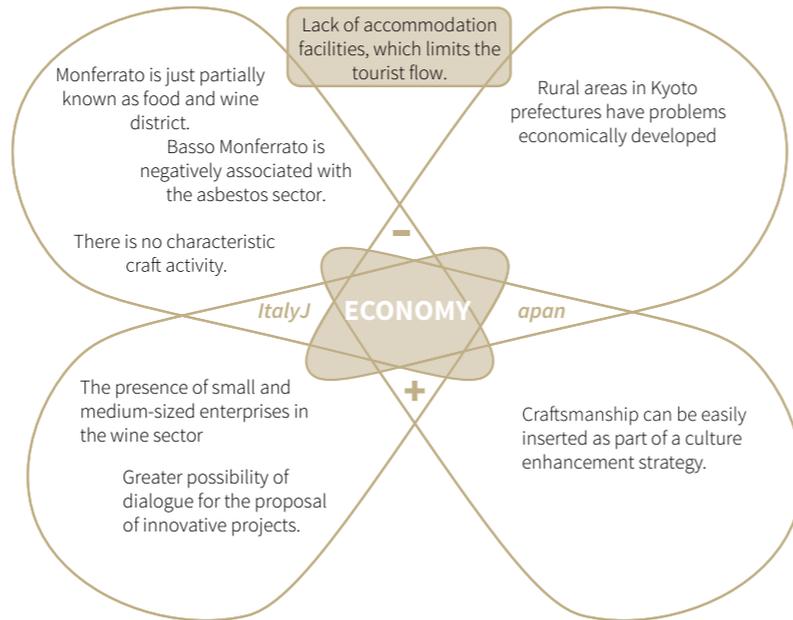
Moreover, both villages can't offer the same opportunity as the closest big cities. Youth prefer to leave the countryside to live in the city. In Italy, some youth come back to the rural areas after the university to carry on the family business. In Japan, it happens too, but less frequently.



ECONOMY



In Monferrato area, the wine sector is characterised by the presence of small and medium-sized enterprises. It's the same in Uji area for the tea sector. For this reason, it could be easy to change the economic paradigm



CULTURAL ASPECTS



Both areas have a strong cultural inheritance carried on by events, festivals, typical food and products.

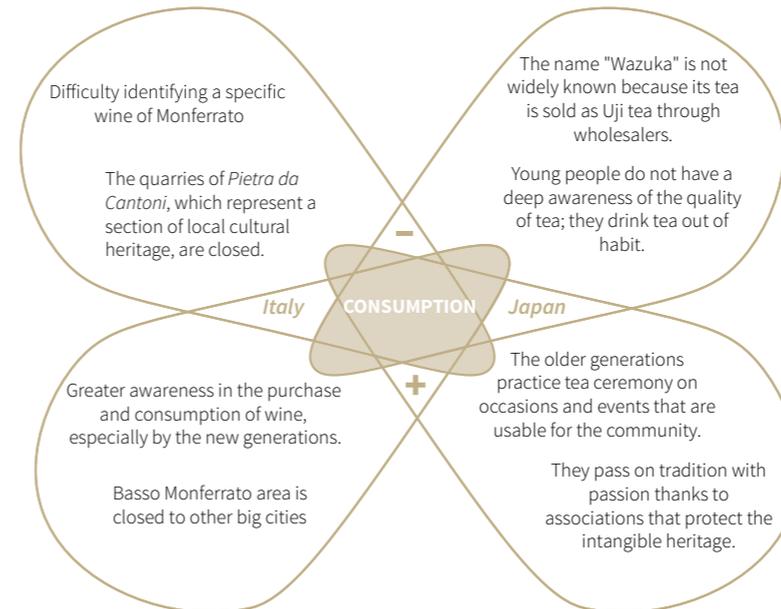
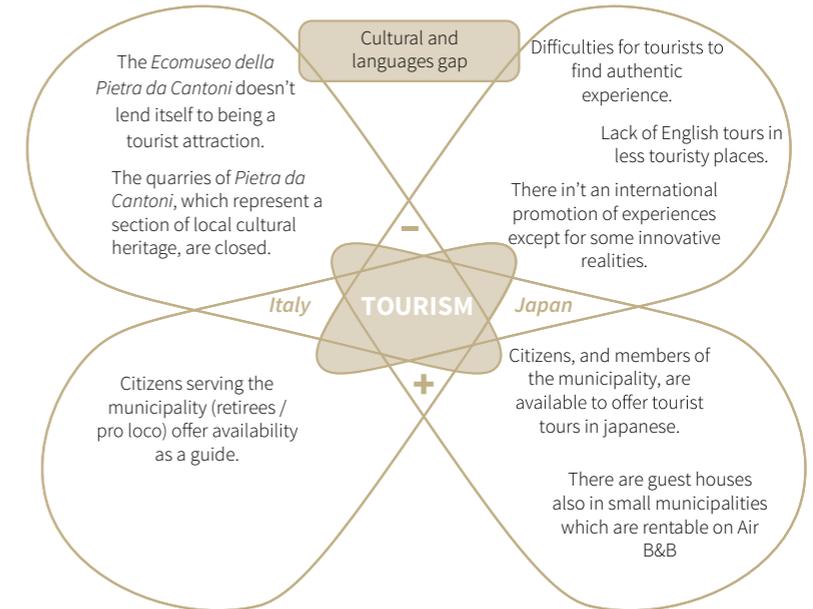
Moreover, distinctive architectures offer great touristic opportunities.

TOURISM



The main problem tourists have to face up to is related to English. Few people in Japan and Italy talks fluently English, in touristic places too.

One positive aspect is the opportunity to talk to locals and take tourist tours together, even if it's hard to find such authentic experiences.



CONSUMPTION



Obviously, the consumption of tea and wine is pretty different, mainly because of the presence of alcohol in wine.

Moreover, youth get in touch with them in a different way, because Japanese drink tea as a habit, while Italians, don't drink wine as a habit, but older people do.

In both cases, it's difficult to carry on the tradition among the newest generations.

References

Quotes

1. Bistagnino L., *Design sistemico, progettare per la sostenibilità produttiva e ambientale*, Bra (CN), 2011.

Bibliography

Celoria I., Ceresa P., *Infernot. Forme ed espressioni scavate nella Pietra da Cantoni*, ed. Ecomuseo della Pietra da Cantoni, 2005.

Celoria I., Ceresa P., *Casòt e Casconòt. Una tradizione contadina secolare*, ed. Ecomuseo della Pietra da Cantoni, 2018.

Crova E., *Il giardino diffuso. Alla scoperta dei giardini storici e di interesse botanico del Monferrato casalese*, ed. Ecomuseo della Pietra da Cantoni, 2009.

MAFF, Ministry of Agriculture, Forestry and Fisheries, *Current Outlook of Japanese Tea*, 2017.

ITO EN Company, *Integrated Report*, English version, 2018.

Ashardiono F., *Tea Cultivation in Uji Area - Drawing from the Experience of Winegrape Terroirs.*, PhD thesis of Ritsumeikan University, 2016.

Web references

<https://www.castellodiuviglie.com/index.php>

<https://cinquequinti.com/en/>

<https://lakanova.net>

<http://en.tenutalapergola.it>

<https://www.oecd.org/regional/regional-policy/land-use-Japan.pdf>

https://en.wikipedia.org/wiki/Wazuka,_Kyoto

https://en.wikipedia.org/wiki/Japanese_dish

<https://gurunavi.com/en/japanfoodie/2016/02/kansaifood>

<http://www.town.wazuka.lg.jp/cmsfiles/contents/0000002/2223/eigo.pdf>

<http://www.kyototourism.org/en/sightseeing-info/163.html>

<https://okinawa.stripes.com/travel/uji-japans-green-tea-capital>

https://en.wikipedia.org/wiki/List_of_Cultural_Properties_of_Uji

https://en.wikipedia.org/wiki/Japanese_festivals

<https://jal.japantravel.com/kyoto/wazuka-japanese-tea-town/8231>

<https://okinawa.stripes.com/travel/uji-japans-green-tea-capital>

<https://en.wikipedia.org/wiki/Omizutori>

<https://www.jetro.go.jp/en/invest/region/kyoto/>

<https://en.wikipedia.org/wiki/Piedmont>

<https://www.regione.piemonte.it/web/temi/agricoltura/promozione-qualita/prodottiagroalimentari-tradizionali-pat>

<http://www.ilcomuneinforma.it/viaggi/9563/cella-monte-la-chiesetta-e-la-collina/>

<https://jazzrefound.it/2019/>

<http://prolococellamonte.it>

<https://monferrato.bike>



4

LIVING AND DESIGNING

*in the same context; a
methodological tool to learn*

4.1 Living outside the context: an abroad experience as an opportunity for exploring an alien culture

*Living and designing within a context presupposes knowing the **peculiarities** that characterise it, the culture of those who live in a context undoubtedly influences the design proposals that a designer proposes conceived and developed starting from society. This thesis highlights the dynamics that are triggered when a designer finds himself designing in **known or unknown contexts**. The following chapter highlights the aspects of the research that characterised the knowledge or the deepening of the cultural aspects in Japan (as an **outsider**) in Italy (as an **insider**).*

Talking about cultural aspects undoubtedly refers us to the communication that binds inescapably the subjects inserted in a society and a context, as the author Fritjof Capra suggests:

“If communications continue to develop within the social network, in the end, they will generate a shared system of beliefs, explanations and values, that is, a common context of meanings, known as culture, which will be constantly supported by further communications.”¹

*The Systemic Foundation website describes the **systemic approach** with the following quote: “The systemic approach is required to create a net of relationships in which a system output becomes the input for another one. The creation of a relationship network is then promoted, producing a general wellness improvement in people, activating cash flow between the various system actors, and improving production processes through a continuous transformation of matter. The cultural and value systems are so spontaneously redefined, with direct environmental benefits.”²*

*However, what does it happen to a systemic designer in an unknown context, with lots of differences in terms of cultural aspects, for example? Which are the adaptation measures to apply to **methodological tools for reading the context**?*

The paragraph below will describe, from a qualitative perspective, the relevance of living the context from in/outside, for the application of systemic approach and its principles according to what we call cultural paradigm.

4.1.1 The research path developed during the exchange program in Nagoya

The research path continued with a period spent in Japan after the first step of studies linked with Drinkscape program. We studied five months in **Nagoya** – Aichi prefecture – and we have attended lessons at **NCU – Nagoya City University**, which is in partnership with the Polytechnic university of Turin.



We strongly believed in the importance of making an exchange program to have new experiences and go in deep with the research.

That time was so precious because it allowed us to expand our knowledge, at first about **Japanese culture**, and especially to better understand green tea world. Our macro research area of the Semester was linked in particular to the theme of interaction design. The very positive aspect of this course of study abroad was that of being able to choose other courses also relating to areas of architecture and landscape. Our wish and the goal agreed with the Japanese professors was to make the most of our stay in Japan, also studying design aspects related to their culture.

We had the main topic to study for the semester as well as the other classes; this topic was

developed during the “Studio meeting” with a tutor’s professor, who was Makito Ohtsubo for us. We decided to use this opportunity to continue our research on tea culture in Japan, on the consume of Japanese and on the thoughts about tea and the uses of it. At least, had time, and also the possibility to create a framework about the green tea production process, in order to study problems, and opportunities derived from the outputs of this raw material.

Once per week, we met our tutor, for having reviews and discussion with him about Japanese tea culture, their uses and customs, and we have created a parallel research path to follow until August 2019 in order to generate an overview about Japanese tea.

The defined path allowed us to develop some considerations about wine culture combined with tea culture. We passed through daily tea consumption with PET bottle, to the traditional way of drinking, until productive supply chain analysis. We also analysed all the steps and characteristic of the tea ceremony and wine tasting until the experiments with eye-tracker. The “studio” with Ohtsubo Sensei has been a crucial point for us because we discussed with a **native person** that has got a solid Japanese culture who supported us and gave us suggestions regularly.

As we said before, we exploited the "Japanese time" to make a high number of experiences, and some of them have been the classes themselves.

We had selected a "**Garden design**" course for studying the Japanese tradition related to gardens and also to understand the origin and the proprieties of materials that they use for their gardens. According to the topics about interaction design, we had the possibility of experimenting with a tool, which is similar

contexts, which have allowed us to investigate holistically about what can be defined as the relationship with the culture of tea and wine in various contexts of the world. Thanks to this point, in addition to experiments, we surveyed people that live in Japan and have been in touch with tea culture. The **survey** was designed to investigate, in a qualitative way, the consumes and the knowledge about tea as Japanese or not, and we will present later the results. All the activities related with



to **Eye-tracker**. It was useful for testing some preliminary disclosures about the role of culture-related with the interaction between man and objects, in this case, with objects of tea and wine world.

Another significant aspect of our stay abroad is related to have been included in international

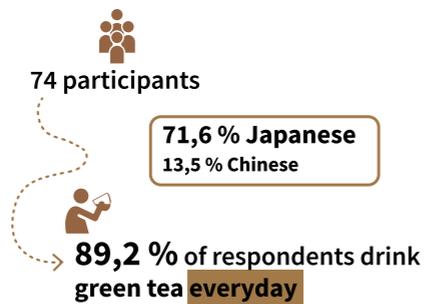
the University have been enriched with the **field research around Japan**, in order to have site inspection in Museum, tea manufacturing plant, witnesses with local people and other site inspection in Yubune and Wazuka.



DATA SURVEY ANALYSIS

During the months in Nagoya, we have tried to find information about the daily consumption of tea in **modern society in Japan**. In addition to the analysis of documents and censuses made over the years, we thought it could be useful to draw up a survey with targeted questions on what we were most interested in finding in terms of data and numbers. We launched the questionnaire in May and closed it in July, to allow time for as many people as possible to respond. Unfortunately, however, one of the problems related to Japanese culture has been the difficulty of involving young and old to fill in the format. Our goal was to start from university and create a network between parents and family members. With the questionnaire, we managed to collect **80 answers**, which are not enough to argue a thesis in this regard, but which illustrate a situation in line with what has been analysed on the web. With the following section, we illustrate the summary of the data.

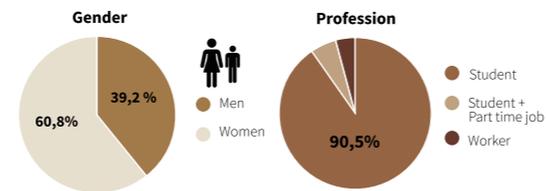
The majority of the respondents are **women**.



That respondents are **Japanese**, so the data analysed below is beneficial for our thesis. Nevertheless, it is fascinating to analyse the responses of foreign people (mostly Chinese)

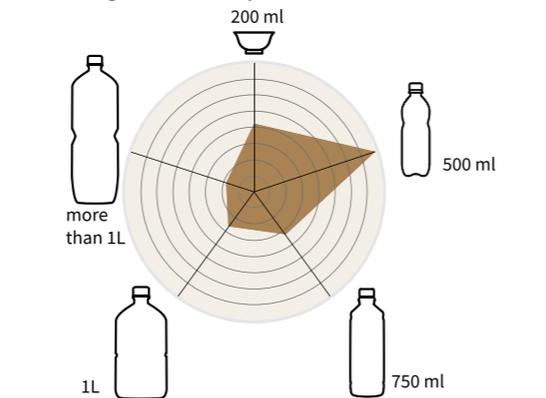
living in Japan. The majority are between the **ages of 19 and 25** (as a total average of 24 years), therefore presumably students living with the family. They are mostly students. Only four people are **both students and workers**. It may imply that the majority of the people interviewed are very often away from home to stay at the university.

90% of respondents drink tea daily. This is a fundamental fact because we are reasonably sure that in a country like Italy it is not like



that. They drink **half a litre of tea a day**, which on an average water requirement of 1.5 litres is high. We think the rest of the drinks are soft drinks, little water.

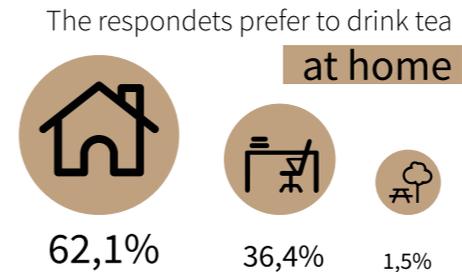
Most respondents drink tea at home, which is strange since they are almost all students



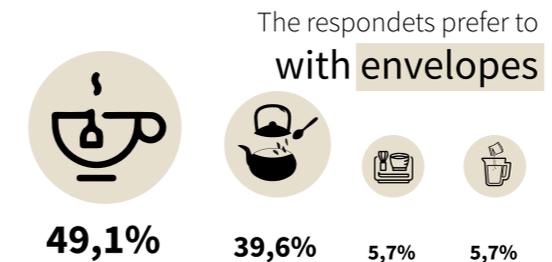
who are very far away from home. It probably

means that they have breakfast with tea, and they drink tea especially at dinner and in the evening.

The majority of respondents prepare tea at home, and this figure matches the previous



data (then they bring the tea out of the house). 30% buy a bottle of tea at the supermarket. 30% also buys vending machines! Most respondents prepare tea at home more often. This is positive for us because it means that we sell **fewer plastic bottles** and presumably

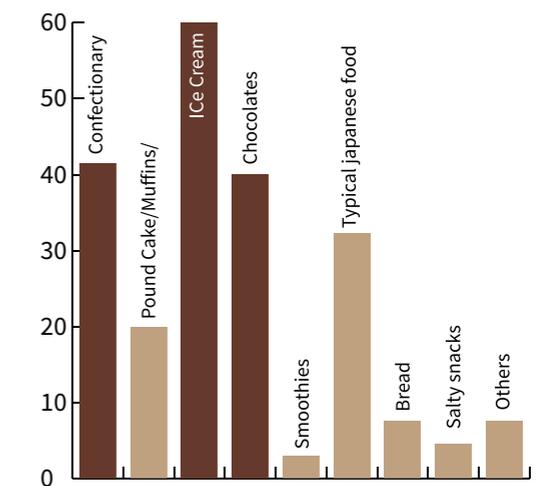


people prepare better quality tea. About the people who buy bottled tea, 70% will throw away the plastic bottle! It means that every day the environmental impact is high. Around 50% of people never buy coffee tea to take it away. Probably because the price is high, it

means that the cafes will not be an area of intervention for the project.

Talking about tea-flavoured products, 60% often buy green tea ice cream and desserts. Even chocolate with tea is often consumed. Does the taste of tea be covered by these products? Talking about our experience in Japan, we ate matcha ice cream, chocolate and snacks. The taste is delicious and particular, but perhaps without sugar, it would not be good. 40% of respondents never attended a tea ceremony! It seems very strange to us. 10% not only never did it, but they also do not even care! Why did tea enter people's daily lives, but half of them have never had a tea ceremony, which is the history of tea in Japan?

40% of respondents drink tea for habit. We do



not know how to interpret the word "habit". Is it a decisive or neat factor? Do people know about the benefits of tea? 30% know it. One person drinks tea for relaxing.

4.1.2 Field research approach as “outsiders”

One of the aims of the research is to understand and identify **differences and similarities about the application of Holistic Diagnosis to a native and foreign context/country.**

HD is characterised by two main investigation steps which are the desk and field research but understand the relevance of being insider or outsider is the crucial point on this matter. In the following section, we will show the distinctive elements related to the field research made outside our context, during months spent in Japan.

For first-rate planning of the experiences to be done in Japan, the search for activities was carried out through multiple channels:

- *Search online*
- *Tourist and city info points*
- *Advertising boards, brochures*
- *Participation in student groups*
- *Dialogue with locals*
- *Tourist guides and textbooks*

Picked out the activity to do, it was necessary to draw up a series of questions to be asked to potential interlocutors in English and on certain occasions we would transcribe some terms in Japanese to be as clear and exhaustive as possible in the requests.

The carried out activities can be classified by macro areas, which in turn have been identified so that they could provide a general overview of what would later represent field research.

The **macro-areas** identified were:

- *Museums and cultural sites visits*
- *Witnesses*
- *Tea manufacturing plant visits*
- *Tea ceremony*
- *Activities with Japanese people*

We can look at Drinkscape workshop session in Japan as the first activity as outsiders; we did not have a strong background about green tea culture in Japan. So, we exploited the experiences to reach information which would be useful for the research; museums visits, witnesses with locals, cultural sites, green tea tasting and tea ceremonies.

As mentioned before, we collected a list of experiences in order to understand better first-hand the culture of a foreign country and the relationship among activities proposed and the **authenticity** of them.



4.1.3 Carrying out the field research among troubles and opportunities

Talking about the relationship between field research and the culture of a defined context, we introduce this section with a quote of Carlo Olmo, an honoured Professor at Polytechnic University of Turin, because we believe in the power of his words.

“La cultura della causalità responsabile pone al centro il soggetto, la sua capacità di saper riconoscere i fili che legano le sue azioni al contesto e agli altri esseri viventi, fa della capacità di mettere in relazione il principio costitutivo di una decisione non costruita sulla morale individuale.”

“The culture of responsible causality puts the subject at the centre, its ability to know how to recognise the threads that bind its actions to the context and other living beings makes the ability to relate the constitutive principle of a decision not built on morality individual.”³

The activities that took place in Japan allowed us “to experience the context”, and it helped us to understand better the peculiarities of territory, culture, a society that otherwise we could not have understood.

For helping us with the arrangement of the activities to do, we created an Experience evaluation sheet (*that you find at page 230*) to keep

in mind some relevant aspects of our research about the activity, such as; where we found information about it, if it was easy to search for it, the level of authenticity and the relation with tea.

MUSEUMS AND TEA HOUSES

We visited some museums and tea houses which are spaces where people can find information related to the culture and history of places and tools. The material culture, in this case, plays a crucial role in the description of human interaction with the object and consequently with the culture of a society, from ancient time until now. Most of the Japanese museums in big cities such as Kyoto, or Tokyo have the museum’s description in more than a language, basically Chinese and English are the most diffused. It does not happen when people go to a small museum which is not particularly haunted by international

people. The web pages are only in Japanese with staff and informative materials which are basically in Japanese with some world in English. Another must be said for tea houses Chashitsu (茶室, “tea room”) because the more authentic one is tough to find in the city centre, but luckily the most famous tea houses are located inside residential sites of the most famous emperors which are very touristic sites.



TEA CEREMONIES

One of the significant experiences that we took part in Japan were tea ceremonies. We started with a more touristic tea ceremony, with other **international people** in a more friendly place, which was a reproduction of a real tea house.

Then we have the pleasure of having a tea ceremony with our professor as a form of hospitality when we arrived in Nagoya. Professor Ohtsubo introduced tea ceremony with a toolkit which is designed for having **tea ceremony outdoor**, such as in mountain or a park-like us, during hanami. It was a unique and private occasion for knowing better each other, with a kind moment link with Japanese culture. It was no strictly authentic but very

traditional and special one. We used very innovative instruments to make tea outside. Furthermore, the more time went on, and more experiences related with tea ceremony we collected.

Thanks to a meeting with a Japanese student who was very interested in Japanese tradition, particularly related to green tea, we took part in a tea ceremony in a temple in Nagoya on Sunday morning. This event takes place each Sunday of every week in order to practice students and young people about the ritual of the tea ceremony. Students, who are part of a University club, about Japanese uses and customs, study hard to begin able to do tea ceremony and they have to practice every week. It is not an authentic experience, but it was stimulating knowing that some young people are interested in tea culture and tradition. These guys do not belong to a proper school of tea, but they learn Japanese culture in practice.

After participating in different types of tea ceremonies around Japan, we had the honour of being invited to the home of two old Japanese people who welcomed us with another ceremony in Inuyama where they lived. It was accessible because we spent several months in Japan, and we knew local people. We attended a Ryureiseki ceremony, which is a kind of ceremony made on the table. We made it at their home, with a woman who is a Tea master, for that reason, it was an authentic experience for people like us, who come from abroad. It was a house ceremony, so they told us to relax because it was not a formal moment. They offered us two couple of tea, so two ceremonies.



DAILY CONSUMPTION

Another aspect that is worth mentioning and evaluating within our sheet about the experiences made is the daily consumption of Japanese green tea. Knowing the raw material and its forms of use and consumption in Japan is undoubtedly a crucial point to be able to advance a project regarding its production, distribution and consumption chain.

Tea consumption took place in different forms, one of which was the infusion of the leaf as a more traditional method. We bought tea leaves at the supermarket, to make tea at home. (classic tea bags but also for taking away). We could also drink Japanese green tea at the University, in a dispenser during lunchtime or at the vending machine. This last point, vending machine, is very usual to find in Japan, and Japanese people can find everywhere and at every time a vending machine or convenience store opens with a wide range of beverages and tea. It is widespread to go to the supermarket and find shelves dedicated to tea and maybe not find water in PET bottles. Just living daily life has been possible to understand and practice their tea consumption methods.

SITE INSPECTIONS AND EXPERIENCES

With site inspections, we mean visits made to places that are intrinsically connected to the culture of tea. We visited tea factories, tasted tea varieties in shops in local markets and often consumed tea during meals because it was included in the meal price. We also found green tea in hotel and ryokan in which we hosted as a symbol of hospitality; It is not an authentic tea process method, but, interestingly, they offer green tea to their guests. During site inspection in a **Factory museum in Nishio** (Aichi prefecture) the staff explained well the entire tea's transformation process, showing some machinery and tools, also in function. During the visit they explained to us how to recognise different kinds and quality of tea, then we chose the taste and we transformed it. We also made an immersive visit in a sort of fake covered tea field. We made a multi-sensorial quality tasting experience about tea, and finally, we simulated a tea ceremony in a tea house replication.

It was not easy to find experiences to do, sometimes it happened by chance, sometimes professors suggested us the events and opportunities to keep, but then we started to research with websites that are only in Japanese and not so easy to find. In many cases, we needed the simultaneous translation on the phone to be able to request translated information from the web pages that have been suggested to us.



ACCESSIBILITY

AUTHENTICITY

ACCESSIBILITY

AUTHENTICITY

Showa Art Museum →

Very difficult to find on the net. The name doesn't remind to the tea culture. The place is not in the city center.

The site is very traditional. The managers know really well the history and tea cultural aspects.

Tea ceremony (temple) →

This club is not known among professor in NCU; for that reason is not easy to find.

It is not an authentic experience but it was stimulating knowing that some young people are interested in tea culture and tradition. These guys don't belong to a proper school of tea, but they learn Japanese culture in practice.

D-Matcha →

Quite easy to find. The activity is developing fastly. They are really social. International tour operators refer to them.

New kind of business in order to innovate the tea sector without damage it. They are developing a strategy based on ecotourism experience.

Tea ceremony at home →

It was accessible because we spent several months in Japan and we knew local people

We attended a ryureiseki ceremony, which is a kind of ceremony made on the table. We made it at their home, with a woman who is a Tea master, for that reason it was an authentic experience for people like us, who come from abroad.

Wazuka cafe →

The place is located on the main street of Wazuka. But there aren't clear information to find it.

This is a new kind of place in Wazuka, they want to attract local people and also tourists, for consuming authentic tea in different way.

Tea ceremony →

Uji is near to Kyoto. Not easy to find on the net.

It seems not to be for foreign people; it's authentic, but it's an event for tourists.

Hanami with professor →

It is possible to have a hanami at the park with Japanese if you go in Japan during cherry blossom period..

Not strictly authentic but very traditional and special one. We used very innovative instruments to make tea outside.

Matcha factory →

It's an important area about tea matcha production. It's quite easy to find some informations about Nishio and Aiya brand on the net. It's difficult to book the experience because there is a strictly reservation numbers (18 in total per day). And, we had to reserve one month in advance.

The staff explained really well the entire tea's transformation process, showing some machinery and tools, also in function. During the visit they explained us how to recognize different kind and quality of tea, then we chose the taste and we transformed it. We made also an immersive visit in a sort of fake covered tea field. We made a multisensorial quality tasting experience about tea, and finally we simulated a tea ceremony in a tea house replication

4.2 Living inside the context: an in-depth investigation of the familiar culture

Living and designing within a context presupposes knowing the peculiarities that characterise it, the culture of those who live in a context undoubtedly influences the design proposals that a designer proposes conceived and developed starting from society. This thesis highlights the dynamics that are triggered when a designer finds himself designing in known or unknown contexts. The following chapter highlights the aspects of the research that characterised the knowledge or the deepening of the cultural aspects in Japan (as an outsider) in Italy (as an insider).

Knowing a context from a cultural point of view is a crucial prerequisite for reading those mentioned above. Speaking the same language, knowing the aspects related to society, its uses and customs, offer the designer a solid starting point. One of the cardinal principles of systemic design concerns local action and the concept of autopoiesis, which, being intrinsically linked, highlight the importance and determination in analysing a territory.

4.2.1 Field research approach as “insiders”

Concerning what said in chapter 4.1.2, one of the peculiarities of this research is to establish differences and similarities to the application of the holistic diagnosis in the territories analysed. Being an insider of territory means knowing the aspects that characterise it, the goal, in this case, is to make the statements that are known due to their native context more scientific, therefore collecting and reworking the data plays a crucial role in this research phase.

Related to the wine sector in Piedmont Region, with a specific focus on Basso Monferrato, we developed at first an analytic and desk research, before having the field one. We concentrated on regional data from the website, some books and scientific documentation searching in the digital and physical library. Most of the material that we found was in Italian, so it was easy to understand and read the data and, as a consequence, the territory.

The experiences and information obtained during visits to the company and to places that would later become the subject of the project were possible thanks to direct contact with the local actors. Before carrying out experiences in the field, it was possible to document us online through the websites of companies and municipalities, from a first screening it was, therefore, possible to contact the interested parties and schedule the meeting.

For first-rate we visited a series of website and blogs related to Monferrato area which present activities and sites to visit, then starting from this overview we visited personal website of the places. After that we picked out the activities to do, for having a list of experience useful to know the territory and the production chain.

As we did in Japan, we carried out activities that can be classified by macro areas, which in turn have been identified so that they could provide a general overview of what would later represent field research. The macro-areas identified were:

- *Museums and cultural sites visits (in-fernot)*
- *Witnesses*
- *Wine manufacturing plant visits*
- *Wine tasting*
- *Activities related with wine, from tasting to visits*

4.2.2 Carrying out the field research among troubles and opportunities

The fact of *speaking the same language* and living in the same region of the analyzed site played a key role in defining the cultural background to discover the Piedmont wine sector.

On the other hand, one of the aspects that represented an obstacle during the field research carried out at Cella Monte was the fragmented nature of the cultural proposal and the difficulty in finding cultural structures and settlements to visit open at various times of the week.

Certainly, as regards research, *authenticity in the experiences* chosen to get to know the culture of the place in more detail, there has not been an easy path, because of the problem related to the lack of availability in some days when we had the site inspection for example.

The main problem related to the site to visit is that sometimes *infernot* are not available for public people. Most of the time *infernot* are underground private houses and this could be a problem when you decide to visit them. It is necessary to keep in contact with the owner and it is often not so easy to find the contact. Once or twice per year there are events with the aims of open *infernot* to the public but not all the owners joint it.

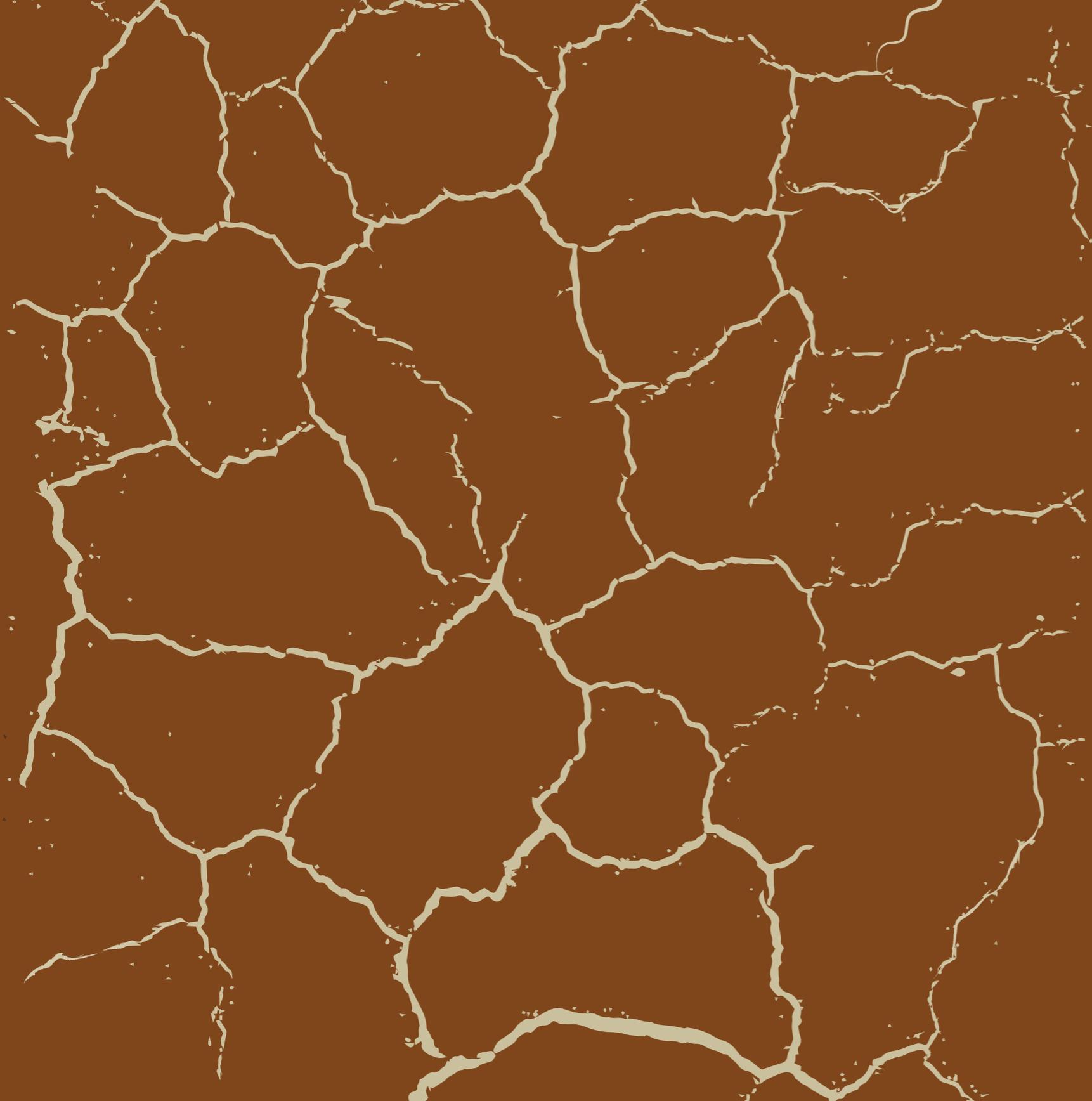
On the other hand, sometime we have dinner or lunch in hospitality site around Cella Mon-

te in order to try local food and experience the place by the flavour, but the offer it is not always related to local and traditional food.

References

Quotes

1. Capra F. *Vita e Natura. Una visione sistemica*, Aboca edizioni, 2014
2. <http://www.systemicfoundation.org/systemic-approach/>
3. Olmo C. *Riflessioni su un sintagma: cultura politecnica*, Festival della Tecnologia Conference at Politecnico di Torino, Turin, November 2019



5 MATERIAL CULTURE

*The relationship between
objects, their usage and
know-how*

5.1 The timeless role of the tools within the rituals

*The following chapter aims to focus on the **main rituals** where tea and wine are the protagonists. In Japan, the **tea ceremony** continues to have a crucial role within the **Japanese culture**, even if it changed during the years, and the newest generation does not appreciate it as the oldest one. It is possible to compare the high-consumption of the tea during the tea ceremony with the **high-consumption** of wine during the **wine tasting** with a **sommelier**.*

*To read the higher quality of the two products, we focused on places linked to the consumption rituals. We will analyse two places that are born linked to the raw materials tea and wine, or the **tea houses in Japan** and the **Infernot**, of the typical underground places of the **Monferrato Casalese**. A historical excursus will help to understand why these places have developed and how their function has remained unchanged or has changed over time. Furthermore, we analyse the relationship between these places and the materials present, the construction techniques, the details that make them unique and inimitable.*

Afterwards, we will show the roles of all the actors who intervene from the field to the processing industry, up to the professionals who deal with the consumption step.

*Studying the supply chain does not mean only analysing it concerning the flow of matter that characterises it. It is also thanks to the **work of professions and their know-how** they that make a unique and quality production. Monitoring the supply chain is a significant job to give a product all the care it needs, but they also have to regard the local material and immaterial culture. In this section we provide an overview by the leading professional figures of wine and tea production chain, from the agricultural sphere, passing through the manufacturing section until consumption facilitators, for better understand the role of each profession.*

5.2 Green tea world and history

5.2.1 Tea Ceremony and tools

The history of tea in Japan began at the begin of the **9th century**, when the tea drink, has spread both in Japan and later in European countries from southern China.

In Japan around the sixteenth century, the preparation and tea consumption took on extremely refined characteristics, becoming a very particular and highly esteemed form of art, which is called **Cha no yu** 茶の湯, and which in the West is generally known as "ceremony of tea", but in reality cha no yu means, much more prosaically, "the warm water of tea".

The first person to use the term "ceremony" to explain the ritual of making tea in Japan was

Drinking a cup of tea thus becomes an emblem of how any act, devoid of apparent significance, can, in the hands of people of significant creative charge, become a form of art.

the Portuguese Jesuit missionary João Rodrigues (1561/62 - 1633), author of an essential essay on the art of tea. He used this term perhaps to define better the rarefied, almost religious atmosphere of the ceremony. So, a banal and daily activity like drinking a cup of tea has become an intense, refined, elegant **aesthetic experience in Japan**.

the Portuguese Jesuit missionary João Rodrigues (1561/62 - 1633), author of an essential essay on the art of tea. He used this term perhaps to define better the rarefied, almost religious atmosphere of the ceremony. So, a banal

Tea ceremony in Japan comes from cultural humus of **Zen**, which from the 12th to the 16th century and, after its introduction, gradually becomes more and more central to dominate the cultural scene. Zen is the background to which the great masters refer to shape the cha no yu and its aesthetic contour, in its highest forms, marked by severity, simplicity and the search for ethical values and self-improvement. Moreover, there is the culture of the bushi, the warriors at the service of feudal lords, energetic and strict, with refined tastes. The result was an art marked by the purity of the actions and gestures, which pursues the naturalness and simplicity of forms, which leads to introspection, isolation, stillness and even solitude.

The slow and precise, almost sacred gestures, without superfluous movements, the silence and the half-light in which the cha no yu takes place are the ingredients that create a space and a time out of the ordinary³⁸.

TEA CEREMONY AS A PERFORMING ART

Preparing and sipping a cup of tea thus becomes a refined form of art, a simple gesture that enriches with an elaborate and complex outline that gives to its immediacy and sim-

plicity an expressive and emotional richness of high intensity.

In particular, we can say that the tea ceremony itself is a performing art based on body gestures like theatrical arts. During the tea ceremony, the host and guest together contribute to the performance of artistic performance. Even the guest, despite being a passive element, with his attitude, his gestures, and his ability to behave correctly in that environment, contributes to the performance. The host acts for the guest, and he responds with gratitude and appreciation.

The place itself, the action that takes place and the tools used, despite being of excellent refinement and preciousness, however, are objects used in everyday life. The ceremony can be considered as the sublimation of everyday life, a way of living in an artistic and extremely refined way. It is an aesthetic way of life in which what is banal and ordinary in the form of art is elevated.

Incredible as it may seem, tea as a drink is irrelevant in cha no yu; in fact, it is only the means to create a harmonious and serene intimacy between the host and his guests. Tea is drunk as a central element around which an elaborate performance takes place, consolidated

over the centuries and considered of high aesthetic-ritual value. It is the most refined and elevated expression of the Japanese tradition of entertaining guests called motenashi, or "**hospitality**", or the art of entertaining guests in a pleasant way by offering them various meals, drinks and entertainment.

THE MODERN HISTORY OF TEA CEREMONY

SEN NO RIKYU TEA MASTER

Sen no Rikyū



(千利休, 1522 – 1591), is considered the historical figure that influenced most the cha no yu, particularly the tradition of wabi-cha. He was also the first to

emphasise several important aspects of the Ceremony, including rustic simplicity, the directness of approach and honesty of self.

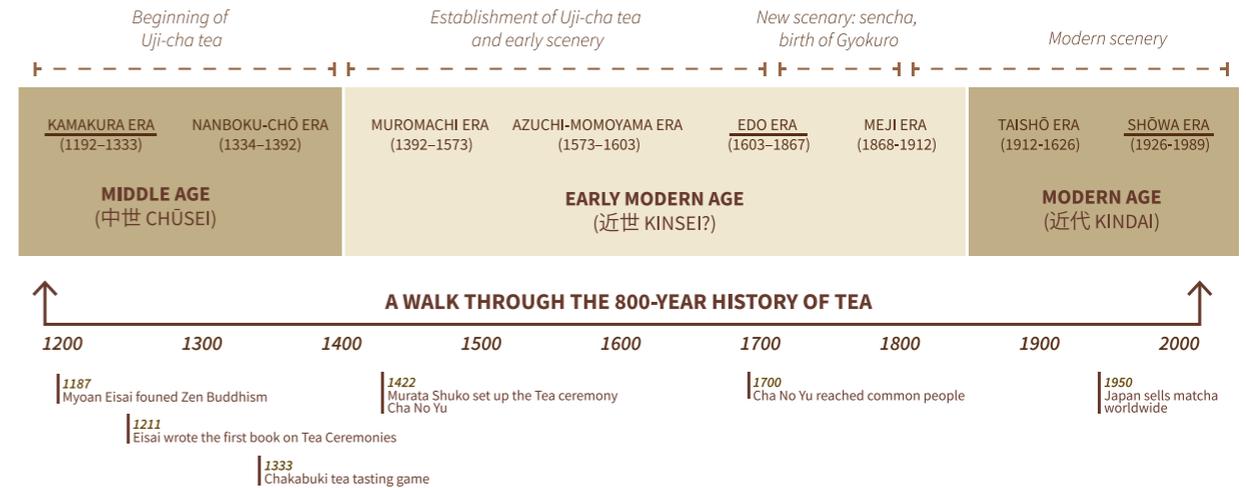
In 1540 Rikyū met Joō from whom he learned a style of Tea characterised by the utmost informality and simplicity. It is evident by the Seven **Rules of the preparation of Tea**, called Rikyū shichisoku 利休則⁹⁹.

1. Preparing a tea that is pleasant to drink;
2. Arranging the charcoal so that it makes the tea boil;
3. Arranging the flowers as if they were in the field;
4. Making people feel warm in winter and cool in summer;
5. Preparing yourself in time;
6. Setting up an umbrella in the event of rain;
7. Being attentive to your guests.

These rules show how the preparation of Tea is a matter of attention, respect towards guests and towards objects that are used, of care and passion for this activity, as it should be in every daily activity. Rikyū meant the ceremony as the prototype of daily activities, or rather that activity in which to express one's genuine attitude suitable in every other activity. As anticipated before, the tea ceremony is in the Muromachi period, and it matured the aesthetic ideals from the Kamakura period thanks to the bushi. Aesthetic concepts gave impetus and vitality to cha no yu, and which took the names of wabi, sabi and yūgen. Wabi gave rise to *wabicha*.

Wabi is an **aesthetic concept** of great elegance and depth, based on simplicity and essentiality devoid of flashy and redundant elements, which proposes an ideal of **imperfect beauty**, simple, rustic, to be savoured in calm and silence. Typically they are the objects used in the practice of tea: **rough cups, poorly finished, irregular**, covered with the time changes and use and with dark or neutral colours.

The trend of shape's perfection, in every art, produces an intentional imperfection, which can be considered the overcoming of perfection, or contrary, the maximum of perfection which pushes towards simplification and reduction to the essentials. It is seen not only in the cha no yu but also in monochrome painting and poetry.



Wabi means "to suffer, to be sad and lonely", intending to transform the idea of "insufficiency, lack, poverty, desolation" into an aesthetic ideal in which one passes from dissatisfaction to what is lacking or is insufficient to the capacity to appreciate what is simple, austere and poor, as an expression of great depth and purity. It is the beauty of poverty a desired, sought-after poverty, object of aesthetic (and spiritual) appreciation.



THE TEA CEREMONY PERFORMANCE

A famous poem of four lines of three characters, 茶湯三言四句, it says that:

Tea is not Tea. 茶非茶

It is not that tea is not [the tea], 非非茶
it is that it is only Tea. 只茶耳

This is called tea. 是名茶

It means:

Tea that is common in standard tea ceremonies is not real tea. Nevertheless, it is not that it is also not Tea. The real Tea is just only tea and nothing else. This is the true spirit of Tea.

The core moment of *cha no yu* is, of course, the preparation of the tea which is done by adding **boiling water** to the powder of the **matcha green tea** blended with the chasen, a kind of bamboo whisk, so that all the powder melts in the water leaving no residue.

Traditionally there are two types of tea preparation:

- **koicha**, strong tea,
- **usucha**, a light tea.

Both are served during the *chaji*, in sequence. The *koicha* is a tea that uses a higher quantity of powder for the same amount of water poured into the cup (about three times) so that the resulting drink is dense, and it is produced with older and more precious plant leaves.

Usucha is instead a lighter, more diluted tea, has a more astringent taste and, blended with chasen, produces a thick froth at the top.

The **performance of tea** (or *chaji*) can have different forms, depending on the school, the period of the year, the time of day, and other considerations. However, the many varieties of *chaji* each have a precise procedure and established rules. These procedures are called **Temae** ("tea preparation method/protocol") and range from very formal types to less strict ones.

The main *temae* are the following:

- **koicha temae** 濃茶点前 and **usucha temae** 茶点前 are the two procedures for the preparation of strong tea and light tea respectively. The first has a greater formality and is usually served first;
- **daisu temae** 点前 foresees the use of the *daisu*, that is the mobile and open shelf in which the tools for preparing tea are placed;
- **furo temae** 風炉点前 e **ro temae** 炉点前 provide respectively for the use of a portable brazier resting on the floor (*furo*) and a hearth inserted between the *tatami* in the second case. The first is used in the hot season, the second in the cold season;

- **nagaita temae** 長板点前 is a version of the *daisu temae* since it uses a *nagaita* (literally «long axis») on which to place the tools;

takes a long time, up to four hours in some cases.

- **chabako temae** 茶箱点前 uses a container (*chabako*, "tea box") in which the utensils are placed. It was developed for the convenience of transporting the necessary for the *chaji*, especially in outdoor locations. The kettle, being large and heavy, is usually excluded;

- **hakobi temae** 運び点前 (literally the «theme in which they carry [the tools]»), which instead of being already predisposed in the *chashitsu*, are brought inside by the *chajin*;

- **bonryaku temae** 盆略点前 is a simplified procedure, according to which the utensils are placed on a tray in the place where the tea will be prepared. It is the less formal type.

Beyond the type of *temae* that often concerns the placement and use of tools, the *cha no yu* procedure can be performed in different ways, depending on if it follows a formal style or a simpler and shorter one. Especially in modern society, tea tends to be prepared by reducing performance to the essential and leaving aside the preliminary stages. Full formal execution

TEA ROOM ELEMENTS



1 Sadouguchi 茶道口 - Host's Entrance

2 Tokobashira 床柱 - Supporting pillar

3 Otoshigake 落としがけ - Tokonoma Lintel

The Otoshigake is the lintel that supports the partial short wall in front of the Tokonoma alcove.

4 Kakejiku 掛軸 - Hanging scroll

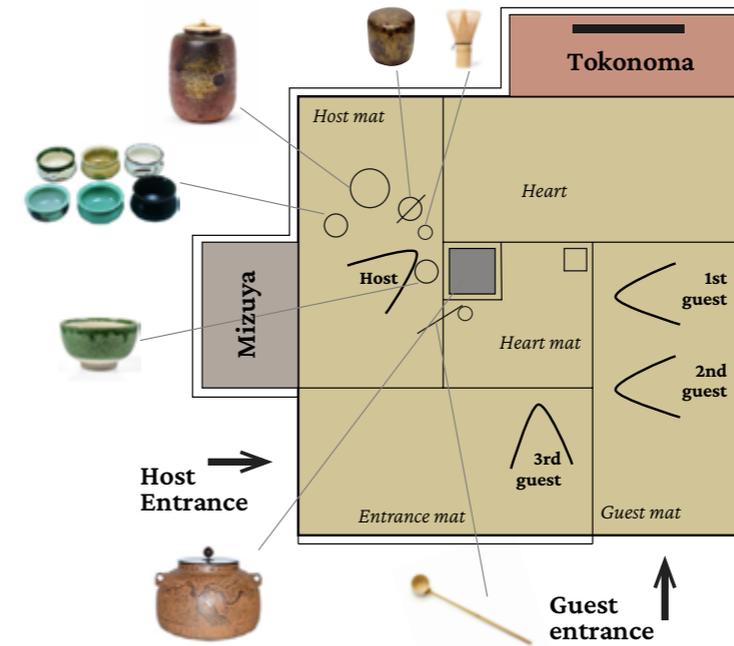
In these scrolls, calligraphy or painting are usually mounted. Calligraphy includes such as Waka poetry.

5 Tokogamachi Tokonoma bottom beam

6 Temaeza - Tea master's tea mat

This Tatami mat is only used by Teishu to prepare tea and re-light the charcoal fire.

ELEMENTS DISPOSITION



Ro (炉) (sunken hearth) :

This hearth is used during autumn and winter ro sunken hearthseasons when it is cold. In the Tatami flooring a hole is created to put the kama in.

TEA CEREMONY TOOLS

A list of the leading traditional tea ceremony tools follows:



Tea caddy (Cha-ire 風炉)

Stored in decorative bags called *Shifuku*.

This tool is used for making thick tea (*Koicha*).



Iron pot, or kettle (Kama / Chanoyugama 釜)

Used to heat kama water boiling kettlekama, kettle with rings, called Kanup the water for making the tea. It is made from iron or copper. The Kama has a lid (*futa*) which is removed when starting to make tea and placed back at the end when all guests have had enough cups of tea.

Portable brazier (Furo 風炉)

Portable brazier is used only in the spring and summer seasons. The first ones were made of bronze, but later iron and clay braziers became common.



Waste water receptacle/bowl (Kensui 建水)

A waste-water container into which either hot kensui waste water receptacle or cold water is poured after a Chawan has been rinsed during a tea ceremony.



Tea bowl (*Chawan* 茶碗)

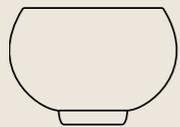
Arguably the most essential implement; without these, chawan tea bowl for serving guests green tea tea could not be served or drunk at all.



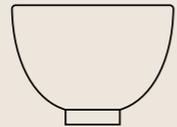
Whisk (*Chasen* 茶筴)

Tea-whisks are carved from a single piece of bamboo. Though they are a necessary part to serve tea, Chasen whisks themselves aren't considered as Dōgu.

Chawan shape focus



Wa-nari:
Circle Shape



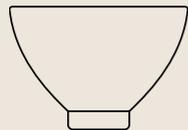
Wan-nari:
Wooden Bowl Shape



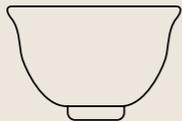
Goki-gata:
Goki Type



Han tsutsu-gata:
Half Cylinder Shape



Sugi-nari:
Cedar Shape



Komogai-nari:
Komogai Shape



Hatazori-gata:
Curving Lip Type



Tsutsu-gata:
Cylinder Type



Natsume (棗) (tea caddy)

It is short with a flat lid and rounded bottom, and is usually made of lacquered or untreated wood.



Tea scoop (*Chashaku* 茶杓)

It is an important utensil to get the matcha proportions correct. A bamboo Chashaku in the most casual style is with a nodule in the approximate center.



Ladle (*Hishaku* 柄杓)

It is used to transfer hot water from the iron pot (kama) to the Chawan when making tea. Different sizes of Hishaku are used for different ceremonies and in different seasons.



Hemp cloth (Chakin 茶巾)

To ritually cleanse the tea bowl after a guest has finished drinking the green tea and returned it.



Fukin (布巾)

Hemp cloth used to wipe the Chawan clean after having served a bowl of macha-tea to a guest.



Drawstring pouch (Shifuku 仕覆)

Usually a tea caddy (Cha-ire) is put in a drawstring Shifuku draw-string-pouch for Chairepouch (shifuku) made of very fine material, such as high quality silk gold brocade, and carried into the tea ceremony room.



Before starting the Tea ceremony, host and guests have to purify themselves

Creating a meditative state of mind, to prepare the best bowl of green-tea

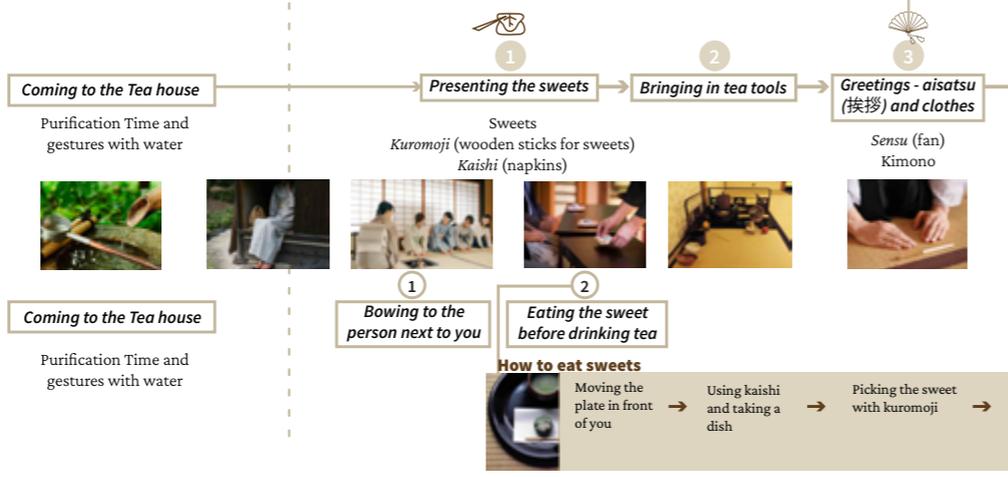
Takes time to arrange clothes to make sure sitting will be comfortable for the duration of the tea-ceremony

Chanoyu, Chado or Sado - Tea ceremony steps

Hakobi (運び) means: to carry. Temae (点前) means: the ritual preparation of tea during the Japanese-tea-ceremony. This is the most basic style of the Japanese tea ceremony because all Dougu are being carried into the room as opposed to being displayed on the Tana in the Chashitsu.

Teishu (亭主)
Tea ceremony host

Main guest (Shokyaku) and other guests



Main steps of the ceremony



Depending on the ceramics, a rough Chawan might require extra care when whisking, making sure Macha doesn't fly all over the room.

It will take years of experience to get the correct balance of Matcha and Oyu.

3
Observing the entire tea ceremony steps
Guests cannot talk to tea master, only the main guest

4
Shokyaku and other guests bow silently in return.
After the Shokyaku has finished drinking, he or she returns the Chawan to exactly the same place were it was picked up, but the front or Shomen should face the Teishu.

End of the ceremony



Mandatory Bows
Turn the body
Transfer objects

5
Drinking tea
Chawan

How to drink
Put the matcha between you and next person Say "osakin!" and bow -> Move the matcha bowl in front of you Say "otemae chodai shimasu" to tea master -> Take the bowl in your right hand and put it on your left hand -> Turn the bowl twice, each time 45° -> Drink the matcha for 3-4 times -> Turn the matcha twice in the opposite direction

TEA CEREMONY – RADICAL CHANGE DIRECTION

During the **Meiji period** (1868-1912), Japan embarked on the path of opening to the West after more than two centuries of closure and almost total isolation.

There was a real **westernisation's fever** that lasted at least for the first twenty years, the seventies and eighties of the nineteenth century.

Tea culture suffered greatly from this cultural climate.

The collapse of the feudal system, the establishment of a centralised state and the abolition of the social classes, completely abolished the support and protection that the feudal lords had bestowed until that moment to tea masters and big schools. These suddenly found themselves without economic and political support. To worsen the situation was also the attitude of rejection towards the culture of the past seen as backward and as a stumbling block to the effort of modernisation. The culture of tea was losing its prestige and its role in society and risked extinction.

However, since the eighties of the nineteenth century, things changed: the desire for the preservation of traditional values led to a revival of past practices, including cha no yu which regained its respect. However, this did not remove the fact that now, in a society very different from that of the past, tea Ceremony had to play a different role, and obtain a space

in the rapidly changing new Japan.

The values he proposed had to be revised or reinterpreted in a practical way to the new needs of a modern, egalitarian and democratic society.

Some schools tried to find a compromise between new social needs and strict tradition. Currently, about a dozen schools are working on the training of cha no yu students and teachers. The main ones are *Senke - Urasenke*, *Omotesenke* and *Mushakōjisenke*, *Narary*, *Rikyūryū*, *Yabunouchiryū*, *Higokoryū*, *Oriberyū*⁴¹.

Retracing the long history of tea in Japan, it is clear how its value has changed radically.

What does remain of Rikyū's wabicha?

During the years the cha no yu took on different valences and roles.

Thus, in the sixteenth century, it was used as a symbol of power and a diplomatic instrument. Then, during the long period of the Tokugawa pax, it became an expression of the Confucian ideals that instilled a respect for authority. Currently, it took new and different paths, becoming a **symbol of social status**, with the function of providing **excellent education to women**, and as a representative of "culture" of an era that was now the past.

Alongside this, the tendency to consider cha no yu as pure **leisure**, but often devoid of spiritual value, has become stronger. The appropriation of the tea ceremony by women has radically changed the **authentic sense of this art**, pushing it more and more towards a purely artistic form. However, the top of the various large schools preserved the legacy of the past. On the other hand, the high diffusion as a practice to make known the Japanese culture that today is under the eyes of all could only dilute the spiritual strength of the great founding masters who, instead, acted in a very narrow and elite environment. As always, the popularisation and dissemination that bring culture to the masses have, as a consequence, an inevitable weakening of the original strong ideals.



5.2.2 Tea house

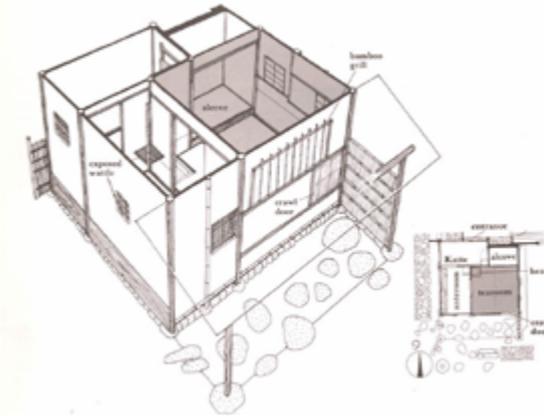
As the F. Montagnana said on his scientific article about tea house's architectural analysis, "Teahouses (*chashitsu*), extraordinary places for meditation, are some of the most important sources for medieval and modern Japanese aesthetics." His essay provides an introduction to concepts and images that are deeply rooted in Japanese culture by illustrating the specific and unusual nature of the place conceived for the tea ceremony.

Sen no Rikyu conceived kind of small teahouses which best embodied the principles of

humility and silent respectfulness. It was his philosophy that gave rise to the architectural style known as *sukiya*. At that time, builders and tea masters took the raw materials directly from the forests, combining timber, bamboo, reeds, clay and a variety of building materials, all of which maintained their original colours, forms and textures. As we said in chapter 3, the design imperfections of nature provided a source of aesthetic inspiration for who was involved in building a tea house.



Sen no Rikyu conceived the tea room in its almost definitive form of *roji-soan*, a hermitage or "rustic" hut in the garden. The *Tai-an chashitsu*, which is located today inside the *Myoki-an* temple in *Yamazaki*, not far from the ancient capital of *Kyoto*, was attributed since the *Edo* period (1600-1687) to Sen no Rikyu, and it is the only one of his architectural works which are still relatively intact. Its



construction is dated around the year 1583, the eleventh year of the *Tensho* era. Precisely in that period Sen no Rikyu confers expression to the *soan* style, giving the room the size of only two *tatamis* (approximately 180x180 centimetres) and aiming each solution, choice of materials, lighting and any artefact used in the ritual of the tea ceremony towards one single objective: letting the self be immersed in absolute space.

The space of the *chashitsu* and the *roji* (<https://en.wikipedia.org/wiki/Roji>) is not the space in opposition to the self, but rather the space in which the self finds itself, the place

of the non-mind. From then on the *chashitsu* is recognised as the inspiration for a style of a mostly elite residential architecture, which presents a rare opportunity for a very individualistic expression within Japanese architecture. The meaning and interpretation of the tea room are complex and convoluted.

Coming back to *Chanoyu* meaning, it is an art that is based on the aesthetic and functional research on the utensils used for preparing tea, flower arrangement, the art of gardening, the preparation of food for *kaiseki*, calligraphy, ceramics, and involves as well the ways of behaviour.

Talking about the structure of the Japanese tea house, it usually consists of two rooms: one is the *mizuna* where the host prepares food and snacks, and tea supplies are stored. The other room is the main room, one where tea is served. Outside the tea house, there is a garden referred to as the *roji* – dewy ground. Guests cross it on a path of stepping stones admiring nature. Before entering the tea house building, they have to purify themselves washing the hands at a rock sink.

To enter the tea house, the guest has to bend and enter through a low and small sliding door which is called "*Nijiri-guchi*", which makes people inside the tea house equal, regardless of rank. This door is a crucial point of the Japanese culture, which refers to the respect among people, and it makes possible to bow down to enter.

5.2.3 Tea daily consumption

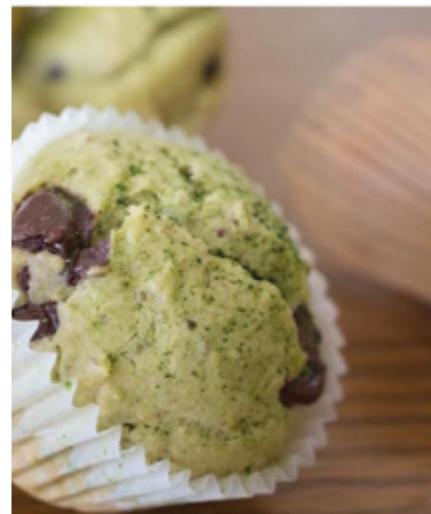
The current Japanese teas are most absolutely not the teas that were known a few hundred years back. Indeed, the manufacturing method for sencha was developed in 1738, the demand for matcha declined in the early 19th century, and the gyokuro tea was invented as a new way of processing tencha leaves. Finally, in the early 1920s, hōjicha was discovered as a method to process stocks when sales stagnated to recuperate older leaves.

All these influences brought about a change in the approach and usage of tea. It is the same as the invention of the **PET bottle** and the use of green tea in **recipes for sweets**. When the demand for PET bottle tea increased, tea farmers adjusted to produce more tea leaves suited for PET bottle use. With the upcoming of tea sweets and the rising demand for matcha abroad, tea farmers gradually began to change their production to tencha leaves.

The rising demand for matcha abroad is related to a **"healthy trend"**. The recent research discovered various health benefits, and the West has grown more health-conscious in the last few years.

Japanese green tea cafes

The rise green tea cafes are an aspect related to Japanese and foreigners tea consumption, where green tea was available for free as a refreshment. Usually, people can enjoy a few varieties such as sencha, gyokuro and matcha, often thanks to a Japanese tea instructor or advisor. Green tea in Japan is served as a welcome drink upon entry of a store or restaurant. They are usually free of charge and are custom etiquette in Japan. Since the offered teas are low-grade varieties (bancha, hōjicha), it is not very easy for green tea cafes to push the customer to pay for a cup of a more expensive higher-grade sencha or gyokuro.



Green tea sweets

For centuries matcha powder has been used in food and rice cakes. Indeed, tea can also be eaten, besides being drunk. This viewpoint of tea consumption changed recently and is being applied to western sweets as well. People can buy various “matcha-flavoured” sweets such as cakes, macarons, candies, kit-kat. They become extremely popular, especially among the young.

Powder tea

Little stick Packs are easy to carry anywhere, so people can enjoy drinking genuine Matcha anywhere, anytime, freely. Stick packs make it easy to make Matcha Latte, or for making Matcha confections or other culinary items in the kitchen.

“In succession to new inventions and the discovery of new approaches to Japan’s tea, perhaps the time has come to leave its trusted environment and expand its borders?”

The **Japanese Tea Instructor Association** (日本茶インストラクター協会) founded in 2002 aims re-educating the people regarding tea variations, brewing methods, other applications of tea. Nowadays, the organisation educates tea advisors and conducts a private and voluntary examination to test basic understanding and knowledge of tea amateur. In some places, the association organise events, workshops or specified classes for re-educating people to tea culture.

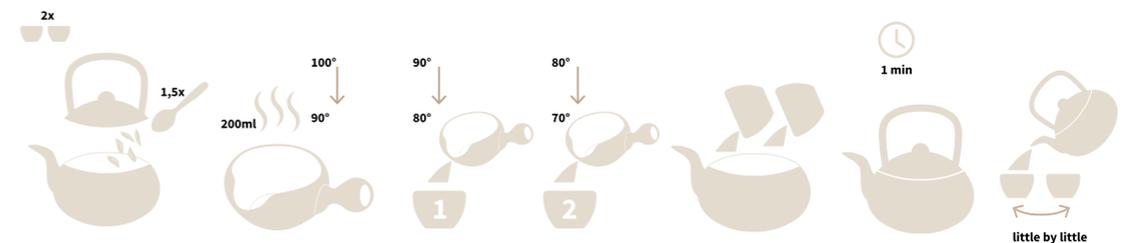
The **following diagram** represents the key processes for making the **brewing of Japanese tea** that the association undertakes to tell to convey the whole Japanese tradition.

- Place one tablespoons and a half of Sencha into the Kyusu (boiling pot). Pour hot water (200ml/7.04fl oz) into two teacups or water cooler (Yuzamashi, it is much

better) to adjust the water temperature. On the first pour, it will be about 176F (80°C) which is the perfect temperature for brewing Sencha. (On the second pour, it will be 158F (70°C) which is the perfect temperature for brewing Gyokuro.)

- Pour the warm water back into the Kyusu and wait for 1 minute as the Sencha brews.
- Pour tea from the Kyusu into each teacup alternately little by little, so that the quantity and taste of the tea is equal in each cup. Please pour all of the tea out from the Kyusu until the last drop, or else the second brewed cups will not taste as well.

High quality tea leaves may be reused three times. Brew for a slightly shorter time (40 - 50 seconds) for the second infusion. Use slightly hotter water and a longer brew time for the third and last infusion.



5.2.4 Tea ready to use consumption

The green tea daily consumption changed, for example, when **plastic bottles** appeared on the Japanese market in 1990. Beverage companies during the first few years restricted production to 1 L bottles or more capacious because the smaller volumes would have increased littering. The restrictions were lifted in 1996 and products in 500-ml bottles that could be easily carried around led the rise in consumption of bottled green tea. An approximate amount of 25,000 tons of tea leaves were necessary to satisfy the new market of plastic bottles. As a consequence, high-quality tea such as gyokuro or high-grade sencha dropped in demand.

The proportion of money spent on prepared tea drinks and tea leaves changed radically. The household spending on tea drinks surpassed green-tea leaves for the first time in 2007. Currently, the **packaged green-tea** drinks now account for around 65% of spending, compared to 35% for green-tea leaves.

More and more people, particularly younger Japanese, as we said with the survey made at NCU, prefer bottled tea instead of brewing a fresh pot, and it has become routine for Japanese to consume **prepackaged tea even when at home.**

Beverage companies rely on low-quality tea leaves to brew prepacked tea, lowering the demand for high-quality leaves picked at the harvest season. Therefore, tea cultivators have met the growing demand for cheaper leaves, increasingly harvesting leaves after the first harvest (Ichibancha), which are low-quality one.

Western drinks available on the market (such as soft drinks, coffee) cause a competitive market. Indeed, in contemporary, mostly younger households, the Japanese teapot is slowing disappearing, replaced by the coffee machine.



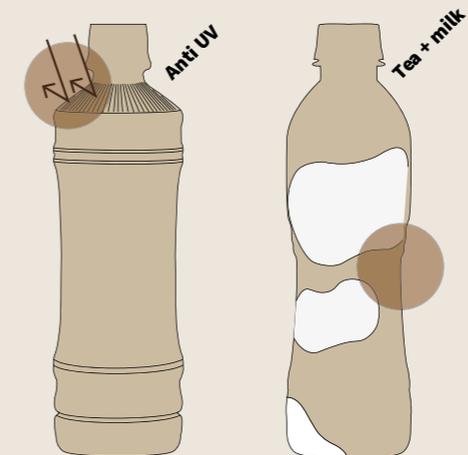
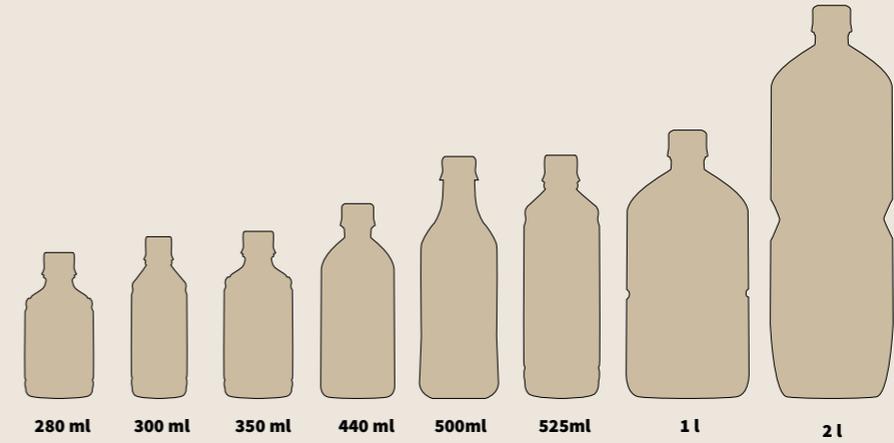
PET bottle



PET pet bottles available in Japan are very **different in sizes and shapes**. Vending machine sells tiny size of PET tea bottle, starting **from the 280 ml until the 525ml**. Shops also sell a bigger size, until the **2 litres size**. The shapes are different among the companies and depending on the typology of tea.

For example, there is a PET bottle containing Gyokuro that express the preciousness of the contained tea through a piece of fabric bound with a wire. Some PET bottles are quite similar to the **soft drink one**. It is a lack of communication of the tea culture. Some shapes are very particular: there is a PET bottle that is very ergonomic because of the presence of slots over the bottle that reminds the bamboo shape. Other that contains matcha latte have the graphic of the cow spots.

Finally, there is a special PET bottle suitable for been heated in the microwave and another one that has lots of slots that keep the UV rays outside the bottle.



TEA SECTOR

Farmers

Tea farmers are generally the owner of several tea plantations. They take care of tea plants all over the year, from planting the seedlings to the harvest.



Seasonal workers

Farmers need seasonal workers, especially during the harvest sessions, because the taste of the tea leaves profoundly change day by day. So it is necessary to harvest in the shortest possible time. This kind of workers are not unemployed during the remaining time; they usually work as clerks in tea shops and as workers in the paper industry that makes decorations for the shrines.



Tea evaluator

Tea evaluator must consider the colour, aroma. The analysed tea is not the standard tea prepared in the same way consumers would drink it. Indeed, the steeping time in boiling water is longer. It should be specified that this actor is not an appraiser, but a *connoisseur*.



Tea appraiser - Chasho

Japanese tea appraiser is someone being paid to evaluate the quality of teas for a finishing factory. The taste and flavour of tea leaves slightly differ from each other by daily maintenance procedure of tea plants, picking and processing methods of tea leaves, and even the one picked from the same area. Tea appraiser is familiar with tea leaves from cultivation to processing. They can discriminate subtle difference of the leaves by making full use of five senses, including the "weight", "touching", "flavour", "complexion", "watercolour" when pouring the hot water and its "taste", "richness" and others.

Tea master- Teishu (亭主) (Tea ceremony host and teacher)

The teishu is the practitioner and teacher of the tea ceremony.

Becoming a licensed teishu can take anything from 10-20 years, depending on the individual, and involves some considerable expense in lessons and registration fees, not to mention the high cost of equipment, utensils and appropriate ceramics.

Being a *teishu* is a role suitable for both men and women, but at the beginning of 1900, few females were expected to have careers. For them, education was more preparation for married life, wherein skills for receiving and entertaining guests could be necessary for finding a husband. Those skills encompassed three main disciplines essential to Japanese

hospitality: washoku (和食), or culinary arts; traditional aesthetics; and the tea ceremony, which itself is as much about aesthetics as it is about tasting tea. Tea masters wear kimono during the tea ceremony.



5.3 Wine world and history

5.3.1 Wine tasting and tools

The analysis carried on in this section of the paper does not provide for an in-depth development on the methodology for wine tasting. The aim is to provide an overview of what we can define as the most performing way of consuming wine, aimed at discovering its aromas but also the hidden culture behind a sip of this excellent drink.

THE TASTING EXPERIENCE

The term *wine tasting* (in the wine sector, only tasting) is a technical procedure aimed at determining the organoleptic characteristics of the wine as far as possible, assessing its quality or establishing any defects.

A nice dinner, the company of friends and the tasting of wine, create moments of cheerful conviviality, but wine tasting is another thing. Tasting is the analysis that takes place only with the help of the sensory organs, during which the risk of being guided by personal tastes is always lurking.

Learning to taste means tasting the wine carefully, connecting the sensations perceived to its history and its evolution. The reactions of most people who participate for the first time in a guided tasting are of amazement

and admiration in front of the description of a wine, designed with precise strokes of colour, perfume and flavour, nuanced in reflexes and unrecognisable odorous notes, often even unknown to the listener.

For tasting wine, it is essential to train the senses, to acquire excellent tasting skills it is equally crucial to have an agile memory, able to retrace the tasted wines in rapid succession and to make a useful and quick sensorial and qualitative comparison. The tasting is therefore not only a theoretical study, even if it requires the knowledge of essential notions of viticulture, oenology and physiology.

THE WINE ANALYSIS

Wine, made up of over **600 different substances**, can be subjected to two types of analysis: **chemical-instrumental** analysis and **organoleptic analysis**. The first is carried out in equipped chemical laboratories, in which expert technicians apply methods and operations that allow to distinguish and quantify each component of the wine, to verify that the product corresponds to specific requirements also from a legal point of view.

Very sophisticated reagents, equipment and instruments can analyse the percentages of al-

cohols and polyalcohols, terpenes and esters, ratios between sugars and acids. Data can not say anything about the absolute quality of the wine. It is impossible to read between the analytical-instrumental results the sensations that a glass of wine can communicate. It does not mean that tasting is an exercise in imagination, nor that the use of poetic terms and images present only in the taster's mind is sufficient to describe a wine.

Indeed, the only tools that man uses to make the tasting are the sense organs. Sight, smell, taste, touch, are the senses directly involved, for this also defined the senses of tasting, which must read what is in a glass of wine.

The tasting, although supported by the instrumental analysis, allows verifying that the wine has reached the perfect harmony from the visual, olfactory and taste-olfactory profile, therefore to give a safe and definitive judgment from an organoleptic point of view.



WINE TASTING TOOLS

In addition to the fundamental technical preparation and experience that every sommelier must have, some accessories are essential and essential.

The first is the *tastevin*, now almost fallen into disuse as a technical tool, but, it has taken on the value of an authentic emblem of the category. Nowadays, this accessory informs us if a sommelier is on duty or not. When in service, the tastevin is hanging on the neck, when instead the sommelier ends his shift, he hangs the metal cup on the jacket pocket.



Perhaps the essential tool is the *corkscrew*. It is with the corkscrew that the sommelier opens the bottle. The corkscrew of the sommelier must be of a pocket type, with a sober aesthetic. It is equipped with a blade, self-tapping screw and support tooth for extraction. This type of corkscrew is available in different materials, but the salient features remain common. Other types of corkscrew - such as,

for example, the well-known home model, with the two characteristic lateral extraction levers - are not allowed.

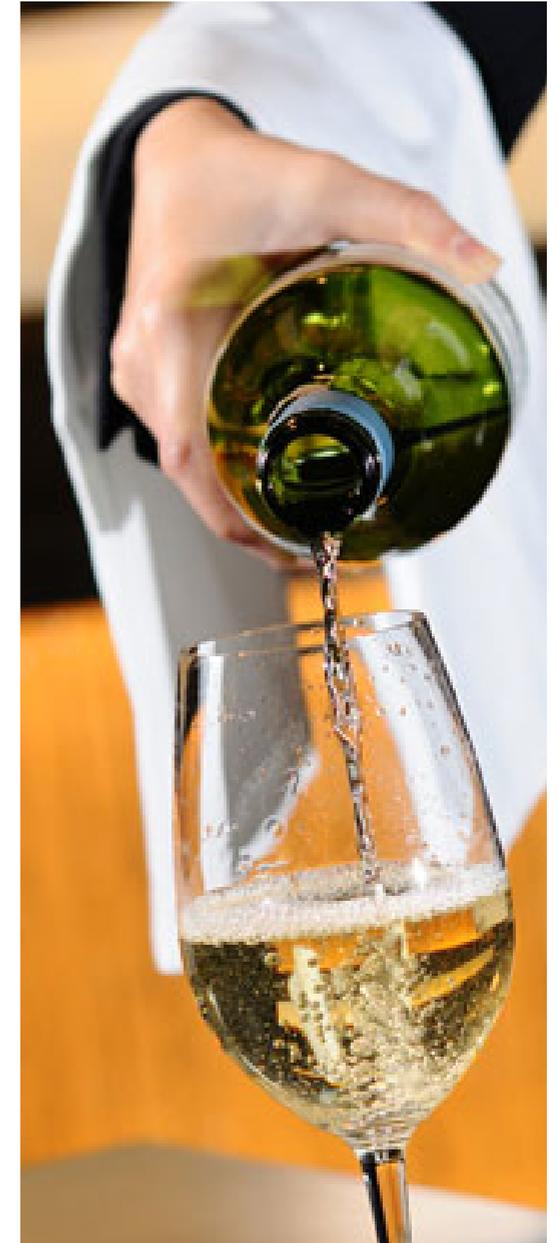


The "*frangino*" is a small napkin - usually made of white cotton - used both to clean the bottle of any cork residue or "tears" after uncorking, and to place the bottle on it when moving between the tables and the guests and, finally, to dry the neck of the bottle after pouring the wine into the glass, to avoid the loss of drops.

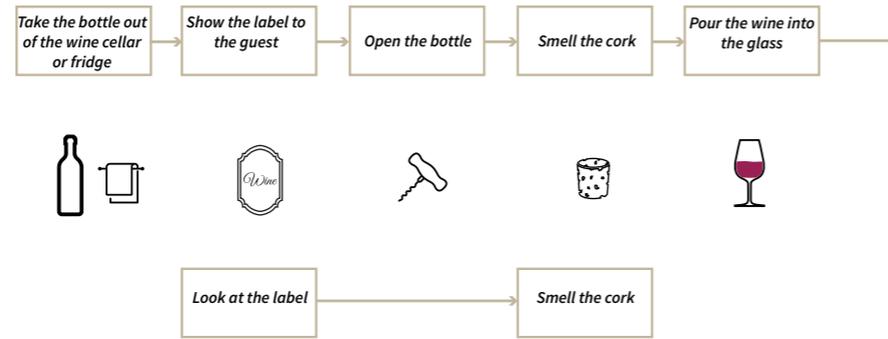
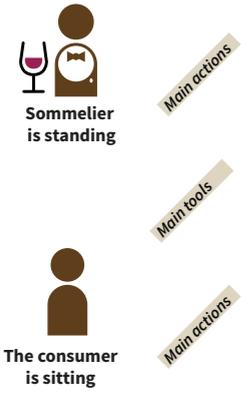
Another main accessory is the *thermometer*. To fully enjoy the qualities of a wine, it must be served at the right temperature, which varies, depending on the type of wine. Thanks to the thermometer (there are specific ones, designed specifically for oenological use) the sommelier can evaluate whether a bottle has the correct temperature or not.



The primary function of the *glasses* used during wine tasting is to rebalance the sensations, both olfactory and gustatory. The most suitable material for wine tasting is glass, or rather crystal, transparent, thin, perfectly dry and clean. It should be colourless and free of writing. For correct use, the sommelier must interact with the glass by grabbing it "by pliers" from the base, or directly on the stem. The cup should not be touched with the hand because otherwise the contents could be heated, and the olfactory examination could be altered later.

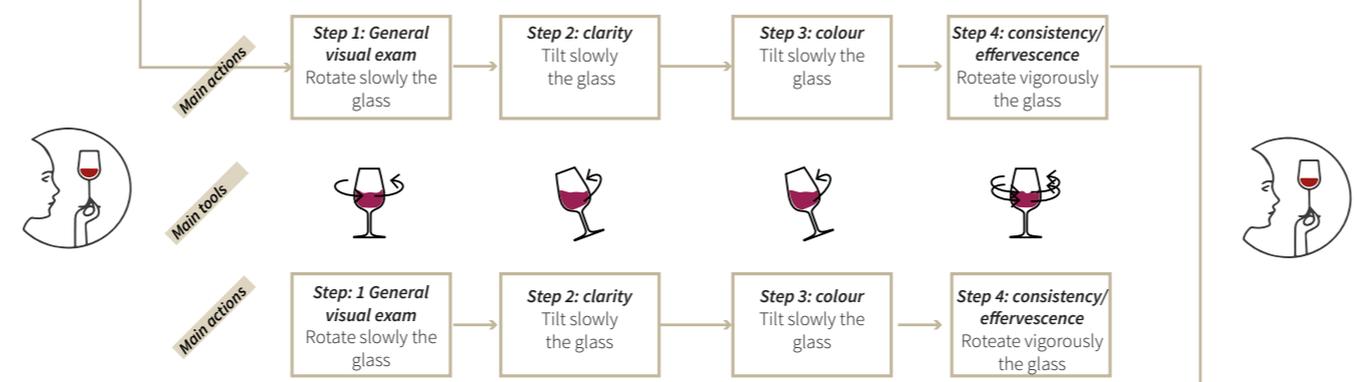


Presentation of tools



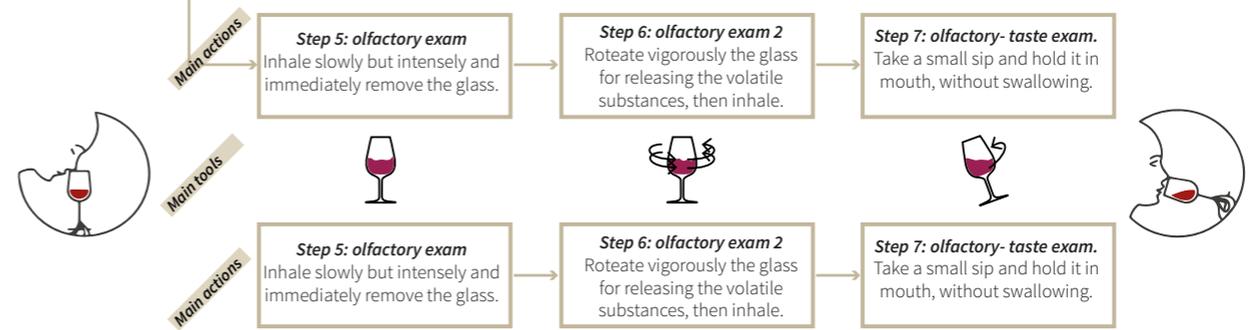
Visual Analysis

Sommelier as a teacher of tasting



Olfactory - taste Analysis

Sommelier as a teacher of tasting



5.3.2 Infernot



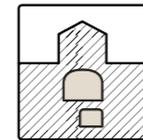
The Infernot are underground rooms wholly dug out of the **Pietra da Cantoni**; they are places with no ventilation, located below the typical houses of a lower level than the cellar. They were used for storing wine in bottles, thanks to the constant and optimal temperature of the which they enjoy. The Infernot, due to their location, are mostly private places; nowadays there is only one public Infernot, the centres of the Ecomuseo della Pietra da Cantoni in Cella Monte. During the year, the ecomuseum in collaboration with the 14 municipalities organises days in which the owners open the doors of their homes and make their Infernot available to strangers. Recall that the Infernot give the name to the

core zone 6 of the Unesco area. Indeed, it is called Monferrato degli Infernot, whose total area is 25610000 square meters, and includes the municipalities of Cella Monte, Ozzano Monferrato, Sala Monferrato, Rosignano Monferrato, Ottiglio, Olivola, Frassinello Monferrato, Camagna Monferrato, Vignale Monferrato, Ponzano Monferrato, Treville, Terruggia, Grazzano Monferrato, Fubine Monferrato.

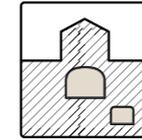
The Infernot is considered a **cultural place** where traditions have been handed down from families until today, hidden places, until a few years ago, mainly private. Originating from the mid-1800s, they were dug without any particular notion of architecture or engi-

neering. Peasantry used the "full vacuum" technique, a very ancient subtraction technique with which space is obtained by extracting material. The infernot was dug in the winter period when the harsh temperatures forced the farmers to leave the work of the fields. The complete construction is supposed to take place within two or three winters, but this depends on the size and complexity of the construction. Infernot is **located about three or four meters below ground**, and it is different from the wine cellar, built, they were and are still used mainly for storing bottled wine. In the past, these places were also used as meeting places. Indeed, the young men of the

Under the house



Under the street



town sometimes organised "*Ribote*" among them, convivial gatherings in which they drank good wine and ate a snack with friends.

Each infernot is a unique work thanks to the imagination of the one who thought and realised it. There are different types of infernot, with different layouts of spaces and environments. They are also characterised by different types of housing for the bottles: niches, tiers, floors. Furthermore, sometimes people can observe real decoration works carved in the heart of the rock.

The Infernot ensures a constant temperature

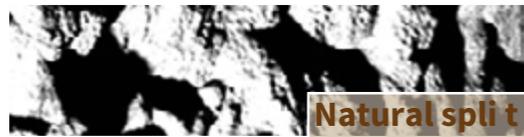
all over the year: from 8°-9° to 12°-13° during the winter and from 10°- 11° to 14°-15° during the summer. The temperature can slightly change to function of depth, location and exposure of the infernot. The humidity rate is about 65%.

The regulations that allow establishing whether the underground rooms are infernot are:

- It must be excavated in the Pietra da Cantoni stone and other sandstones of the territorial basin, geographically located in the Monferrato Casalese.
- It must be colour utilising an "excavation", that is, through the removal of sandstone. There must be no walls, vaults or ceilings built.
- It must not have openings towards the outside beyond the entrance opening.
- The Infernot must have a definite form like that of an environment. The Infernot does not have environments with open niches on cellars or underground also dug in the stone
- It must have several rooms of different shapes arranged on different levels.
- It must have one or more containment and storage solutions for bottled wine.

Storage areas, such as shelves, can also be added after excavation.

- It must not have undergone numerous maintenance and use interventions. It must be as equal as possible at the time of the excavation. The finishing of the walls are the following:



Natural split

Natural: more regular and finer finish, due to a laborious and hard work that allows, however, to enhance the geometric perfection of the infernot.



Pickaxes

Pickaxes: the most common finish in the infernot obtained from the Pietra da Cantoni. The marks left by the picks and the blades in the rock are easily visible.



Shaving

Shaving: a type of finish due to the lack of sedimentary homogeneity of the sandstone; the walls are irregular and rougher due to the poor workability of the stone.

SHAPE AND DISTRIBUTION

This refers to the relationship between surface and height, the subdivision and the layout of the space. The “Infernot” may be:

One Room: It consists of a single environment; the most common plant the rectangular one followed by that round. Most of the infernot surveyed present a table in the centre.

Multi-rooms: It consists of two or more rooms connected by corridors or stairs, as the rooms are almost always on different levels.

Corridor and room: The corridors that connect the different rooms sometimes represent real storage compartments with floors, niches and in some cases bottle-shaped niches.

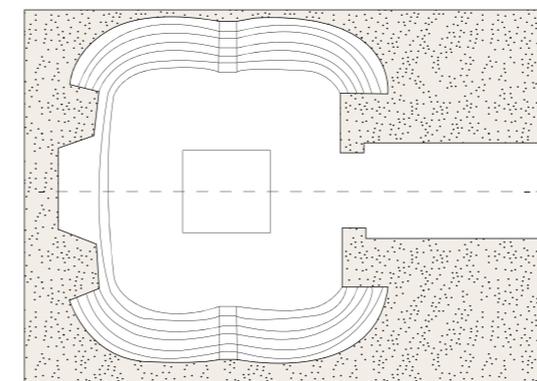
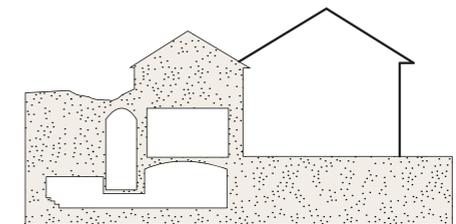
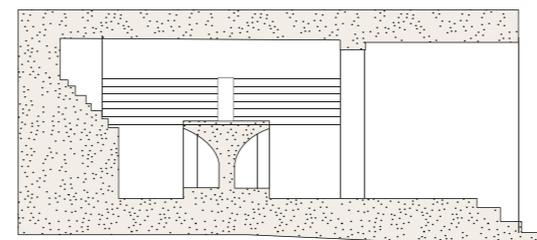
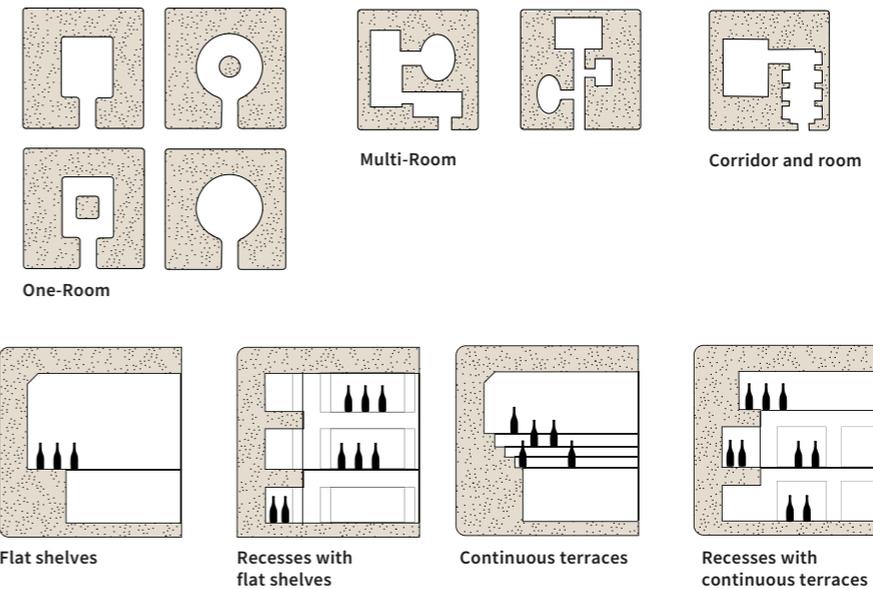
CAPACITY AND CONTAINING SPACE

This refers to the containing structures carved into the walls during the excavation. These consist of recesses or shelves for preserving the bottles of wine.

These structures may be:

Flat shelves: shelves run along the perimeter of the infernot, they are found on one level, and it can be a principal element or form a top for the recesses.

Continuous terraces: In this case, the steps of support allow for the complete viewing of the bottles.



Description: Infernot square-plan monocamera and a continuous series of steps where bottles are placed. At the centre there's a five-legged sculpted table. It's at the same level as the cellar and is connected to it by a short corridor.

Area: mq. 7,80 c.a.

Height: m. 2,00 c.a., located at m. -3,30 c.a. under the ground level



5.1.4 Wine daily consumption

The evidence relating to wine, as on average first and then as food, date back to Roman times in Italy. Talking about the changing phase of wine consumption, it is necessary to make a temporal leap towards the modern era. From 1861 to 1941, a historical period was defined in which the consumption of wine rose and stabilised around 100 litres per capita.

Going beyond the period of the Second World War, the wine between the fifties and sixties becomes a way for quenching the thirst for a hard life in the countryside and *friendly drink* of everyday life and family consumption. With the arrival of the 1980s, wine became a status symbol. The consumption was diversified among "vinello" to drink at home and wine to be consumed in events and dining at the restaurant. With the 90s, the brands of DOC establish a sharper change linked to consumption. It generated an *increasing trend in the purchase of wine already bottled* and not to be bottled.

It is thus undergoing a greater diversification between the wine consumed at home and the one purchased at the restaurant or to be given to friends as a gift for the invitation to dinner. Data, texts and information about the history of wine consumption define wine as one of the heritage of Italian food and culture. Despite the evolution in lifestyles and fashions, and the succession of economic cycles with

their fluctuations, over time it has maintained its intrinsic stability, even symbolic, as a good that marks, in a certain sense, moments of conviviality in the passage to the adult life of generations.

From 1950, viticulture and wine took on increasing importance, but the decisive century was in the twentieth century when starting from the second half, the first DOC label was established. Over 50 years, these certifications have brought our country back to world records like France, the great protagonist of the last four centuries. Thanks to the legal restrictions of the production regulations, the cultivation and *production techniques* have been *significantly improved*, and today there are excellent results in terms of product quality.

Wine, as mentioned above, is a drink that accompanies people in the life cycle as regards the different social classes, it belongs, to the different age classes. In 2016, 54.6% of Italians aged 65 and over, 58.4% of those aged between 35 and 64 and 48.6% of Millennials, i.e. young people aged between 18 and 34.

The origin, *certification of quality* and territorial value, brands, are criteria for choosing good quality wine that guides Italians. These two aspects, in particular, define a type of food consumption that has the potential to rise on the value scale, because it meets the demand for quality of Italians and on which it is possible to intervene by educating consumers to guide them more in responsible purchasing.



5.1.5 Wine extra-ordinary consumption (*aperitivo*, wine tasting experiences, events)

There is a widespread habit of drinking wine in Italy, but it cannot be said that there is an equally robust culture of consumption. Wine is drunk on different occasions, with different modalities and frequencies among the various population groups, with definitely more considerable attention to the product than other categories.

Socialisation helps and reinforces positive attitudes to wine consumption. The aperitif with friends, the Happy Hour (cheaper solution to restaurants), events, fairs, food and wine experiences during moments of relaxation such as holidays and weekends are spreading more and more and wine takes a central role in these occasions.

A drink that cannot fail to be present in significant moments of people's social life, from parties to dinners with friends, and increasingly also in moments of personal self-gratification or simple meditation, according to the needs and behaviours of increasingly evolved and selective consumers.

Wine has the possibility of confirming itself as the pivot of economic valorisation processes of territories, communities and local economies, especially in Italy and specifically in Piedmont, also in the Monferrato area, going far beyond the sale of the product. The wine, better than others, embodies intangible, intangible values, which arise from the perception and representation that people have of the product. Wine embodies knowledge and

flavours of a territory, expresses its atmospheres as a cultural object that takes on social meanings that are not necessarily linked to its material, organoleptic content.

Wine has become the pivot of articulated platforms in which a multiplicity of consumption converge which generate income, employment, economic and social value.

The numbers of Italians who are involved in activities related to wine and its consumption are many, as a 2017 survey carried out by Censis shows:

- 16.1 million in a year participated in events, festivals, local festivals related in some way to wine;
- 13.7 million went on holidays, trips to places famous for their food and wine;
- 14.2 million went to places like restaurants, trattorias because they had modern wines.

At least one **wine correlated activity 24.0 a.v. (in millions):**

- 16.1 - events, festivals, local festivals related to wine
- 13.7 - go on holidays, trips to places famous for its food and wine
- 14.2 - go to a restaurant/trattoria/agriturismo because it has excellent wines



WINE SECTOR

Viticulturist

At the top of the chain, there are figures involved in the fields.

The viticulturist monitors and controls disease and bugs, fertilises, irrigates, controls the growth and properties of grapes, decides when to harvest, and vine pruning. They are also personally involved with winemakers during the wine process because vineyard management and the resulting grape characteristics provide the basis of winemaking.

Seasonal workers

Most viticulturists, who are owners of vineyards, have a team of migrants labourers for the harvest to offer the necessary support during the harvest season. There are several laws to manage the immigrants flows in order to ensure the right employment contract for those people who come from abroad.

The technical agronomist of evaluation and design of vineyard plants

The agronomist, in addition to coordinating and supervising the work of the winemaker, advises on the knowledge of the physical and structural characteristics of the territory and the land and the agricultural competence.

This figure has the task of enhancing and managing agricultural, zootechnical and forestry

production processes. His work does not only concern the agricultural aspect but is also an intellectual profession because he is concerned with studying the urban planning and landscape features, carrying out chemical, physical and biological analyses of agri-food products, and making assessments on water resources.

The responsible for analysis and quality control of the grapes.

This responsible coordinates a team of people asked at different times during the grapes ripening phase. The team has the responsibility to control the physiology of the vine and assesses the ripeness of the grapes (like the values of sugars, total acidity, pH, malic acid and tartaric acid) as well as their phenolic maturity (like the accumulation of phenolic substances capable of bring colour and structure to the wine).

The cellarman

The cellarman, he works in the cellar, at the heart of the production process, is a skilled worker who takes delivery of the grapes harvested by the harvesters and follows all the operations of transforming the grapes into wine, from crushing to fermentation.

He has a thorough knowledge of the production process and specific technical know-

ledge regarding the functioning of all the equipment used in the cellar. It continually interfaces with the oenologist for the definition of processing procedures and standards, with particular reference to the management of fermentation tanks and temperature control.

The enologist

He works both in the vineyards and in the cellar and is the person who controls all the production phases, from cultivation to harvesting grapes, from vinification to bottling, up to the conservation of the wine itself. The enologist's main task is to make sure that the wine is produced safely and correctly from a physical, chemical, organoleptic and legislative point of view. He continually works with the cellar manager and participates in product development activities with the company's strategic direction and with sales and marketing functions.

The sommelier

The sommelier, even if he is at the margins of the wine production process, brings together passion, professionalism and the culture of good wine. Its mission is to taste and to taste the wine, providing the tools to distinguish, appreciate and judge it. However, the tasks of the sommelier also diversify and require a thorough knowledge of the vines and their cultivation, the techniques of winemaking and ageing, national and international enography and the combination of wine-gastronomic dishes.



References

Quotes

<http://www.systemicfoundation.org/systemic-approach/>

Bibliography

Francesco M., Tadahiko H., Yoshikatsu H., *Le case del tè. Gli spazi del vuoto e dell'inatteso*, Electa, 2009

Romani Rossella for AIS – Associazione Italiana Sommelier, La Degustazione, ed. Associazione Italiana Sommeliers, Milano, ed. 2016.

Celoria I., Ceresa P., *Infernot. Forme ed espressioni scavate nella Pietra da Cantoni*, ed. Ecomuseo della Pietra da Cantoni, 2005.

Sen, Soshitsu. *Chado: The Japanese Way of Tea*. Masuo Yamaguchi, trans. New York, Tokyo, Kyoto: Weatherhill, Tankosha, (4th printing), 1979, 1998 (4th printing)

Tollini A., *La cultura del Tè in Giappone e la ricerca della perfezione*, ed. Piccola Biblioteca Einaudi Filosofia, Giulio Einaudi editore s.p.a., Torino, 2014

Montagnana F., Tadahiko H., Yoshikatsu H., *Le case del tè. Gli spazi del vuoto e dell'inatteso*, Electa, 2009

Barthes R., *L'impero dei segni*, ed. Piccola Biblioteca Einaudi, 2007

Asian Art Museum, *Experience Chanoyu: The Japanese Art of Tea*, ed. Asian Education, 2007.

Web references

https://en.wikipedia.org/wiki/History_of_tea_in_Japan

https://en.wikipedia.org/wiki/Sen_no_Riky%C5%AB

<https://en.wikipedia.org/wiki/Wabi-sabi>

<https://en.m.wikipedia.org/wiki/Urasenke>

<http://japanese-tea-ceremony.net/utensils.html>

<https://www.myjapanesegreentea.com/japanese-green-tea-in-flux>

<https://www.nippon.com/en/japan-data/h00390/bottled-green-tea-overtaking-home-brewed-asjapan%E2%80%99s-favored-drink.html>

<https://en.wikipedia.org/wiki/Sukiya-zukuri>

<https://en.wikipedia.org/wiki/Roji>

<https://www.patternz.jp/japanese-tea-house-architecture/>

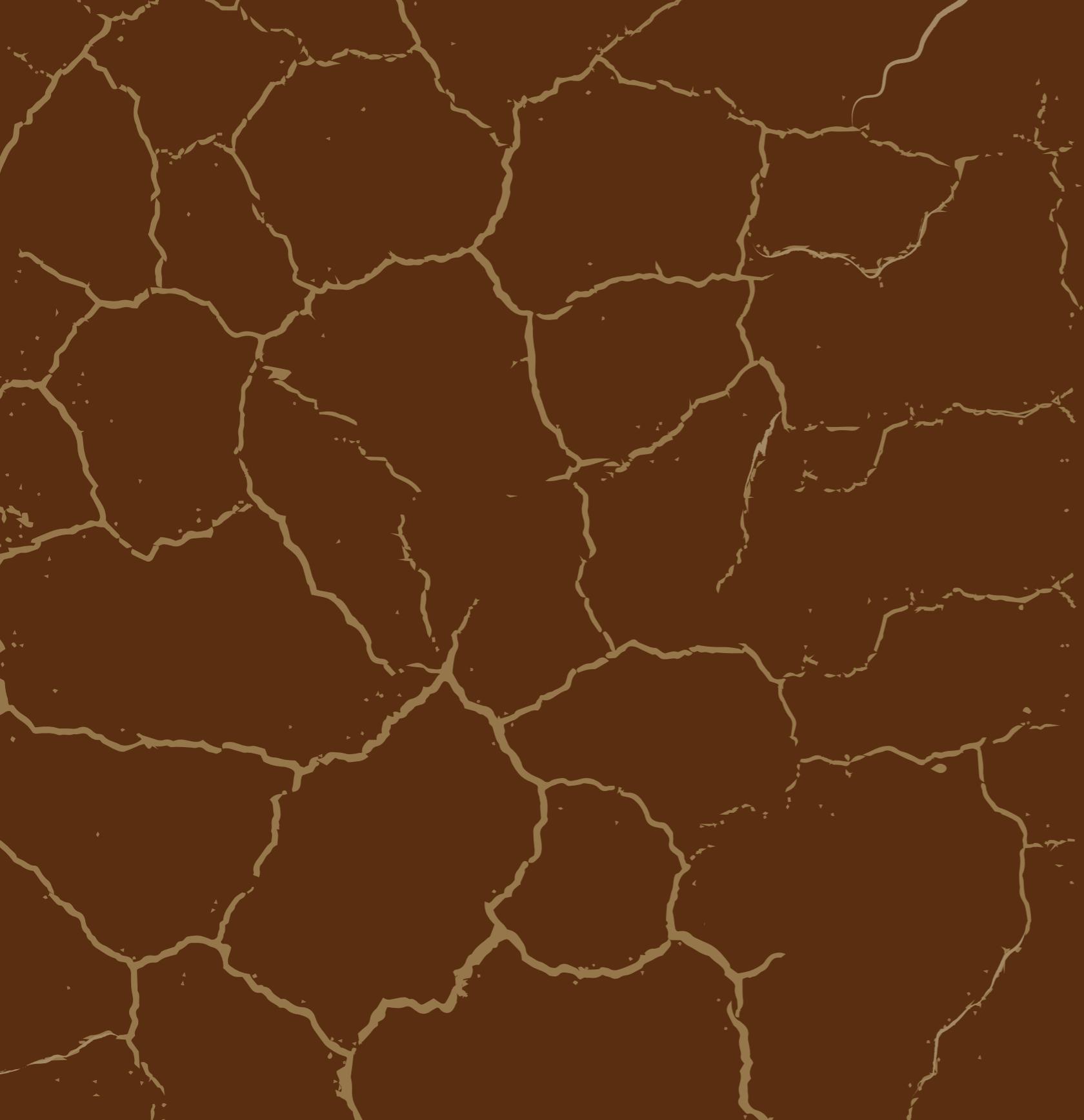
<https://www.ilpuncoldiretti.it/attualita/lavoro/con-il-decreto-flussi-via-libera-a-18milalavoratori-stranieri/>

<https://www.nippon.com/en/views/b05204/shimenawa-the-sacred-rope.html>

<https://yunomi.life/blogs/japanese-tea-guide/how-to-judge-the-quality-of-green-tea>

<http://www.japanese-tea-ceremony.net/>

<https://tokyo-matcha-selection.com/blog/teishu-and-the-way-of-tea-part-1/>



6

ISSUES AND OPPORTUNITIES

*from the rural activities until
the manufacturing process
analysis*

6.1 From the fields to the raw materials

The following analysis aims to divide into steps all the annual growth cycle of tea and vine, in order to identify all the input and raw material outside the supply chain and all the needed efforts for the healthy growth of the tea plantation

6.1.1 Current field management, steps, characteristics, inputs and outputs

TEA PLANTATION

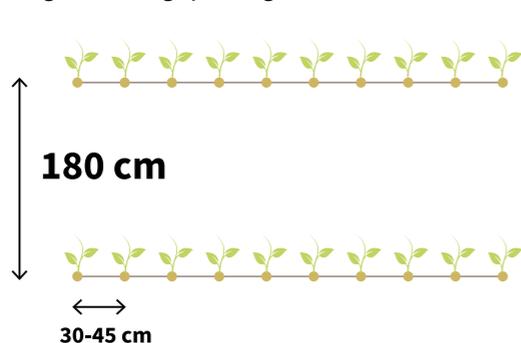
Spring

• Planting

The most proper moment for the planting of cuttings is from March to April. There are two kinds of planting, single-row hedge, and zig-zag (double-row hedge). In both types, distances between two adjacent edges are 180 cm.

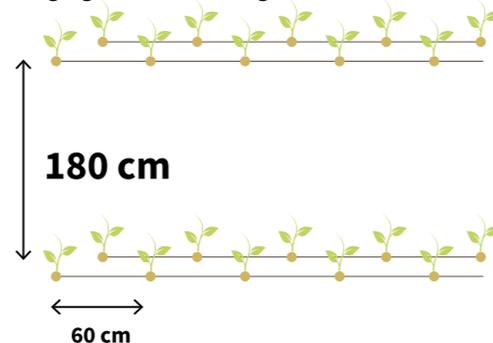
In **single row planting**, the distance between plants is 30 – 45 cm. In **zig-zag planting**, the distances between plants and rows in a hedge are 60-90 cm and 30-60 cm, respectively.

Single-row hedge planting



Tea leaves are usually grown from seedlings; it is less common cultivate directly from the seed itself. It takes approximately **fifteen years** before tea plants cultivated from seeds can first be harvested. For plants grown from seedlings, harvesting is usually possible after about three years.

Zigzag double-row hedge



From Spring to early Summer

• Fertilising in Spring

Tea farmers fertilise their crops about three times from the end of February to the beginning of May, because the timing of the harvest defines the use of fertilisers, with careful consideration of how long it takes each fertiliser to work.

There are two types of fertiliser, the **chemical and the organic one**, and the choice affects the period of application of them. Tea trees that are fed with organic fertilisers at the end of February or the beginning of March, while chemical fertiliser containing nitrogen, phosphoric acid, and potassium is applied in the middle of April. Moreover, ammonium sulfate fertiliser, which is nitrogen-based and **rapid-acting**, is applied at the beginning of May, which is just before harvest. Organic fertilisers **work slowly**, and ammonium sulfate fertiliser works fast. When the old tea leaves have become a deep burnished green colour, the tree is absorbing enough nutrients.



The fertiliser is put all around the base of tea trees.

After each application of fertiliser, the farmer makes shallow tillage and inter one (5-15 cm in depth), to mix the soil, the fertiliser, and the weed.

In August, deep ploughing is done to help new rooting, to combine organic matters and

soil and to increase the physical and chemical properties of soil after application of organic matters (lime-magnesium).

The absorption rates of the different fertiliser by tea plants are different: nitrogen 40-50%, phosphorus 20%, and potassium 45%. It means that on 1.000 kg of green leaf (fresh weight) contains approximately 12,5 kg of N, 2 kg P₂O₅ and 7,5 kg of K₂O.

Generally, the conventional quantity of fertiliser is determined according to the number of tea harvests. The contents of elements per hectare (18.000 kg of tea leaves) are the follow 540 kg N (3%), 180 kg P₂O₅ (1%) and 270 kg K₂O (1,5%).

• Pruning and Spring Bancha

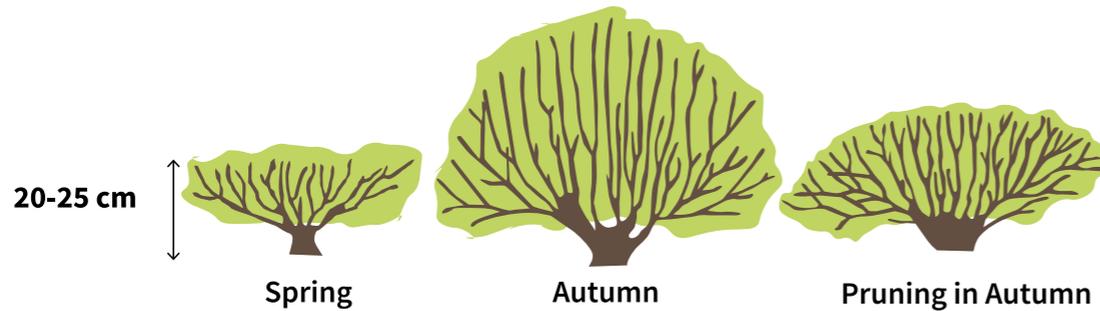
A few years later after planting, tea plants are subjected to trimming and pruning in order to **refresh the vigour** of an old tea plant but also to keep the height of the plucking leaves for an efficient plucking. The trimming and the pruning are two different processes, so they are done in different periods. The first one happens every two/three years and the second one every five years. After every harvest session, the farmer removes the late-emerging shoot to keep the surface of the plant uniform for mechanical plucking.

The best is to have a **bushy shape**, with as many branches as possible, which will multiply the end leaves, the only ones harvested. The trees are cut about one meter high and shaped like picking tables to make the pluckers' work more profitable. The top is cut flat or dome-shaped, to allow all the shoots to benefit from the same sunshine.

Tea plants are pruned in March to prepare for the first harvest; **Bancha** tea derives from the pruning before the harvest, and the large leaves (Kawayanagi) collected in March are used to make Spring Bancha (番茶), which is a low-grade tea.

Tea plants are pruned not only in March but

also in October. Indeed, tea trees pruned in spring growth more vigorously than tea trees pruned in autumn; Trees pruned in autumn can be harvested later. The farmers decide when each tree should be pruned, according to geographic condition and variety of each tree, harvesting schedules.



• Preparing to Harvest

Tea trees for processing gyokuro and matcha are **covered with black fabric curtains** for twenty to thirty days before harvest. There are three kinds of shading (**Kanreisha**): ceiling-shelf covering, simple tunnel shading and direct covering. The first two, “Tana”, shade the tea trees from sunlight by a canopy, while “Jikagise” directly covers the plants. Both were made from straw and reeds but are now made from vinyl sheets. To grow top-quality Gyokuro and Matcha, tea plants are covered with “Tana”.

Shading protects tea plants from the sun rays, but also it protects the new shoots against frost, it prolongs the plucking time. Tea leaves grown this way have a **sweet and mild flavour** because, without sunlight, there will be few bitter tannins. The quality is as a conse-

quence high. Indeed, shading the tea sprouts from the sun rays creates theanine, a kind of amino acid and the key of the mellow taste of Gyokuro and Matcha. The balance between Theanine and Catechin is the key to the taste, which is **sweetness/umami** and **bitterness/astringency**. By covering with black sheets, we can control the amount of theanine that becomes catechin.

Theanine → **Sun exposition** → **Catechin**
 Sweetness → ☀ → Bitterness
 Umami → Astringency

Theanine has relaxing effects and was proven that it could provide a composition for improving and preventing dementia, particularly dementia associated with senescence and the like.

Only skilled farmers can achieve the best bal-

ance of theanine and catechin. Although covering requires much work, the process can create the right amount of umami in the tea leaves. For example, to achieve the high quality of Gyokuro, which includes the elegant aroma, sweet taste, and light green colour, tea plants are covered around 20 days.

In addition to it, the **colour of the leaves** can be changed a lot by covering. It becomes much darker. In general, the dark green one is much more expensive than others because the dark colour means the leaves contain a lot of Theanine, a source of rich taste.

Tea leaves for **sencha are not covered**; indeed, they are grown under full sunlight. With this way, tea results with a bitter flavour, a refreshing aroma, and a golden-green colour.

HONZU

In the Uji area, there is a traditional technique called Honzu, that requires unique and detailed preparation. First of all, high wooden logs used as the vertical pillar are hammered

into the soil, then the horizontal pillars are fixed with bamboo for creating the base structure of the ceiling called “Shitabone”. Over this structure, small strips of bamboo already tied together (yoshizu) are put and spread for creating the ceiling.

Some horizontal logs are fixed in the lower part for completing and toughening the structure.

Standing on the yoshizu, straw bundles are put uniformly all on it. If it does not spread equally, the shading rate inside the field does not become uniform. The structure is closed with the same strips of bamboo even horizontally.

After the leaves picking, the main structure is dismantled, and the straws which are dropped inside the field, and spread, and a tea field is covered with straws. By carrying out like this, it prevents weeds from growing inside the field, and also straws rot, and they become field's nourishment



- **Harvest**

The harvest session begins firstly in temperate regions of the south and gradually moves northward.

Tea shoots grow and **harvest 2-4 times**, from April to October: the first crop is in the last days of April to mid-May, the second crop in late June, the third crop from the last days of July to early August and fourth crop in the mid-September. **The average return of the tea field** (per hectare) **is 8.000 kg** during the first harvest, 6.000 kg during the second harvest and 4.000 kg in the third harvest. Leaves from the first crop are high quality and the high price. Few farmers harvest three or four times because of the low price. The most

suitable time to pick tea leaves is when the tea tree has three to five sprouts. Farmers do not have to pick the leaves that are too large or too small, but they have to guess the perfect time to harvest because if they pick the leaves two to three days late, the tea's quality is compromised and if they pick the leaves too early, the amount is too small.

- **Shincha (fresh-tea)**

Tea shoots vegetate through the winter. At the beginning of March, buds start flushing, and new leaves grow, but they are ready for the first harvest only after a month. The first harvest **Ichibanacha= the first tea flush** is between late April to early May.

"Hachijuhachi-ya" is the 88th day after the first day of the spring season. A traditional belief is that if one person drinks tea picked on this day, he will have health.

Ichibanacha is sometimes called **Shincha**, but in reality, only the Ichibanacha which is explicitly sold as a celebration of the first flush of the year is called shincha.

The term shincha refers to "first picking of the year" as the Ichibanacha, and the refreshing aroma characterises it. **The content of catechin and caffeine is low**, so it is less bitter and astringent than the next harvest. Indeed, shincha has a higher content of theanine, which give it a sweet flavour.

The idea of Shincha is similar to the "vino Nuovo" of Italian wine.

Trimmed by machine vs picked by skilled hands

Tea leaves are plucked both by hand or mechanically. Tea plucking machines can be portable (for one-and two-persons-type), self-propelled (riding-type and walking-type), and rail-tracking one.

The number of leaves harvested by hand plucking is less than that harvested by hand-shear plucking, that is less of the number of leaves harvested by portable plucking machines for two persons. The highest number

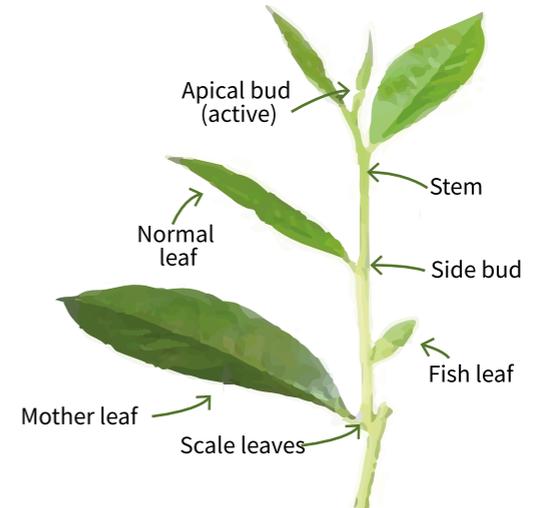
of leaves is thanks to the riding-type plucking machines.

Nowadays, **most tea leaves are trimmed by machines** while traditional hand-picked Gyokuro, Sencha, and Matcha are rare and precious. **The aroma of hand-picked tea leaves is much sweeter and softer than tea leaves trimmed by machine.**

Tea trees are grown differently, depending on the typology of harvest. Tea trees trimmed by machines have the sprouts that grow from the previously trimmed stubble. In contrast, tea trees picked by hand, have tea sprouts shoot from the natural forks in the branches.

A skilled tea harvester can handpick just up to **6 to 8kg** of fresh tea leaves daily. The picked fresh tea leaves must be processed and finished in the same day.

The tea leaves must be picked as quickly as possible because from the time the size of the leaves is perfect and the time the leaves become too large to harvest is just a few days. It is not easy to pick large amounts of tea leaves.



Summer

• **Pruning after Harvesting Shincha-Ichibancha**

After Shincha or Ichibancha, tea plants are pruned. The pruning can be done in **two different ways**.

The first way is for to stop growing and rest the tea plant. Tea trees are **more deeply pruned**, so the trees almost stop their photosynthesis and stop growing. The **tea trees can rest**, and there is less stress on the tea trees that causes an abundant harvest for the next season. Nevertheless, tea trees are harvested only one time in the year, so this is a luxury and rare.

The second way prepares the second harvest, Nibancha. In this case, the **tea plants are pruned just a little**. Tea leaves pruned are not wasted, but they can be processed for becoming premium-grade Houjicha.

• **Nibancha**

Two weeks after the first harvest, the new buds started growing, and approximately in 45 days, the plant is ready for the second harvest, that is called Nibancha. Nibancha cannot beat the quality and aroma of Ichibancha is because of Ichibancha stores nourishment during the winter. **Nibancha grows very fast**, while Ichibancha grows slowly. Also, Ichibancha contains three times more theanine than Nibancha, that is the principal source of the taste.

Nibancha that is the second harvest in June or July **has a less smooth, mellow taste**, and

it **is bitter** than Ichibancha. There are many good quality Nibancha teas, but apart from tea leaves, from Nibancha matcha latte and confectionery products are made.

June and July is the rainy season in Japan, so the weather is sweltering and humid; therefore, the Nibancha harvest is not only tricky for tea trees but also farmers. However, Nibancha is an essential source of income for farmers. Also, insects, who like eating tea leaves, swing into action in June. In the rainy season, the sun is blazing hot, and the air is damp with humidity, and the conditions along with the rich fertiliser fed to the tea plants create favourable conditions for weeds additionally to tea plants.

• **Sanbancha**

In Uji area, tea leaves can be harvested up to Nibancha, the second harvest. However, teas in other areas, such as in Shizuoka or Kagoshima can be harvested up to the third harvest (Sanbancha) or the fourth harvest (Yonbancha). It depends on the climate conditions.

Talking about Sanbancha, to produce a fragrant flavour, **tea leaves are often roasted and drunk as Hojicha**. So, tea leaves picked up during the third harvest are used for bottled tea and **confectioneries products**, because the quality is low.

Ichibancha

8.000 kg/ha

Quality

It's the **highest in quality** because it fully absorbs the **nourishment of the fertilizer** applied the previous autumn.

Nibancha

6.000 kg/ha

Quality

It has a **less smooth, mellow taste, it's bitter** and it has subtle aroma than Ichibancha

Sanbancha

4.000 kg/ha

Quality

It is roasted and drunk as **Hojicha**. Used for **bottled tea and confectionaries** products.



- **The Struggle with Insects and Disease**

Tsuyu is the name of the *Japanese rainy season*, and after it, insects start buzzing around the tea farm. It is a crucial time for farmers to take care of the plants to prevent diseases.

The most amount of fertiliser is put to the tea trees in Autumn. If tea trees are not healthy in fall, due to damage by insects or disease, the tea trees cannot absorb enough of the nutrition of fertiliser. **Weak tea trees will not produce a good harvest.** Consequently, farmers must struggle with them in July and August to keep tea trees healthy.

There are three categories of insects that cause damages directly to the shoots: **rolling insects, mosquitos and mite.** Bacteria or viruses also cause tea tree diseases. Insects and diseases hit mature leaves or new leaves, branches or roots.

Farmers frequently check the plants to see in advance the problems, so, they can immediately take suitable action. To block and destroy insects and diseases, farmers sometimes use **mild chemicals fertiliser.** They are strictly controlled and used cautiously because the concentration standard of **residual agricultural chemicals** in Japan is the toughest in the world. Hand-picked tea leaves required more strict management for preventing insects and diseases.

Following a list of insect and diseases that damage tea plants.

PARASITES

Empoasca Onukii - Tea green leafhopper

These species pass the winters as an adult in tea bushes and damage the budding leaves in the second plucking season.

Caloptilia Theivora - Tea leaf roller

New leaves are attacked in June. Faeces are accumulated in a bundle of leaves rolled triangularly by the larva.

Adoxophes Honmai - Smaller tea tortrix

This pest has four generations a year and overwinters as a larva. Infestation is conspicuous in the second and third plucking seasons. It usually comes just after the plucking.

Homona Magnanimous - Oriental tea tortrix

This species has four generations a year and overwinters as a larva. Infestation is noted in the third and fourth harvest.

Ascotis Selenaria - Mugwort looper

This pest has three generations a year, and its overwintering is a pupal stage.

Tetranychus kanzawai - Kanzawa spider mite

This pest has two tops of infestation, in June and from September to October. The group of this mite is suppressed naturally by its predator "Amblyseius"

Pseudaulacaspis Pentagona - Mulberry scale

During the year there are two or three generations and females are capable of overwintering. Crawlers are highly sensitive to insecticides.

Yellowish Elongate Chefer (Heptophylla Picea)

Univoltine beetle. Larvae devour tea roots, which causes weak growth of the 1st flush. Most males have no muscle for flying.



DISEASE

Colletotricum Theae-Sinensis - Anthracnose

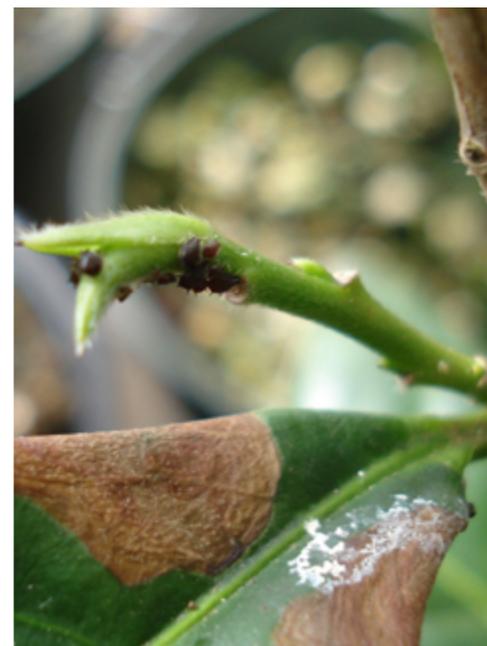
It is one of the most critical diseases in Japan that arrives between May and October.

Pestalotiopsis Longiseta - Gray blight

Fungi that invade a plant through cuts in young leaves or stems. The plucking machine causes cuts or wounded leaves, which invite more infection.

Pseudomonas syringae - Bacterial shoot blight

This disease damages leave and stem in autumn and early spring when tea plants are somewhat dormant. Severe damage is seen mostly in young tea plant fields and windy fields.



ORGANIC TEA FARM

Some animals are the natural predators for insects that damage tea plants, avoiding pesticides. **Lizards, spiders, lizards, mantis, and ladybugs** are a natural predator of insects, and they are required for the organic tea farm. When farmers want to shift from a non-organic tea farm to an Organic tea farm, the natural enemies begin increasing in the area about three years later.

Nibancha starts at the beginning of July. Farmers at non-organic tea farms feed chemical fertilisers just before the second harvest to facilitate the second sprouts. However, organic tea trees **cannot contain chemical fertilisers**. So, the second sprouts grow much slower.

Weeds grow nearby at organic tea farms in the summer season. Farmers must pull up the weeds every day. It is the most laborious work at an organic tea farm.

- **The Struggle with Weeds**

Uji area in summer season is humid and hot. These weather conditions, along with the rich fertiliser fed to the tea plants, create **favourable conditions** for the tea trees but weeds too. Most weeding work is done not by a machine but by the hands of farmers.

Autumn

Autumn is a decisive season for tea farmers. Tea trees grow best in autumn, and farmers **enrich the soil** in late summer. This work helps new root growth production in tea plants. They adjust soil pH to the proper acid

levels, aerate the soil by deep mechanical tillage.

- **Adjusting Soil pH and Aeration**

Japanese soil is naturally acidic and fertilising helps it. Tea plants are acid soil absorbing. It is essential to adjust the soil acidity changing the pH. To change the acidity, farmers spread **lime among tea trees**. Deep tillage aerates the ground to promote a new environment for new stronger roots and allows air, water, and nutrients to reach the fresh roots. When the soil is **treated and aerated**, the tea tree roots multiply. It is necessary to care and feed the tea plantation during the autumn season because it ensures a good harvest.

- **Fertilising in autumn**

Roots grow best in autumn, so farmers fertilise during the autumn season. Usually, they use eight to fifteen varieties of fertiliser about ten times per year. Most farmers feed mainly (30%- 40% of the annual amount) in the autumn so that **the fertiliser can slowly enrich the soil over six months**.

Ichibancha, the first harvest of tea, is highest in quality because it fully absorbs the nutrient of the fertiliser which was applied in autumn.

The fertiliser is constituted by cotton husks, rapeseed, fish, calcium minerals, and other natural nutrients.

- **Fertilising at Organic Tea Farm**

An Organic certification organisation must certify all fertiliser for Organic tea farms. Of course, chemical fertilisers or genetically

modified fertilisers are not allowed. Even the components and the production processes are examined to receive **Organic certification** from the Organic certification organisation.

- **Fertilising at Gyokuro and Matcha Tea Farm**

Tea plants for Gyokuro and Matcha are fertilised three times as sencha plants, to create the characteristic deep sweet taste.

- **Pruning**

Tea trees are pruned from October to November to prepare for next year's harvest. The leaves collected during the pruning are called **Bancha** (Houjicha), and they are fully inundated with sunlight so that Autumn Bancha contains many catechins.

Farmers prune to prevent to mix new sprouts with old leaves during the harvest. If farmers prune too early, tea trees will push out new shoots that will be damaged by the cold winter. If farmers prune too late, tea trees push out new sprouts late in the next spring. Consequently, farmers carefully schedule the time for tea tree pruning.

- **Tea plants flowers**

The flowers of tea plants bloom at the end of autumn. The flower colour is white and yellow. A Japanese saying says that when the flowers of tea plants bloom well in the autumn, the next winter comes with much snow.



Winter

During winter season farmer have to protect tea plants from the cold. There are three methods for protection: **covering method**, air stirring method (**anti-frost fan**) and freezing method (**sprinkler**).

- **Preparing for Winter**

To maintain the tea trees warm in the winter season, farmers **cover the ground** around the tea plants with dried grass, fallen leaves, straw. They help to keep a warm temperature and the right humidity in the soil around the roots. They also help to keep moisture in the ground and become good fertiliser. Young tea trees around zero to five years old have specially cared because they should be protected well from cold and dry weather. Furthermore, some fans are widespread in the fields. These **fans**, which are put in 6-8 m altitudes, **prevent frosting** by blowing **warm air** to the tea field. Sprinklers sometimes are used for irrigation and spraying of agricultural chemicals and the protection of the frost.

Tea Trees in Winter

During cold winter months, tea trees are dormant as though they are hibernating. At that time, **tea trees store nutrition** in order to sprout vigorously in the spring.

Snowy Day

In the Uji region, there are some snowy days in winter, but the snow does not usually accumulate. In the sporadic case that snow ac-

cumulates, tea trees for hand-picked tea could be **damaged under the weight of the snow**. In this case, the farmer must meticulously brush the snow from each tea tree. The weight of snow does not damage tea trees trimmed by machine because of the branch development.

Winter Tea Farm Work

In the winter season, the roots and leaves do not grow at all. Tea trees store nutritional elements from the fertiliser which they received last autumn, so they wait and make ready to thrive in the spring.

In the winter season, the main work for farmers is the **preparation of organic fertiliser** or preparing the ground for a new tea farm. They also can take care of other projects they could not do in different months of the year.



VINEYARD

The plantation of grape-bearing vines is grown mainly for winemaking, but also raisins, table grapes and non-alcoholic grape juice. So, the vineyard is the system for growing grapes, and often it **characterised the terroir** (See paragraph 2.2.2).

The shape of breeding is an expression of the enological history of a territory and the way how the winemakers have shaped the vine to make them produce better in that specific environment according to their needs. Italian viticulture is characterised by a **remarkable variety of pedoclimatic environments**, vines, grafts and local traditions that have contributed to the spread of numerous systems of breeding and pruning. The central systems are Alberate, Alberello, Guyot, Capovolto o alla cappuccina, Cordone speronato, Sylvoz,

Casarsa, Geneva Double Curtain (GDC), Cortina semplice, Pergola trentina, Tendone, Ray System or Bellussi. The method used by most farmers of the **Monferrato area is the Guyot**.

THE GUYOT PLANT - SYSTEM

Guyot aims to obtain the **fruit-bearing head**, from which the fruiting branches will develop, and the spur, from which two or three branches will be selected a new head after the pruning. After the fruiting of September-October, the complete fall of the leaves is expected; therefore, in mid-winter, pruning begins, which can be divided into three phases which by convention are called:

Past: what has been left on the plant in the past year.

Present: the set of vegetation on which

pruning will be carried out.

Future: that is, what, in the current conditions, we intend to leave for the coming year.

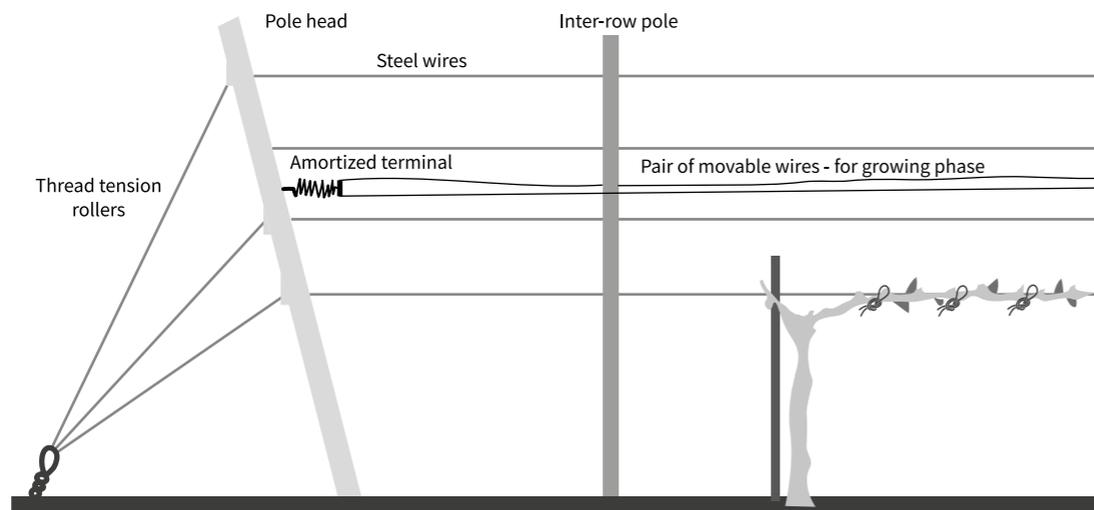
In this method of breeding, farmers tend to eliminate all vegetation except for a one-year-old branch (fruit-bearing) and a small spur, that is, a portion of the small-sized branch, bearing two or three buds. Guyot is suitable for **highly productive vines** that bear fruit mainly on the shoots emitted by the intermediate buds of the fruit-bearing head: in these vines, short pruning ("spur") would not guarantee adequate production due to the low productivity of the basal buds. The number of buds making up the Guyot fruit head varies according to the environmental conditions (soil fertility and irrigation availability) and the production potential of the grape.

Winter

- **Dormancy period**

Dormancy is the grapevine growth cycle phase that occurs after that the plant drops its leaves. It lasts **from the late winter to early spring**. This phase helps vines to tolerate cold winter temperatures and has a fundamental impact on grapevine flowering and vegetative growth in spring. During the dormant period, vines need to be exposed to enough hours of cold temperature for the bud break and average spring growth to occur during the next season. During this phase, little activities occur to maintain **essential metabolic functions**. Grapevine survives thanks to carbo-

hydrates reserves stored during the growing season, mostly as **starch**, in permanent wood structures, such as roots and trunks.



- **Pruning – The canopy management**

When we talk about vine's pruning, we refer to **two different periods** for two different pruning techniques: green pruning and dry pruning, which correspond, respectively, to **winter pruning** and **summer pruning** of the vineyard.

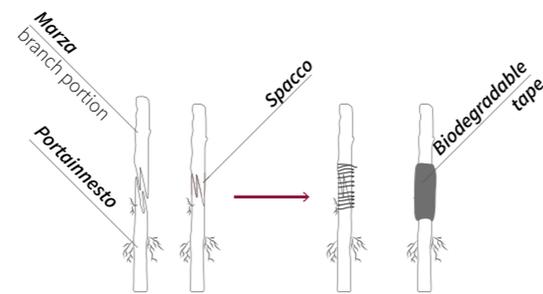
- **Dry pruning**

Before starting the dry pruning, it is necessary to **wait for the leaves to fall** to ensure the maximum accumulation of reserve nutrients in the shoots, in the stem and the roots. This pruning is called "production pruning", and it is realised through three steps: the so-called "**cut of the past**" allows to remove the fruit-bearing part that produced the previous year, the "**cut of the present**" in which one of the two branches that have developed is chosen from the spur, and finally the "**cut of the future**" which consists in cutting the lower spur into two gems from which will develop the branches necessary to renew fu-

ture production. The poles or guardians of the vineyard have a height of 1,80 and support three wires, of which the first support the fruit-bearing head, while the others at a distance of 40 and 100 cm from the first, serve to bind and support the vegetation of the year.

- **New inserts**

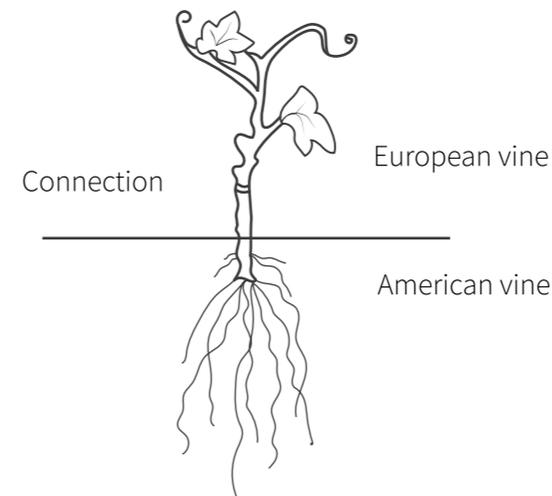
At the end of the winter season, it is possible to insert a plant in another, that consists in **joining the part that has roots in the soil** (called rootstock), **with a branch or a shoot of a different plant called *nesto* or *marza***.



It is a well-established practice to differentiate the properties of the root apparatus from the

aerial properties of a plant, in particular for the vine.

The **cuttings** (innesti) are small vines grafted onto American rootstocks. The American rootstocks are resistant to phylloxera (an insect belonging to the order of the Rincoti) contrary to European vines, for this reason in Piedmont region, farmers decide to insert American rootstocks for their vine.



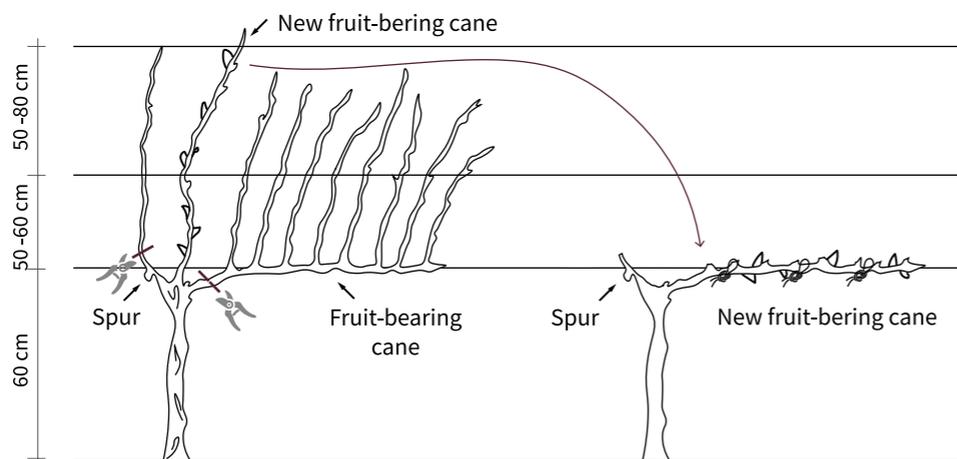
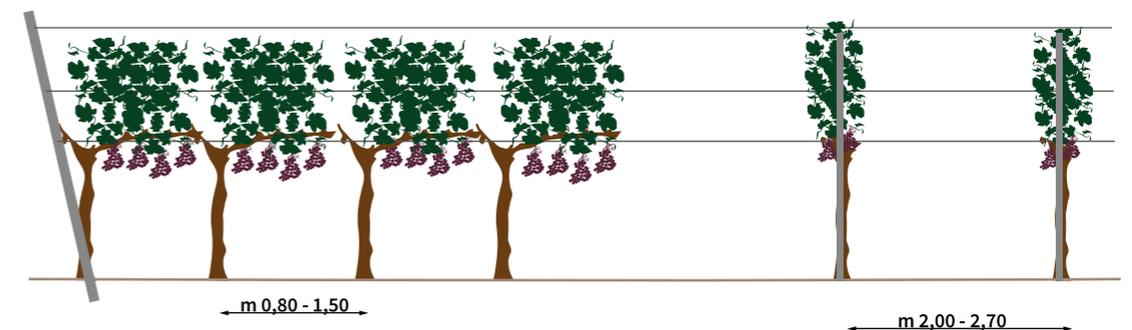
The following list showed several kinds of inserting, and it highlights the most common cuttings in Piedmont:

Kober 5BB: popular rootstock, resistant to drought and suitable for clayey soils.

1103P: it is a rootstock suitable for soils with little fertility, suitable for calcareous and clayey soils

420A: very resistant, used in case of dense planting patterns – Berlandieri x riparia

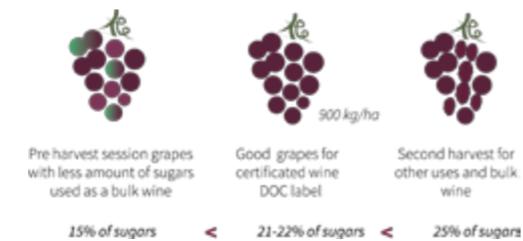
41B: vigorous, useful in cases of sensitivity to chlorosis and calcareous soils; fears cold soils.



- **Fertilisation**

After the pruning phase, there is another crucial moment for the vine growing, which is the fertilisation of the plant, which takes place during wintertime. Generally, fertilisation is divided into three main kinds of practice:

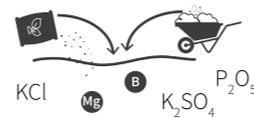
1. **Essential fertilisation:** to be carried out before the plant is planted, during the soil processing phase;
2. **Breeding fertilisation:** to be repeated every year until the plant has reached full maturity, around the third year of life;
3. **Production fertilisation:** which is practised on adult and productive plants.



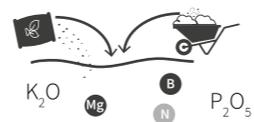
The **first fertiliser** to be used is mature, to which phosphorus and potassium should be added, as well as calcium and magnesium if the soil is lacking. In general, the contribution of elements to be made in the necessary fertilisation per hectare are 500-800 quintals of manure; 200-1000 kg of potassium; 200-500 kg of phosphorus; 100-400 kg of magnesium; 10-25 kg of boron.

Then, **nitrogen is introduced**, which is not included in the bottom fertiliser since the plant does not have sufficient rooting, and the nitrogen should only be dispersed in the soil, without being absorbed. The amount of nitrogen is established based on certain factors, such as the vigour of the vine and the characteristics of the soil. However, the quantities are around 50 kg per hectare in the first year of breeding and 100 kg per hectare in the second year of breeding. About the timetable, the fertilisation should be done in autumn.

At the end of the harvest we must proceed both with the operations of cleaning the plant, then with a correct pruning, both with the arrangement of the land and the fertilisation of production of the vineyard. Production fertilisation takes place in three stages: the first two fertilisations during the vegetative phase



I. Basic fertilization: before the plantation of the vine



II. Breeding fertilization: every year until the plant has reached full maturity

III. Production fertilization: on adult and productive vines

- 3 steps**
- 2 fertilizations during growing season
 - 1 fertilization at the end of September

of the plant, the last at the end of September, including higher concentrations of phosphorus and potassium. In this case, establishing quantities is a little more complicated. We must study and take into account how many elements the plants use to be able to produce, checking the new data year after year. The vine is more in need of calcium and potassium than of nitrogen and phosphorus.

Spring

- **Bud break**

Grapes start its annual growth cycle in spring with bud break. Small **buds on the vine** begin to grow, and shoots grow from the buds, that is the small part of the vine that are between the vine's stem and the petiole (leaf stem). During dormancy period they turn brown until the spring when bud break, and the first sign of green in the vineyard emerges with a shape of little shoots. Sometimes if the vine had been pruned during the winter, **the vine could "bleeding"**. Vine bleeds when the soil begins to get warm: the osmotic forces push water, containing hormones, organic acids, minerals and sugars, up from the roots. It is all expelled from the cuts leftover from pruning the vine. One vine can "bleed" up to 5 litres of water.

- **Flowering**

The flowering begins 40–80 days after bud break. **Small flower groups** appear on the tops of the young shoots. Grapevine flowering

starts when the daily temperatures are between 15–20 °C (around May in the Piedmont Region). The flowers begin to grow in size with single flowers becoming visible. It is during this period that the **pollination and fertilisation** of the grapevine take place. The result is a grape berry containing 1-4 seeds. The only vis-



ible part at the beginning of flowering is called **calyptra**. After the calyptra is open, it liberates the pollen from the anthers of the stamen. The most peculiar aspects of the grapevine are that wind and insects generally play only a small as pollinators because the process is mostly self-contained within the vine.

During the process of fertilisation, the **flower begins to transform into a grape berry**, encapsulating the seed.

- **Green pruning during springtime**

Green pruning is given in two different periods of the year. The green pruning must be done in the **summer** (summer pruning), but there is also a **spring pruning** better-called shoot pruning.

- **Spollonatura e Scacchiatura - shoot**



- **Pruning**

With the *spollonatura*, the sprouts are removed from the root system and the pedicel (those that originate along the stem, the so-called suckers/polloni). The suckers are shoots that do not carry grapes, which take away energies from the productive ones and which can **reduce the aeration** of the bunches; their timely elimination allows an adequate development of the plant according to the desired training system. The countryman takes off also the leaves of the branches called *femminelle* which cover the grapes berries, in order to let the fruits free. These *femminelle* are branches without grapes. The foliage must be left on the top the vine, for creating a roof anti-hail.



With the *scacchiatura*, the farmers go to **eliminate the surplus shoots** that have sprung up on the secondary and crown buds. Specifically, the sprouting eliminates the wounded, weak or sterile shoots. It is an essential operation for the vine to make the plant breathe more, hampered by the rich vegetation that prevents the passage of both air and light.

Early summer

- **Fruit set**

After the flowering, there is the stage of fruit set. Indeed, the **flower begins to develop a seed and grape berry to protect the seed** (during June). This stage is crucial for wine production since it defines the potential crop yield. Not every flower on the vine become a fruit. **Only 30% to 60% of the total flowers are fertilised**. Climate conditions and the health of the plant play a fundamental role; low humidity, high temperatures can reduce the number of flowers that get pollinated. The **"Coulure"** happens when there is an inequality of carbohydrate levels in the vine tissues, and some berries fail to set or fall off the bunch. On one grape there may be berries of various dimensions which can create problems during wine-making. Indeed, there are have different "skin to pulp" ratio among the grapes. Coulure can be caused by disease, such as fanleaf, or by a boron deficiency in the vine.



- **Veraison and fruit maturation - In-vaiaura**

After the fruit set, the berries are green and hard. They have **little sugar content** and high content of organic acids. Berries begin to grow to half their final size when they start the phase of veraison. It indicates the beginning of the ripening process and usually takes place around 40–50 days after fruit set

During this stage, the **colours of the grape take form red/black or yellow/green**, depending on the varieties. The anthocyanins replace the chlorophyll in the berry skin for the red wine; carotenoids replace chlorophyll in the berry skin for white wine grapes.

Then, during the process called engustment, the **berries of the grape start to soften** because they increase the sugars content. After six days of the start of veraison, the berries begin to grow as they accumulate glucose and fructose, and acids begin to decrease.

- **Green pruning-(Cimatura)**

Summer pruning includes the so-called cutting of the branches. The trimming of the branches is necessary to **help the formation of new leaves**, useful for the production of the bunches. When we talk about green pruning and cutting the branches, it is necessary to finish the intervention by the end of June to allow the vine to **develop the new shoots** (the females) in the time necessary to allow the grapes to enlarge and ripen.

Shoot Thinning :

It removes water shoots developed from buds at the base of spur or old wood. **These buds are never fruitful** but count for up to 50% of total shoots produced and cause shading. Spring season is the most suitable time to do it, because shoots are young, about 6 inches long.

Shoot Trimming:

It is also called summer pruning, which is to **cut offshoot tips**. Shoots are generally trimmed to 10-20 nodes in length, depending on the training system and varieties.

Leaf Removal:

To remove leaves from the cluster zone. Leaf removal can open up the canopy and increase the exposure of clusters to sunlight and wind. The disease incidence (Botrytis rot) to bunches will be reduced, and fruit quality of berries will be improved in return. Usually, **only a couple of leaves will be removed**. It is a very cost-effective operation, especially for wine-making. The time to do it is **two weeks before veraison**. Also, farmers can remove old, yellow leaves inside the canopy. One thing to be careful of leaf removal is sunburn of clusters.

Cluster Thinning:

The removal of flower clusters. Most cultivars will have two clusters per shoot. Some cultivars have three clusters/shoot. Cluster thinning is to remove the third cluster or even the second cluster; it ripens berries early and it also **improves fruit quality**.

- **Harvest**

In the vineyard, the most important event is the harvest session in which the cluster of grapes are removed from the plant and transported to the winery to begin the winemaking process. This event takes place generally **between August and October**. The harvesting time depends on several factors, but mainly from the determination of ripeness of the grapes. When the grape is ready, **it starts to lose sugars and the pH increase as acids** (such as malic acid) decrease.

Winemakers and enologists use the sugar and acid levels of the grape as a guide in determining ripeness. Modern workers use a tool, the **refractometer**, to measure the sugar levels and the titration tests to determine the titratable acidity within the grape. Tannins and other phenolics develop, which can affect the flavours and aromas of the wine. The treatment of the disease and the bad weather can affect the timetable of the grape harvest.



Autumn and springtime

- **Use of pesticides**

It is also essential to fight against insects and diseases which can be produced through the vineyards. One of the standard products used in Italy is the **verderame** which should be 28 kg of copper per hectare over seven years (average 4 kg/ha year) the maximum limit of copper allowed for organic cultivation. **Copper**, is the active ingredient used against vine blight. Within organic and **biodynamic viticulture**, copper is still today the only genuinely useful active ingredient against downy mildew, which is often combined with infusions or macerated wild herbs or biodynamic preparations whose function is to enhance the effect of copper and limit its dosage.

- **Fertilisation**

Autumn fertilisation takes place after harvest session and before the winter rest. It is better to use **organic and non-mineral fertilisers** that would run off over time. It supplies substances during the winter season.

- **Post-harvest**

After the harvest session, the vines continue the process of photosynthesis: the **plant accumulates carbohydrate in roots** and trunks until the appropriate level of reserves has been stored. Then, the chlorophyll in the leaves begin to break down, and **the leaves change colour** from green to yellow. After the first frost, the leaves begin to fall as the vine starts to enter its winter dormancy period.



DESEASE

Mildew

Downy mildew is one of the most severe diseases of the vine and is caused by the fungus *Plasmopara viticola* which penetrates plant cells to remove nourishment from the plant. The downy mildew of the vine is easily recognisable by the symptoms: classic button or yellow spot on the leaves of the plant, the possible presence of white mould on the lower side of the same, dried berries or in the shape of "s" and brown. The berries assume this conformation because the plant, being deprived of its nourishing substances, is not able to proceed to the complete maturation of the fruits, which are blocked in the growth going in necrosis. The same arrest and desiccation can also occur in inflorescences.

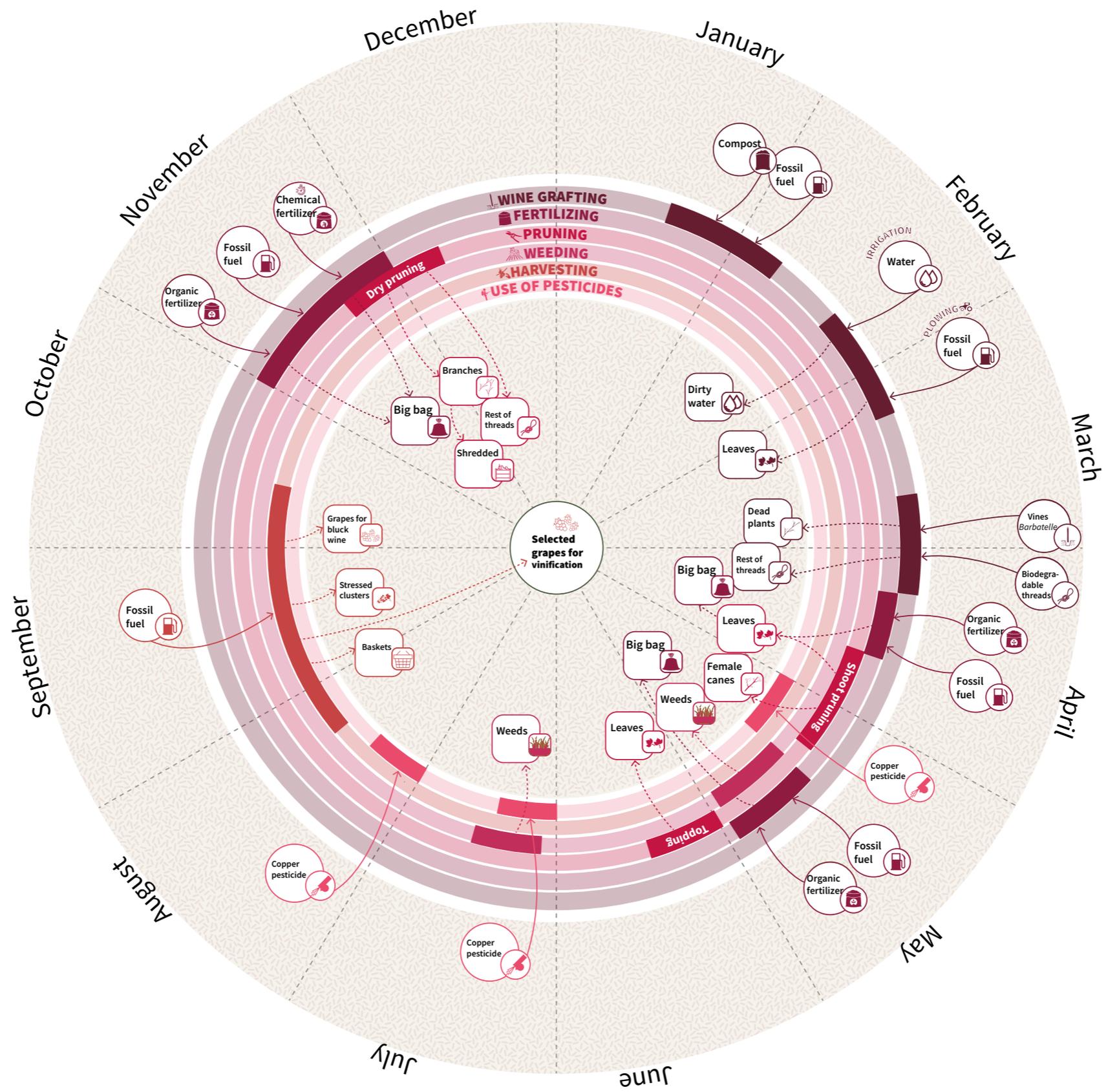
Oidio - mal bianco della vite

Oidium or grapevine of the vine (*Uncinula necator*): it is a fungus that affects the leaves, the shoots, the branches and the bunches; favoured by high humidity, optimal temperatures of 25-26 ° C and absence of wetting. On the leaves we see white-greyish patches, while after the setting on the berries there is the white mycelium of the pathogen which causes necrosis in the berry, which can be split, favouring other diseases; moreover, if it affects the young bunches during the pre-flowering phase, it causes the flowers to flow and the whole bunch to necrosis.

Mal dell'esca - apoplessia

It is a disease caused by a series of fungi that develop on the wood; favoured by the presence of lesions and infected tissues, from which it infects healthy ones. On the leaves, between the ribs, there is a marked yellowish chlorosis in the centre of which there are reddish necrotic spots, while attacks on shoots and wood determine a disintegration of the woody tissues that necrotise becoming brown, to then take on a light colour and a spongy consistency and friable (carious fabrics). The plant can die a few years after the establishment of these pathogens. It is one of the most urgent phytosanitary fungal problems to be solved. It occurs more during the moment of pruning as with the incisions that are made to the various branches; the plants are more vulnerable to being attacked by fungi





6.1.2 Raw materials: biological aspects

CAMELIA SINENSIS

There are mostly *four types of tea drink*, categorised by the processing method: green tea, oolong tea, black tea and white tea. They come from the same kind of plant called Camellia Sinensis but are processed differently to achieve different levels of oxidation.



Camellia is a *flowering plant* that belongs to the family *Theaceae*. Camellia grows especially in eastern and southern Asia. There are 100–300 reported species, and around 3,000 hybrids.

As we can read from the Wikipedia website: "Camellias are evergreen shrubs or small trees up to 20 m (66 ft) tall. Their leaves are alternately arranged, simple, thick, serrated, and usually glossy. Their flowers are typically large and conspicuous, one to 12 cm in diameter, with five to nine petals in naturally occurring species of camellias."

The Camellia flowers throughout the species are characterised by a *compact bouquet* of distinct yellow stamens, often contrasting with the colour of the petals.



The "*fruit*" of the tea plants is a *dry capsule*, sometimes subdivided in up to five parts, each of them containing up to eight seeds.

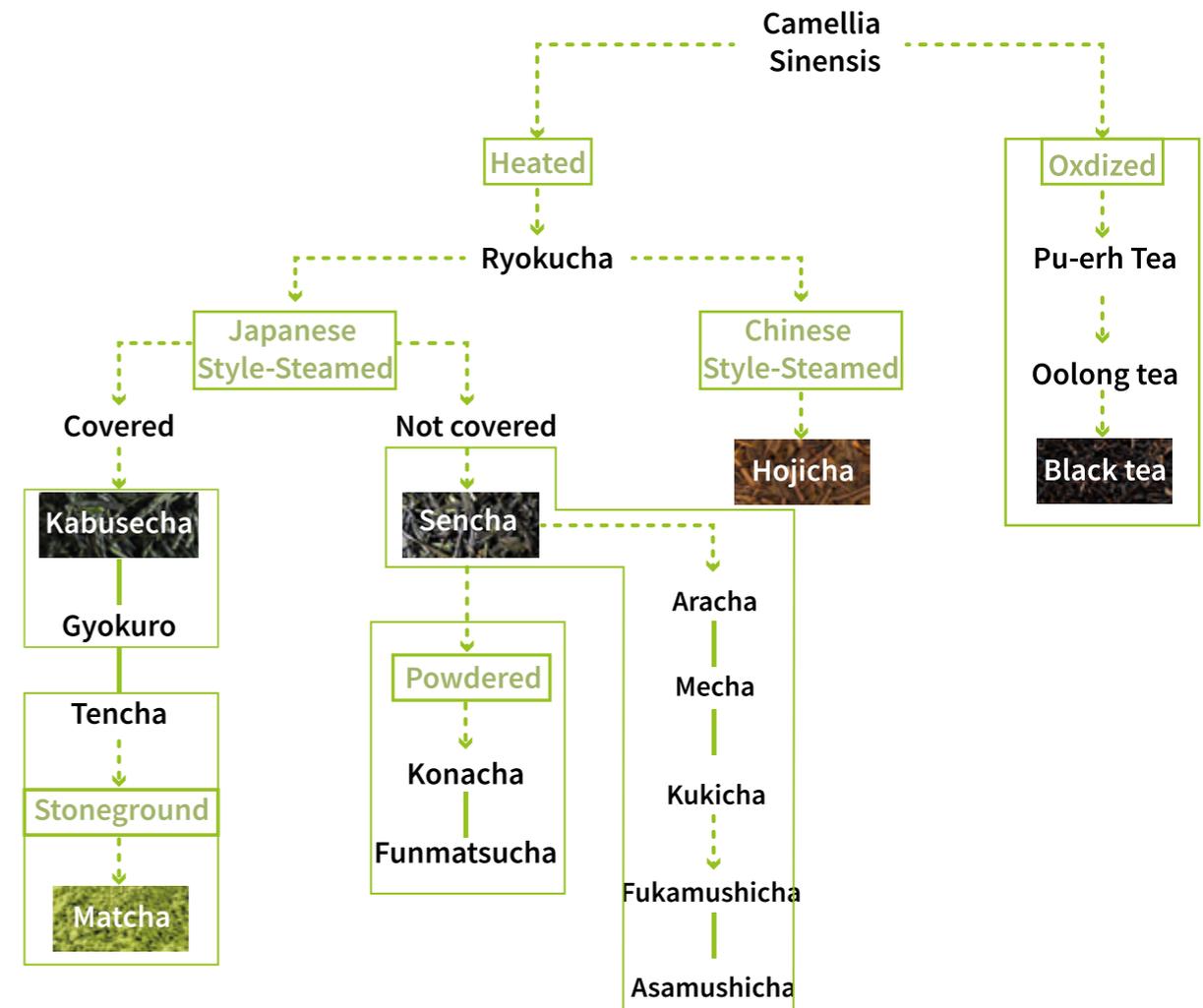
The various varieties of camellia plants are usually well-adapted to acid soils rich in humus. Most species of camellias also need a large amount of water, both from rainfall or from irrigation, and the plants will not tolerate aridities.

Camellia has a rapid growth rate, and they will grow about 30 cm per year until mature.

LEAVES

The green tea drink comes from the *brewing of the leaves of Camellia*. There are many varieties of green tea, that are shown in the following page.

JAPANESE GREEN TEA TYPOLOGIES

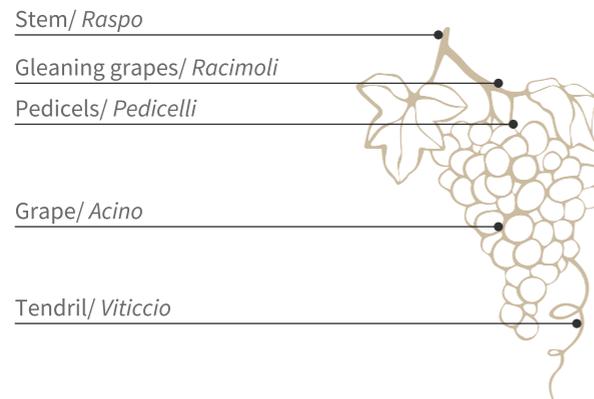


VITIS VINIFERA

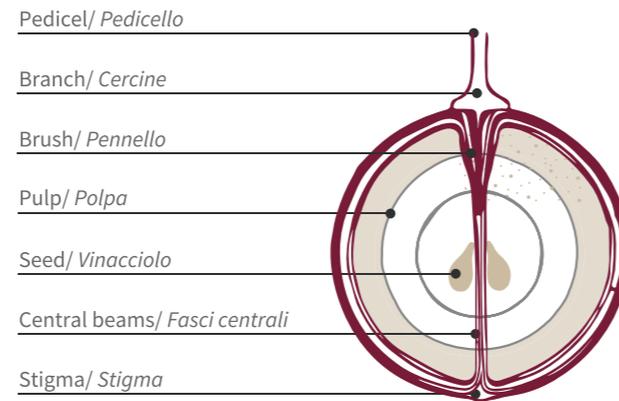
The most cultivated grapevines in the world are the *Vitis vinifera*. It is a hermaphroditic climbing shrub, with both male stamens and female ovaries. Farmers prefer hermaphroditic plant because each vine is more likely to self-pollinate and produce fruit. The family of the *Vitis vinifera* species is the **Vitaceae**. It is a plant with a growth habit generally determined by the farming system; the plant is a kind of deciduous plant. The natural pattern is irregular, with sparse branching but very developed in length, even several meters.

The **stem is twisted and irregular**, of varying length. The colour, greyish in the branches of a year, turns brown with the development of the rhytidome. The rootstock strictly conditions the vigour of the stem of the branches. One of the peculiar aspects related to the viticulture is that the vine bears fruit grow exclusively on the branches of the year, preferably issued from the buds of the previous year.

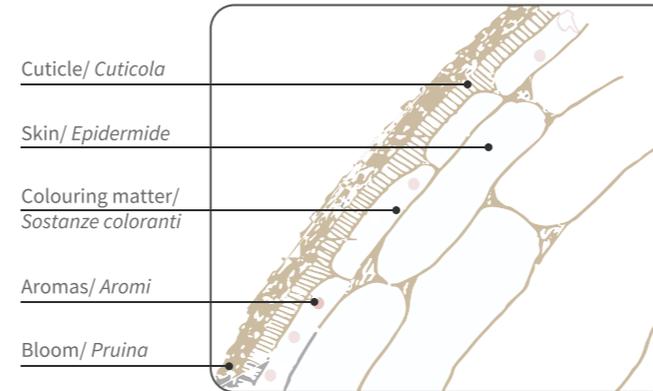
THE GRAPES



The grapes are classified as a berry. We can find the berries on the vine organised through systems known as **clusters**. According to what Wikipedia says, this grape clusters can vary in compactness which can result in extended groups (resulting in the grapes spreading out) or short clusters (resulting in grapes packed together). In some grape species, clusters ripen together which allow them to be harvested together. For others, grapes may grow individually inside a bunch. Each berry contains a pedicel which connects to the rachis. The rachis allows the grapes to receive the water and nutrients. Most of the plants will produce around 100 to 200 grapes.



One particular aspect of grape is that **the skin accounts for 5 to 20% of the total weight of the grape**, depending on the variety. The grape skin develops the majority of the aromatic substances and tannin. These factors become essential in winemaking for methods



that include colour extraction or aroma dissolution. The skin contains the high content of tannin, and small percentages can be found in the grape during all of its developmental stages. However, the most important role of the tannin is during the grape's ripening stage as its function is to formulate colour and body shape.

6.2 From the raw materials to final products: linear process analysis

This section of the research examines two case studies of productive realities present within the areas of intervention: in Wazuka area (Japan) and Cella Monte (Italy). The two realities chosen have many standard features at the level of company structure and degree of innovation towards the territory in which they are located. These are small companies that produce according to high-quality production standards aimed at enhancing the value of the raw material.

6.2.1 The companies: d:matcha, Cinque Quinti

D:MATCHA



Uji-cha has the highest quality and trademark recognition for green tea in Japan, and it contains different kind of tea like Sencha, Matcha, Gyokuro, Kabusecha as we showed in the previous chapter. Wazuka-cho produced more than 40% of the total amount of Uji-cha. For that reason, when people drink Uji-cha, they often drink Uji-cha but produced in Wazuka-cho.

The company that we take into account as a case study for the thesis is D:Matcha, which is in Wazuka-cho; it is a small productive reality-based in Wazuka town. They produce tea leaves in the entire area of Wazuka-cho of Sagara-gun, which is located in the southern part of Kyoto. D:matcha story starts with a vision, including the appreciation for the unique quality of Japanese tea and the desire to revitalise an industry threatened by Japan's ageing population. With their feeling for authenticity and innovation, they offer the highest quality Japanese green tea selections to current and future generations. Dedicated to developing a connection during each step of the tea production process. They cultivate green tea in partnership with Kyoto-based family farms with respect for their environment and a commitment towards products containing no artificial flavours or ingredients.

D:matcha pledges to produce healthy, delicious, multi-dimensional teas to share with the consumer an exceptional experience based on years of tradition combined with modern innovation. One of the most exciting aspects of D:matcha is that they purchase tea leaves

directly from specific farmers who have cultivated on their farms for generations and have the best skills in Japan to grow green tea. The company staff also works full time with these farmers in Wazuka to help produce the highest quality green tea. They produce and sell green tea leaves themselves, but they choose the highest quality leaves, which adhere to our high and stringent criteria by watching and tasting in the farms. They follow the rules of the Japanese Ministry of Agriculture Forestry and Fishery to ensure the highest standard and safety. These spirit and dedication create their unique Japanese green tea.

Two aspects that characterise the reality of D: Matcha are the widespread presence and the capillarity with which they are inserted on most of the territory between Wazuka and Kyoto. In particular, they own tea plantations from north to south of the Wazuka area as we can see in the following diagram. They also do not have a processing plant and therefore outsource their production by collaborating with highly trusted local companies. Two well-known contract manufacturing plants are located in the cities of Wazuka and Shirasu.



CINQUE QUINTI



Cinque Quinti cellar was born in 2016, and the first red wine was produced with grapes from 2015 harvest. A down-to-earth table wine characterised by an intense red hue and a rich and full-bodied flavour.

The project of their winery arose from the desire of 5 siblings to continue an old family-run activity, giving it an innovative and fresh touch. The name comes precisely from this: five siblings, each of which with different ideas and skills, will give their contribution to develop the activity and to reach the goal.

From 2008 the land properties of Arditì family was expanded by ten times. One-hundred hectares, half of which are vineyards. Barbera, Cortese, Grignolino, Pinot Nero, Arneis, Bonarda, Nebbiolo, Cabernet, Sauvignon, Chardonnay, Syrah, Freisa, Dolcetto. A real explosion of scents, shades and flavours. The agricultural name “Fratelli Arditì” - not to be confused with “Arditi Fratelli” who is managing the “Cantina Sociale del Monferrato” – finds its roots in the art of tradition and the real values which permeates the atmosphere in Cella Monte. Until 2015 the activity was fo-

cused on the sale of the raw material to private producers or wine cooperatives, starting from 2016, the five siblings started to produce wine by their own.



As it can be seen from their website, in 2017 Cinque Quinti launch their first label which name was *Vino Rosso*. It was a selection of 750 bottles, then, in 2018 the numbers doubled. From 750 bottles, 100% Barbera made in steel, the number comes to 1300. After that, they introduced their first white wine called *Dedalo*. It is a selection of 100% Arneis grapes - Monferrato DOC Bianco for about 1000 bottles. 2019 sees the introduction of two new labels: *Roverò* - 100% Barbera aged in tonneau and *Mariulin* - 100% Chardonnay, Metodo Martinotti. Also, quantities will increase, and in 2020 the total number of bottles will reach 11.000. (note) They work to improve the quality of their wines and to strengthen our relationship with their customers by organising each year events and wine tastings at their headquarter.

As previously said for D: matcha, the CinqueQuinti are also characterised by aspects that we can define similar to the Japanese reality analysed. The hectares they have

are spread around the municipality of Cella Monte: in Cella Monte itself, in Rosignano Monferrato, in Ozzano, Olivola and Ottiglio. While as regards the production plants, they also have companies that are located in Canelli, Rosignano Monferrato, Uviglie and Casale produce for third parties.

6.2.2 Current industrial process: steps, characteristics, input and output

GREEN TEA TRANSFORMATION PROCESS

"Aracha" Processing

Aracha (荒茶), which means unrefined or crude tea, is a type of green tea produced in Japan. Unlike most other teas, the production of aracha green tea uses the entire leaf, including the blade, stem, and broken particles. It gives to the tea a deep green colour and a strong taste even if variations are mostly affected by the cultivation and production processes.

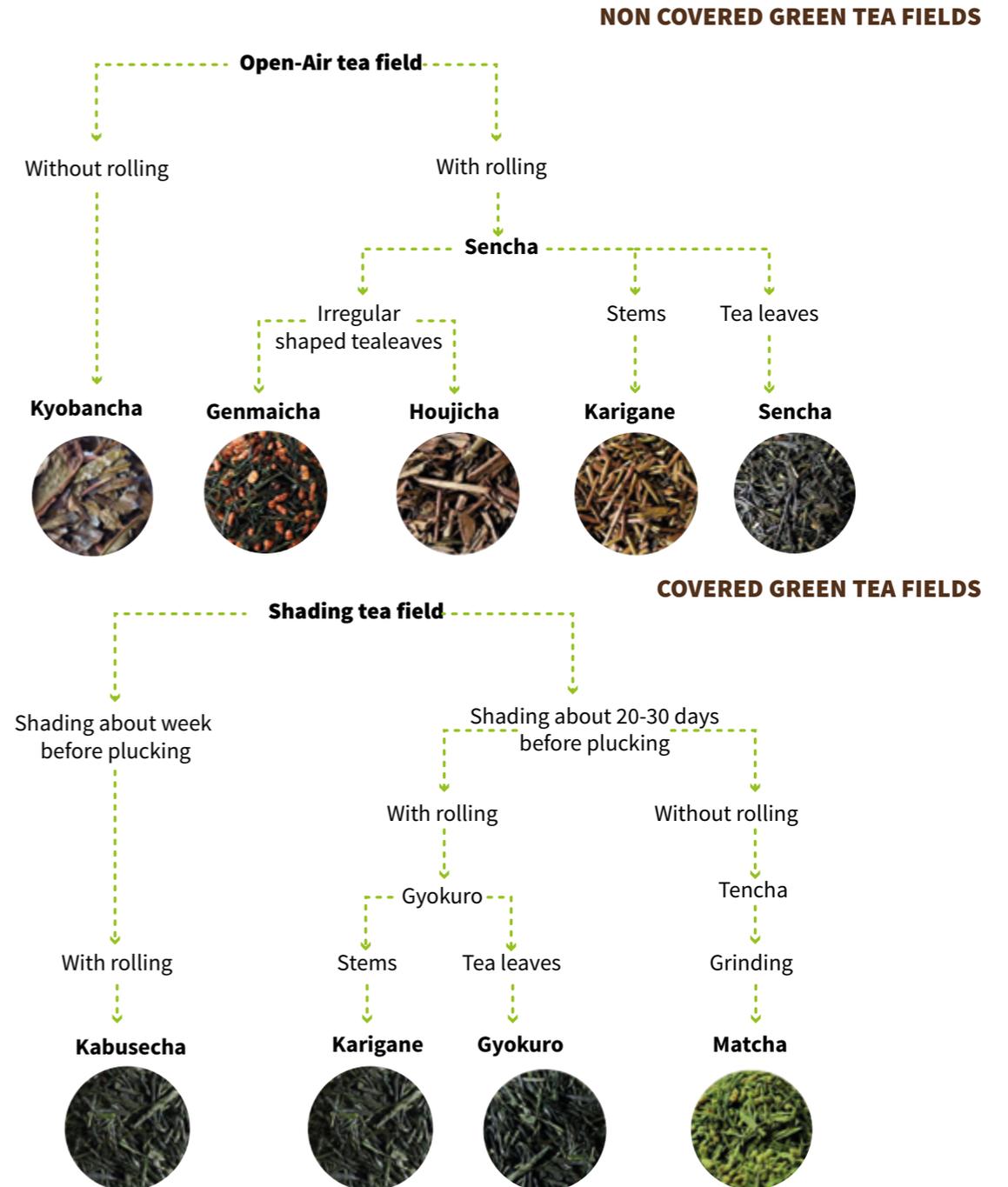
"Aracha" Processing - Gyokuro and Sencha

Following the harvest, the fresh tea leaves are processed on the same day by the tea farm. The processing steps are: steaming, kneading, shaping, and drying. It usually takes about four hours to pass through the entire transformation process. The name of processed tea leaves is "Aracha". One of the particular aspects of the final tea leaves produced is that the weight is approximately one-fifth of the fresh tea leaves. It is because the moisture content of fresh tea leaves is 80% while it is only 5% in Aracha.

Sohen Nagatani created this processing method in 1738 and mechanised years later. The kneading process breaks the external part of the cell, and the beneficial nutrients can easily

infuse into the water.

The sencha leaves can be processed with two different methods: asamushi and fukamushi. The timing of the steaming part is different. Asamushi sencha is "light-steamed" (thirty seconds to one minute), while Fukamushi, or "deep-steamed," is steamed for a longer time (one-two minutes). After a deep steaming, the leaves break apart easily. Nevertheless, it has a fuller taste and can be brewed in hot water, thus quicker. Asamushi sencha is the most commonly used. Fukamushi sencha was introduced around 40 years ago.



1) Withering

Tea leaves begin to wilt soon after picking, with a gradual onset of enzymatic oxidation, they must be dried to prevent fermentation, that stops any enzyme activity that causes oxidation.

The withering process **removes the excess water** from the leaves and allows a very slight amount of oxidation. The tea leaves can be put **under the sun** or left in a **cold breezy room** to dry the leaves, that sometimes lose more than a quarter of their weight in water during withering. The process is also essential in developing the **breakdown of leaf proteins into free amino acids**. It increases the availability of freed caffeine, both of which change the taste of the tea. In the case of Japanese green tea, this is a speedy process, because the **leaves must not oxidise**. After that, tea leaves are subjected to a treatment to avoid oxidation, called fixing.

After that, tea leaves are subjected to a treatment to avoid oxidation, called fixing.



2) Fixing or steaming:

The oxidation is the chemical reactions that result in the browning of leaves and the pro-

duction of flavour and aroma mixtures in teas. **Oxidation** is both stopped or deliberately started, **controlled and then stopped**, depending on the type of tea, Much of the oxidation process involves **polyphenols**, particularly the enzymes polyphenol oxidase and peroxidase. The reaction begins when the cells are damaged, and the components inside the mix are exposed to oxygen. This reaction transforms the polyphenols known as catechins into flavonoids called theaflavins and thearubigins.



The first one, the theaflavins, provide tea with its briskness and fresh taste as well as its yellow colour, and thearubigins provide tea with depth, body and its reddish colour. Chlorophylls are transformed in pheophorbides and pheophytins (that lend to the black/brown colour of dry oxidised tea leaves) during oxidation, and lipids, amino acids and carotenoids degrade to produce some of the tea's flavour and aroma compounds. Tea producers use unique methods to initiate, halt (fix), or even prevent oxidation in order to produce different flavours in a finished tea.

The oxidation is controlled by **introducing warm, moist, oxygen-rich air**. The extent to which oxidation is allowed to occur has an astounding effect on the finished tea. Oxidation occurs best between 26–30°C and is slowed nearly to a halt at 60–65°C. When the tea producer wants to prevent oxidation, they heat the leaves, and this process is called fixing. The fixing process requires **precise control of temperature and duration of heating**. They have to be adjusted depending on the size and thickness of the leaves and their amount.

In the case of Japanese green tea, the **fixing process takes place through a lightly steaming**. The Steaming process is an essential part of the process because it is where the oxidation is stopped, and green tea is minimally oxidised. Besides ensuring that, tea becomes green, the intensity of the steaming also determines the aroma, colour of the liquid, the taste, and even the shape of the finished tea. The steaming process is critical and challenging, even if **it lasts just 30 to 60 seconds**. Indeed, if tea leaves are not steamed enough, the taste will not be good. Whole tea leaves must be uniformly steamed. Farmers manage the steaming temperature and time, considering the conditions of picked fresh tea leaves as thickness and softness). Usually, **the temperature is set around 95°C to 100°C** There are two types of steaming machines: the **steam drum**, where the tea leaves are shackled and steamed while the drum revolves, and the conveyor steaming machine, where the leaves are steamed while they move on the conveyor belt.

3) Four steps of rolling and airing

The next process is called **kneading**, and it is divided into three steps: rough kneading, bending, and middle kneading. During the **first rolling**, to get soft the tea leaves and lower the excess humidity caused by steaming, they are carefully rolled inside the rough rolling machine (Soju-ki 粗揉機). In this first rolling process, hot air is blown while the leaves roll **for 30-45 minutes at 90°C – 100°C**. The leaves are also thrown into the air at each cycle, which helps to reduce moisture. At the end of the steaming process, the dry basis moisture content (ratio of the weight of water divided by the weight of the tea leaves) is 380%. After the rough rolling, it lowers down to 100%. Stems and stalks are more laborious to dry than leaves. In the rolling and twisting machine (Junen-ki 揉捻機), the **uniform moisture content** is achieved. The tea leaves roll d for 15-20 minutes at room temperature, and the tea leaves start to get a better shape.



The tea leaves still have a high moisture content inside, and their shape is irregular. They must pass into the **middle rolling machine** (Chuju-ki 中揉機) **for 30-40 minutes at**

50°C-60°C. The middle rolling machine rolls the tea leaves as it rotates while applying heat. The pieces of tea leaves are also untwisted as a result. At the end of this process, **the moisture content of the tea leaves decreases to 30%.** Currently, another machine is used before the middle rolling machine: the secondary tea rolling dryer (中揉み機). It adds more efficiency and quality to the process.

The precise kneading machine (Seiju-ki 精揉機) gives the tea leaves the **familiar needle shape of sencha**, while also applying heat for **30-40 minutes at 80°C-90°C.** Tea leaves now are rolled tighter than before. At a later stage, the machine raises the rolling force. After the soft rolling, tea leaves have a moisture content of 13%, and they are shaped like a needle or bar.

Steamed tea leaves are kneaded for two hours or more. The process removes the moisture content from all tea leaves uniformly. Moreover, if kneaded too much, the colour of the tea leaves becomes whitish.



4) Final drying

Shaped tea leaves pass through the dryer (Hire 火入れ) for about one hour. Now, the moisture content decreases to 5% or 7%.

Completed the aracha process, the **wholesale merchant usually finishes the tea leaves.** The aracha tea is either sold directly to the wholesale merchant or bid on at the Kyoto Japan Agricultural Cooperative Association.



5) Preserving

Freshness is one of the most relevant qualities, so tea needs to be stored correctly to preserve freshness.

"Aracha" tea leaves, just after harvest, are brought to the factory. Then, they are vacuum packed in 20kg big bags and stored in a cold storage chamber. The temperature is kept at 0°C to 5°C during the year.

The tea leaves finished are repackaged into small size bags with nitrogen just before purchasing. The tea leaves remained are vacuum packed and stored in the cold storage chamber again.

One problem is that all "Aracha" tea leaves cannot be finished at one time, so more than half of the unfinished "Aracha" is vacuum packed and stored in the cold storage.

6) Finishing

Gyokuro and Sencha

Aracha tea leaves have finishing processes: sorting and drying.

During the first one, Aracha is sorted into standard tea leaves, non-standard tea leaves, stems, and veins. The stems and veins classified from high-grade teas are called Karigane, which is a good value and fair price. During the drying process, the moisture content decrease from 3% to 4%, while the in Aracha is 5 to 7%. The drying process brings out the taste and to permit the tea to keep in excellent condition long term.

Houjicha - Roasting

The first three steps of the processing of Houjicha leaves are the same as for Sencha: steaming, drying and crumpling, and shaping. Nevertheless, to make Houjicha, the tea goes through one particular additional step, the roasting. The roasting process creates the unique toasted nutty flavour of Houjicha.

Houjicha tea leaves grown in full sunlight so that it contains catechin. Furthermore, since Houjicha is pan-roasted, it is shallow in caffeine. Houjicha is commonly given to children and people who are sick because it is both nourishing and low in caffeine.

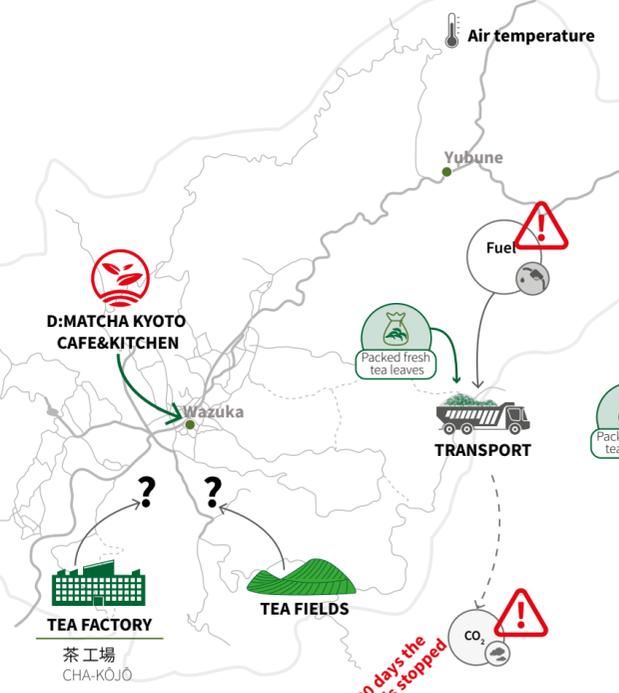


CURRENT TEA MAKING PROCESS (Sencha)

Asamushi method

d:matcha Kyoto - Wazuka

Case study



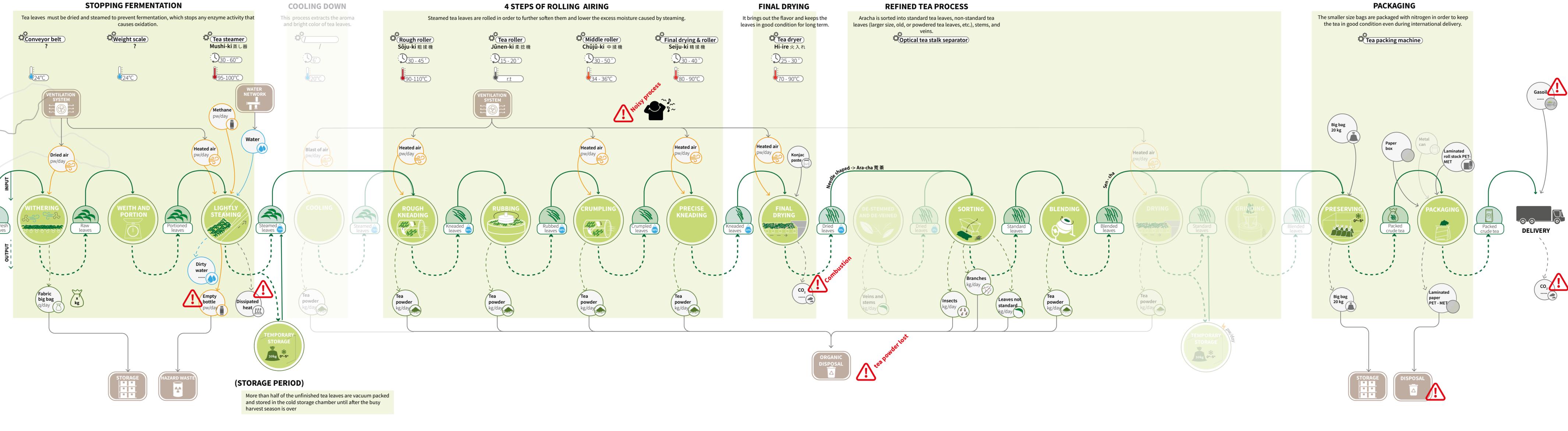
50 DAYS of work in a factory for a year.

4 HOURS

Fresh leaves **100 kg** → Crude tea **20-22 kg**

The yield is low

for 300 days the factory is stopped



"Aracha" Processing - Tencha (Matcha)

Tea leaves that will become matcha powder after the grinding process are called tencha. The fresh tea leaves are **processed as soon as possible after harvest**. At most, they should be processed within 24 hours after harvest.

Tencha processing includes: steaming, cooling down, drying and cutting/sorting.

1) Steaming:

Fresh tea leaves just after harvest is steamed for 30 to 40 seconds and it stops oxidation. Producers adjust the steaming temperature and time according to the condition of the tea leaves.

2) Cooling down:

A loud blast of air quickly cools steamed tea leaves. This fast process **extracts the aroma and bright colour of leaves**. Blown up by the blast of air, the leaves fly for about 6m.

**3) Drying:**

This passage dried tea leaves inside a fire hole which is a three or four-level structure, heated from below by a burner. The temperature of each layer is controlled from 110 to 180°C. Before entering the fire hole, tea leaves are spread regularly over a conveyor belt so that they dry uniformly. There should be no overlap. Tea leaves pass through all levels to dry for about twenty minutes. **The drying process determines the taste of Tencha.**

4) Sorting:

The tea leaves after emerging from the fire pit are cut and sorted to discover if they are dry enough. More solid sections of the tea leaf such as stems and veins may not be dehydrated and are dried again. In the end, the cut and dry tea leaves are mixed thoroughly to **guarantee uniform quality and flavour**.

**5) Finishing:**

Tencha leaves go through three finishing processes: sorting, drying and grinding into a fine powder.

Tencha is ground thanks to a **stone mill**, and the process takes one hour to grind 40g (1.41 oz) of top-quality Matcha. The result is a finely-textured powder. It is advisable to grind Tencha just before shipment to the customer to keep the fresh flavour.

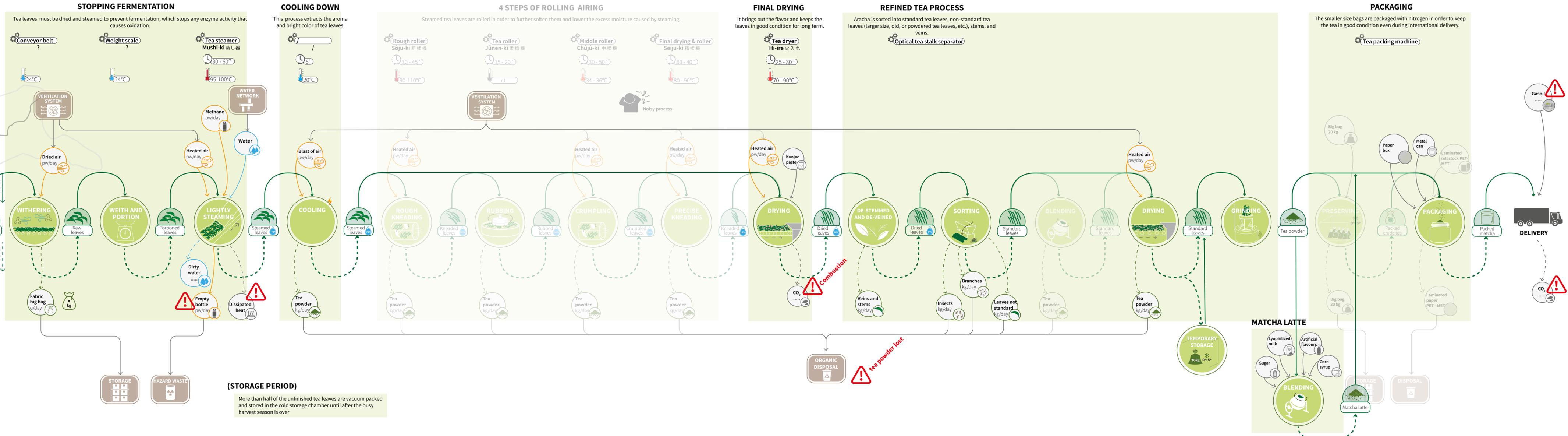
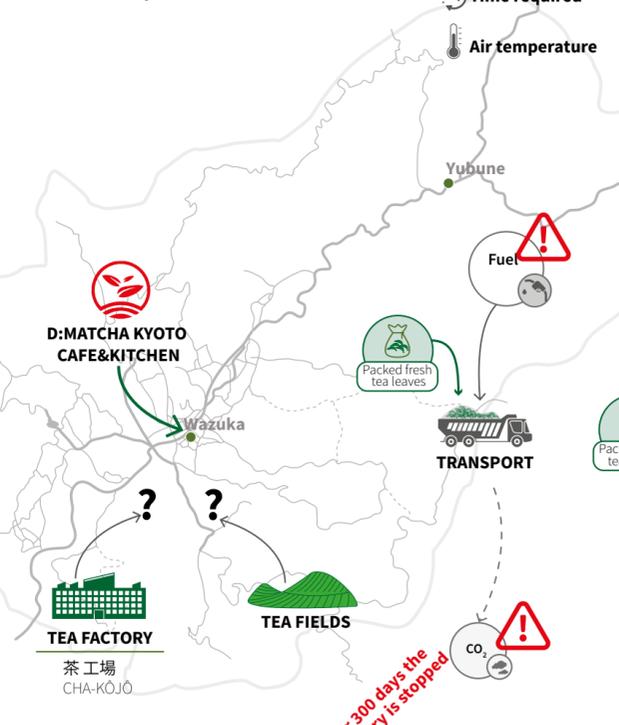


CURRENT TEA MAKING PROCESS (Tencha)

Asamushi method

d:matcha Kyoto - Wazuka

Case study



WINEMAKING PROCESS

The wine sector, in Europe, is subject to specific legislation with particular objectives that can be generally inferred from the Regulation (EC) 1493/99 of 17th May 1999, concerning the standard organisation of the wine market. Authorised enological practices and treatments are set out in article 43, annexes IV and V.

1) Weighing

Following the harvest, the grapes arrive at the winery on trolleys towed by tractors or on trucks with tipping bodies, and then they are weighed (pesa) on the outside yard of the plant.

At the same time as the weighing (atto della pesa) is carried out a grape harvest in order to analyse, in the laboratory, its sugar degree (glucosidic content). Once the analysis has been carried out, the grapes are discharged into a special hopper with the cochlea. It should be noted that in the same wine cellar, there may be more hoppers, used for the different qualities of grapes.

2) Selection

Following the first step of grapes selection, the bunches start their transformation process, for becoming wine.

3) Destemming

Destemming is the separation of grapes from the herbaceous parts of the clusters and the stems that are unnecessary. It can be done

by hand or mechanically, and like harvesting manually, destemming increases quality as only the best grapes (un-ripe, damaged grapes are also discarded) are taken from the clusters. Today, because of the massive quantity of grapes for processing, the destemming takes place mechanically.



Typically, the destemming is undertaken before crushing to lower the development of tannins and vegetative flavours in the finished wine. The stalks modify the composition of the wine: they contain water and little sugar and therefore lower the alcohol content. Their juice is rich in potassium with effects on the salification of acids and therefore on the pH of the must. Because of one of the most significant aspects of the destemming concerns the modification of the concentration of tannins. 54% of total tannins come from the skins, 25% from grape seeds and 21% from stalks.

4) Crushing / Pigiatura

The crushing is the operation that produces the release of the must from the grapes. Until recently, crushing with the pressure of the feet was widely used; this process, today, is

performed by a machine and is called mashing. It is preferable to press the grapes using motor crushers and crushers, capable of pressing the grapes, simultaneously discarding the stalks, to the roller crushing machines, which press both the grapes and the stalks, contributing to an increase in the degree of acidity, which gives an unpleasant woody taste to the future wine. From the pressing, a substantial part is obtained, consisting of the skins (15-20%) and the pips (3-6%), and a liquid part, the must (65-75%). Depending on the time in which maceration is allowed, or the contact between "scum" and must, different types of wine are made: the vinification practices include maceration in the production of red wine (for which alcoholic fermentation is carried out using the 'whole bunch or destemmed grapes).



5) Draining / Sgrondatura

The next step after crushing is the draining, which consists in separating the first part of must, called flower must, from the remaining solid parts. This separation can also be carried

out without the aid of machines, by draining the crushed grapes on simple horizontal or inclined grids. Today the modern cellars are equipped with mechanical drains, consisting of rotating cylindrical cages; in them comes the pressed grapes and the must comes out of the holes, while the dripping marc comes out from the opposite side to the entrance of the grapes. The marc that comes out of the drainer can then move on to continuous presses and hydraulic presses. The draining operation allows obtaining continuously over 50/60% of the flower must.

6) Fermentation / Fermentazione 24-25°C

It is the phase through which the yeasts, through enzymatic activities, convert the sugars into ethyl alcohol and carbon dioxide. Among the factors that most affect the fermentation process, there are the composition and health status of the grapes, the thermal factors at the time of inoculation and the role of oxygen. Aeration is, in fact, necessary at the beginning of fermentation, to allow the growth and reproduction of yeasts.



During fermentation, the peelings tend to form a compact layer at the top of the must, called the pomace cap, which prevents good contact with the liquid part. To avoid this inconvenience and to favour extraction, the must is remixed with fulling (follatura) or reassembly.

7) Alcoholic fermentation

This fermentation is carried out by yeasts of the *Saccharomyces* genus, which transform sugars, in particular, the glucose, into ethyl alcohol, CO₂ and thermal energy.

$C_6H_{12}O_6$ (sugar) \rightarrow $2C_2H_5OH$ (ethyl alcohol) + $2CO_2$ + energy

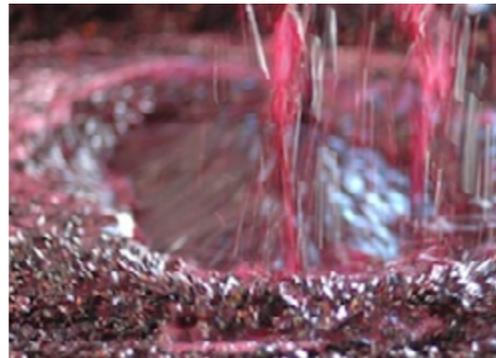
During alcoholic fermentation, other alcohols are formed such as 2,3 butylene glycol, poultry such as glycerin, organic acids such as succinic acid, esters and aldehydes, like acetaldehyde, as well as small amounts of many other substances.

8) Malolactic fermentation

At this point, some lactic bacteria, like *Pediococcus Lactobacillus* and *Leuconostoc*, can carry out malolactic fermentation, which also occurs spontaneously following the standard temperature rise (18-20 °C), with a not very low wine pH (3.2-3.4) and with a limited concentration of sulfur anhydride. So, in malolactic fermentation, malic acid, present in grapes, is transformed into lactic acid and carbon dioxide.

9) Maceration (10-15 days until four weeks)

At this step, there is release of enzymes from the grape cells, which favour the release and solubilisation of organic compounds, in particular, the phenolic ones present in the grape skins, seeds and pulp. This phase is responsible for all the visual, olfactory and gustatory characteristics that differentiate red wines from whites. In order for an excellent vinification to take place, it is necessary to keep in mind what are the factors involved in maceration, in particular, the duration (it will differentiate young wines and ageing red wines), the temperature, the sulfur dioxide content and the alcohol content.



10) Racking

At the end of the fermentation, producers proceed with the racking, which consists in the elimination of fermentation peels and lees, dead yeast cells, coagulated substances, salts and small solid particles.

11) Maturation

At the end of the racking step, and before bottling, the wine is subjected to stabilising

treatments and a period of maturation. Maturation can last a few months in steel or fibreglass containers or one or more years in wooden barrels of different capacities. In other cases, the wine can pass a period in steel and then finish its rest in barrels.



12) Bottling

This step must be carried out following strict hygiene rules. For bottling, producers can choose from a wide range of drop fillers. The bottles must be capped within a short time through pressure and semi-automatic capping machines. This step is significant for avoiding contact with air and consequent problems of oxidation and browning, for that reason, fillers equipped with accessories are used which, just before capping, blow inert gases, such as nitrogen, which do not interfere with the smell and taste of the wine. The only container for quality wines is the glass bottle, an inert material that does not influence the characteristics of the wine, even if in the world millions of hectoliters of wine are packed in bag-in-box or plastic containers, but only for current and ready to drink wines.

It is quite common to see a wine bottle with a plastic cork because it is known that plastic

material stops the exchange of air with outside. Among wine experts, they say that it is quite better to have silicone stopper for wine bottles because it is a cheaper solution for preserving wine and at the same time, the cork trees.

13) Washing plant

In the modern wine cellar, more and more attention is paid to the hygiene of the entire plant and equipment. The water rinsing, even if under pressure and heat, is often not sufficient to obtain complete sanitisation of the equipment.

All this leads us to think that the periodic and constant cleaning of the equipment protects against the alterations of wines (from the increase in volatile acidity, to spontaneous and unwanted fermentations; from unusual odours due to mouldy or encrusted surfaces).

Hygiene is, therefore, certainly one of the most important aspects to keep in mind in the wine sector and all other food sectors and can be divided into three parts:

- Descaling
- Sanitisation
- Sterilisation

In descaling, impurities visible to the naked eye are removed, which are often nothing more than crusts of mould, tartrates or mucilage. With sanitisation, the microbial load is lowered. Sterilisation is the last step of sanitisation; the microbial load is wholly eliminated.

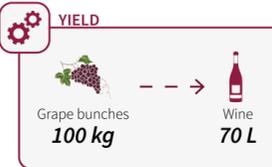
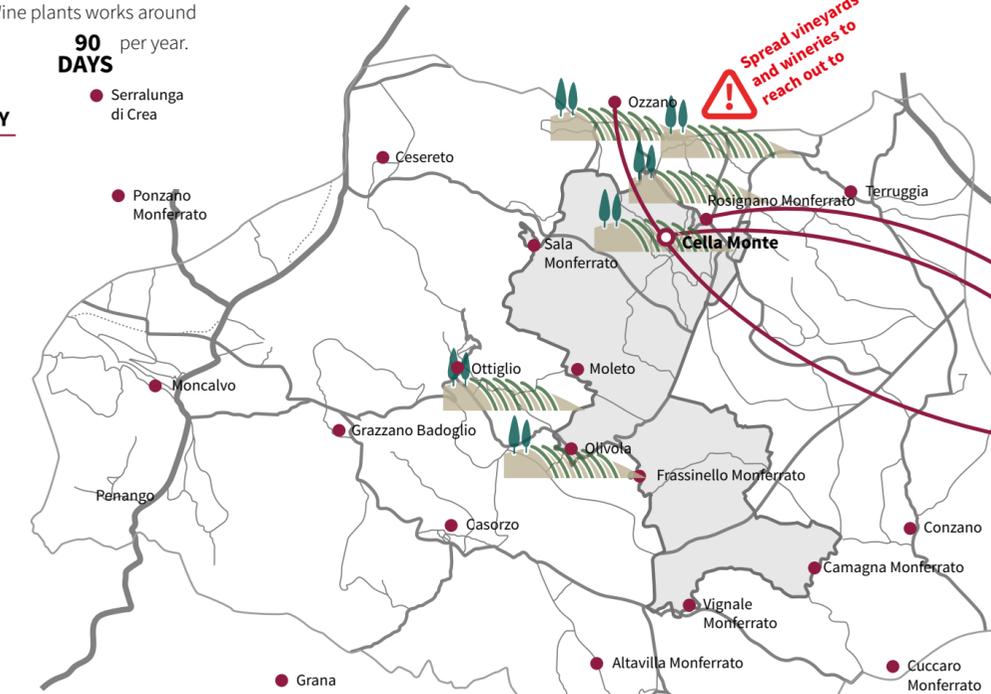
CURRENT RED WINE MAKING PROCESS

Cinque Quinti - Cella Monte

Case study

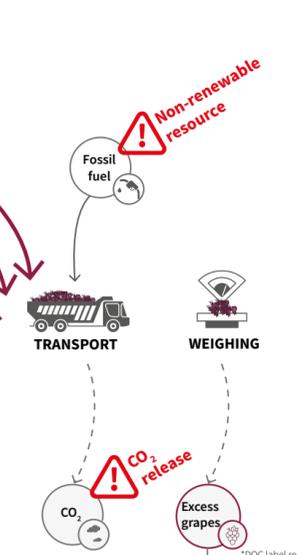
Wine plants works around **90 DAYS** per year.
Serralunga di Crea

WINE FACTORY



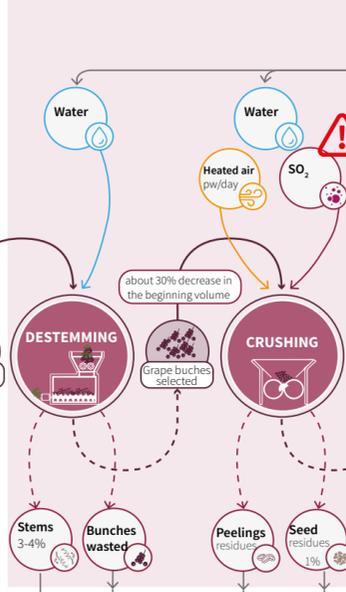
The processing time changes depending on the typology of wine

- Machine
- Weight scale
- Time required
- Air temperature



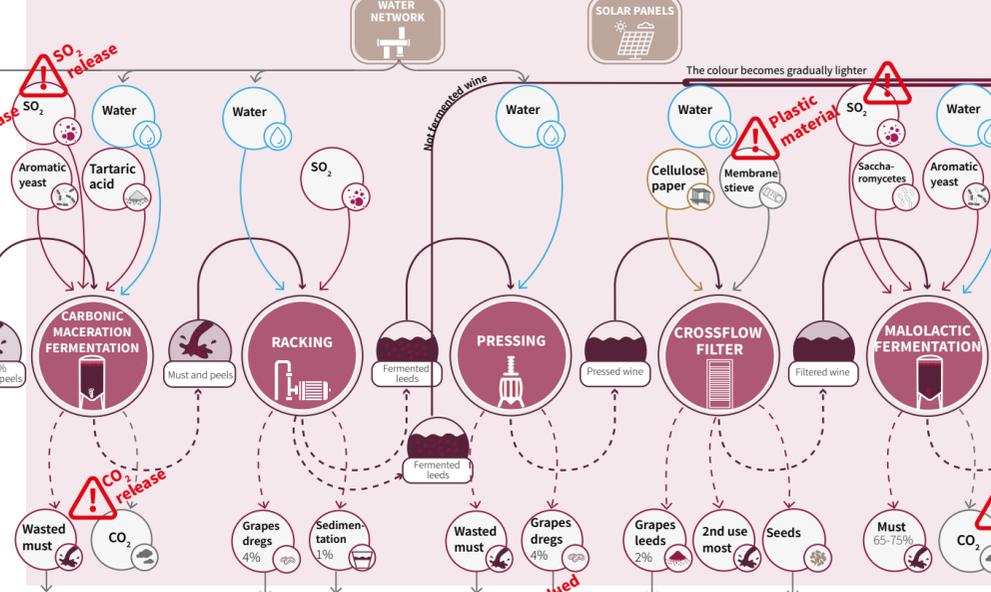
PREPARATION

- Destemmer
- Grape crusher



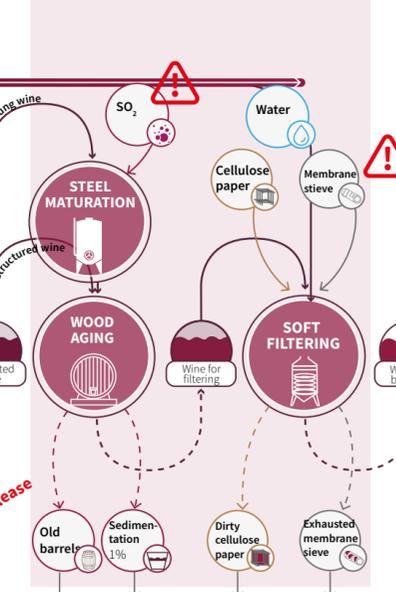
WINE MAKING

- Tanks
- Pumps
- Pressing machine
- Crossflow filter
- Tanks



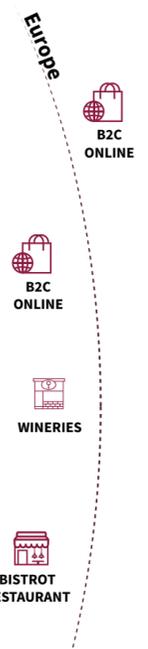
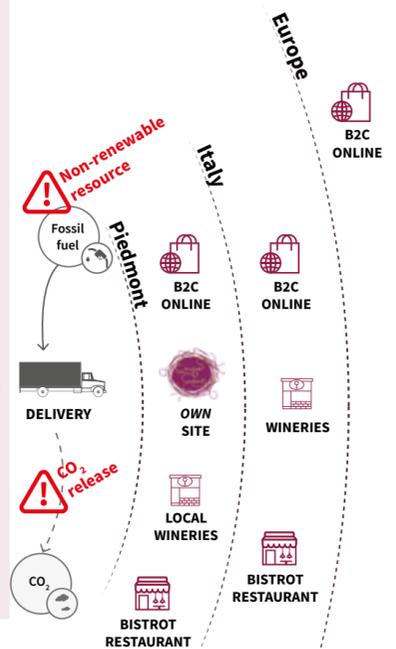
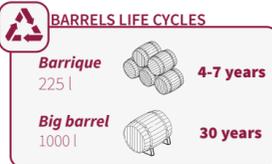
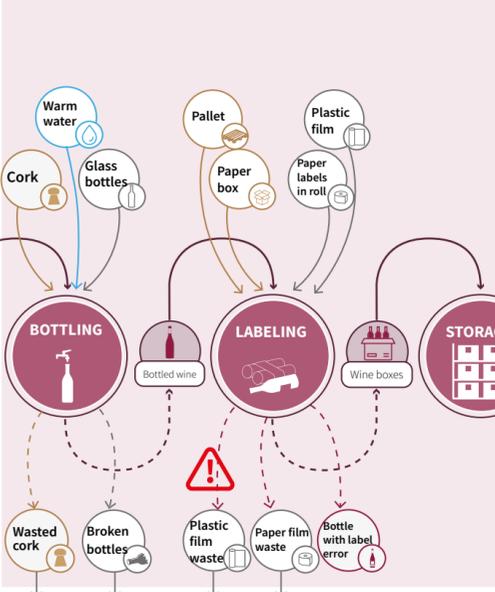
AGING

- Steel tanks
- Big wooden barrel
- Barrique
- Filter



FINISHING

- Bottling machine
- Labeling machine
- Shelves



6.2.3 Outputs: biological aspects

TEA MAKING PROCESS OUTPUTS

Generically, the outputs generated by the green tea production chain in Japan are mainly linked to the **loss of raw materials** during each phase of the transformation process. Most of the waste generated by the production process is, therefore, the **organic output** which is found in different forms in the various stages of transformation, from fresh leaf to dust.

For this reason, it is determined to talk about the **nutritional properties** that this raw material possesses, in order to better understand its value for future uses that fully enhance its properties.

Tea leaves

The tea leaves, which constitute one of the most abundant quantities of production, are mainly discarded during the transport and storage phase of the leaves in the initial phase of the production process and in the **selection phase** that precedes the packaging and sale of the product.

As for the first phase in which there is a high amount of loss of leaves, this is because the production plants that process tea leaves are not of high precision and advanced in the Wazuka area, therefore also the level of accuracy is lower than multinational companies. Therefore, during the movement of

the leaves during the process, from machinery to machinery, large quantities of **edible raw material** are lost. Furthermore, the yield of fresh leaves compared to the finished product is also very low. Once processed, the leaves are selected according to their shape and appearance to be then selected packaged and resold. This step brings with it a quantity, which is lost, of raw material, processed that does not comply with the standards, but which has the same qualities as the finished product that is compliant and intended for sale.

Tea powder

During the process, the tea leaves are increasingly dried, losing a high amount of water both for the heat that is administered to them and for the continuous movements they undergo inside the machinery. These continuous movements, associated with drying, resulting in the production of tea powder, also because in some production steps the leaves are shredded into smaller parts. Most of the tea powder produced is **sucked up by the plant and stored and then disposed of**. All this happens about both the production of leaf tea ready for infusion, but above all concerning the production of matcha which is itself pulverised tea.

Veins and stems

To produce the tencha which will then become matcha, it is necessary to **eliminate the hardest parts of the leaf, including veins and stems**. These two outputs of production are necessary to give the right aroma to matcha tea, but they constitute a very precious waste in terms of nutrients and therefore of economic and nutritional value that these elements have.



Their nutritional values can be considered equal to the tea sold and consumed in Japan, but unfortunately for their appearance, since they do not possess the leaf, they cannot be included in the packaging.

General information about the nutrients of green tea outputs

One of the essential nutrients in green tea is the catechins which oxidise exceptionally quickly. In green tea, most of the catechins remain unoxidised because the process stops the action of oxidising enzymes. Ichibanacha has

a catechin content of 12-14%, while Nibancha has a catechin content of 14-15%. The catechin content of young shoots is higher than mature leaves. In covered teas such as Gyokuro, the generation of catechins is suppressed, giving such teas a lower-catechin content than Sencha.

Tea leaves contain around 0.1% **saponins**, which give it its strong bitterness and astringency. Saponins have **anti-fungal**, anti-inflammatory, and anti-allergy properties and have been shown to lower blood pressure and prevent obesity and influenza. The content of minerals in green tea is high, around 5-7%: mainly potassium, calcium, phosphorus, and magnesium, small quantities of manganese, zinc and copper.

Raw tea leaves contain little aroma, but when harvested, enzymes work to disperse the individual tea leaf elements and release the fragrance. With green tea, as the fermentation process is stopped soon after harvest, the fragrance has little time to develop, and as much of the fragrance is released during the tea leaf production process. As a consequence, tea has a delicate fragrance. The fragrance of teas is formed through the heating process, where the amino acids and saccharides react to the heat to form the tea's fragrance.

WINEMAKING OUTPUTS

In the red winemaking process, the pomace/marc produced is composed of grape seeds, grape skins and stems residues and is characterised by a right level of sugar fermentation.

In accordance with the **EEC regulation n. 337/79** defines scum of wine, that muddy residue that is deposited in the containers, after fermentation, during storage or after authorised treatments, as well as the residues obtained by filtration or centrifugation of this product. The dregs of vinification can be divided into **"heavy"** or **"light"**, depending on the type of decay and represents on average **2-6%** of the total wine produced. It consists mainly of yeast cells produced during alcoholic fermentation, bacteria, tartaric salts, plant cell residues and ethanol.

The definition of wine-making by-product

The Ministerial decree of 11/27/2008 refers to the by-products of winemaking as by-products, and **not as waste**, as they are intended to be used in a production cycle.

Article. 183 of Legislative Decree 152/2006 (environmental standards) defines by-products as "the substances and materials which the manufacturer does not intend to discard according to Article 183, paragraph 1, letter a), which satisfy all of the following criteria, requirements and conditions:

1) Originate from a process not directly intended for their production;

2) Their use is specific, from the production phase, integral and takes place directly during the production or use process previously identified and defined;

3) Meet product requirements and environmental quality suitable to ensure that their use does not give rise to emissions and environmental impacts that are qualitatively and quantitatively different from those authorised for the plant where they are intended to be used;

4) they must not undergo preventive treatments or preliminary transformations to meet the product and environmental quality requirements referred to in point 3), but possess these requirements from the production stage;

5) have an economic market value.

Approximately from 100 kg of fresh grapes 80-85 kg of must, 9-10 kg of marc (intended as peel), 3-4 kg of grape seeds and 3-4 kg of stalks are obtained. The commercial value of this "by-product" of winemaking depends on the quantity of sugars and alcohol, on the presence or absence of stalks, always unwelcome, and humidity. This parameter is closely related to the intensity of pressing in the cellar which, if it reaches high thresholds, can cause, with the loss of the must, even a lower content of sugars and consequently in alcohol.

The marc/pomace

Italian legislation defines "marc" as the whole of the substantial parts of the grape, such as skins and pips, in the presence or not of the stem (Gazzetta Ufficiale, 16 December 1998).



The peel or epicarp is the membrane that encloses the pulp and the grape seeds; formed by an epidermis of 6-10 layers of flattened cells, covered with a waxy substance called blooms, it is the ideal substrate for yeasts and other microorganisms.

-The grape seeds, usually two or three per grape, are covered with a robust epidermis which makes them passive to the fermentation process (and also to distillation to obtain grappa); they represent 25-35% by weight of the de-stemmed fresh marc.

-The stem, consisting of a central axis from which the gleaned grapes branch, is made up for the most of cellulosic substances, small quantities of simple carbohydrates and organic and mineral salts.

The marc has a chemical composition that varies according to various factors, such as the seasonal trend, the place of their origin, the variety of the grape variety, the time of the harvest and the different techniques used in winemaking. As we can see on the scheme, on average we find the following values: water 50-70%, sugars 6-8%, organic acids 1-2%, tannins 1-2%, mineral substances 1-2%, cellulose 10-20%, fats 2-4%, in addition to numerous other substances such as proteins, pectin, colouring substances, aromatic substances, vitamins and microorganisms.

The grape seeds

The fundamental characteristic of the grape seeds is the high content of polyphenols and oils. This makes them a valuable source for the production of antioxidants with a high content of polyphenols and edible oils (grapeseed oil). The seeds are also used during the wine production process as they are responsible together with the skins for the release of polyphenols such as proanthocyanins/tannins and catechins, with organoleptic and sensory functions.



The grape lees

The lees are the residue deposited after the fermentation of the wine mainly formed by exhausted yeasts that have finished their life cycle, tartrates and impurities derived from the grape (fragments of peel, grape seeds or green and dry leaves); it is of particular importance the elimination from wine through



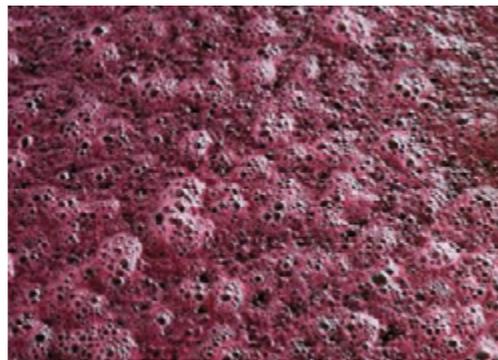
the practice of decanting often followed by filtrations, since the lees, being organic and therefore formed by cells of various nature, in contact with the alcohol of the wine, give rise to lysis of cell membranes and therefore to the dispersion of substances inside the wine which in most cases can produce bad odours which are challenging to eliminate. The practice of bâtonnage, on the other hand, involves the inoculation of specially selected yeasts into the wine, to facilitate the lysis of these yeasts, to modify the overall aroma.

The must

The must is the juice obtained by pressing the grapes, in which hundreds of substances are dispersed in water, which represents 70-80% of it. Sugars, organic and inorganic acids, polyphenols and odorous substances,

pectic and nitrogenous substances, minerals and vitamins, enzymes and microorganisms, complete its composition, similar to that of grapes. Some substances will be almost unchanged in wine; others will be transformed first among all sugars, others will be formed from scratch, enriching the final product with different aromas and flavours.

More must is rich in sugar, and more the wine will be of ethyl alcohol. In addition to the already known tartaric, malic and citric acids, oxalic, glycolic and others are present, even if their percentages are very low. Present inside the must in much lower quantities than sugars and acids; polyphenols are even more decisive in characterising the personality of the wine.



The colour, the structure, the tannins and its very longevity depend in part on the quantity and type of polyphenols in the must, although the winemaking techniques greatly influence these characteristics. Odorous substances are also present in the must in very variable percentages according to the grapes used.

6.3 Good practices that already exists

The following paragraph shows the arrays of good practices that already exist. The final results can take inspiration from them for the analysed areas. First of all, some good practices are related to field management: organic production, natural ways to avoid insects, different cultivation that can be integrated. Secondly, there are some case studies about clever reuses of output.

6.3.1 Integrated pest management, organic and biodynamic cultivation

TEA

It is easy to understand the differences from an organic tea farm and a non-organic one. The first one lives together in the ecosystem and, in reverse, a non-organic tea farm tries to it. There are lots of contributions of modern cultivation through the insight into organic cultivation.

As we can see on Hikibin-an website, which is an organic tea farm based in Kyoto prefecture, to be officially certified organic, it is necessary to meet the requirements listed below.

- **No chemical fertiliser** or pesticides for at least three years.
- Only use an organic fertiliser with no genetic modification (**no GMOs**).
- The tea must be processed and packaged in separate facilities and lines only for organic tea.
- Documents must be filed which prove all requirements are met throughout the growing, processing, and packaging, and which can be traced.

- The organic certification organisation periodically inspects all documents, tea farms, processing facilities, and packaging locations.

To be certified as Organic tea farm, it is necessary to prove that the tea has been grown in those circumstances. On the other hand, to grow organic tea and to have tea certified a unique and pristine environment, which requires **special efforts**.

Nowadays the vast majority of tea is non-organic, also known as conventionally-grown. A small percentage (less than one per cent of all tea) is organic. **It is not very easy to make an organic tea farm** because there are so many non-organic tea farms which compromise a farm that would be organic. Chemical fertiliser dispersal or pesticide and chemical agents meltdown through the soil from surrounding farms and can come inside the organic farm. It is necessary to create a **little buffer zone** between an organic tea farm and non-organic tea farm or to hold organic tea cultivation together with the neighbouring farmers.

According to the less use of pesticides and chemical fertilisers, the organic tea has a **simple and traditional flavour** which is probably the same as teas grown many years ago in ancient Japan.

To grow high-grade quality organic tea, it is required to meet some terms, which are extra time and effort, the range of temperature between day and night in the rolling hills, and calcareous earth. There are not too many places even in Japan which are perfect for farming high-quality organic tea.

Generally, high grade and quality gyokuro and matcha need much fertiliser. However, it is not easy to grow high grade and quality organic gyokuro and organic matcha because organic fertiliser works slowly.

So, organic tea plants are more of a burden than non-organic tea. In other words, chemical fertilisers on non-organic tea plantations make the cultivation process much more manageable for the farmer.

Organic tea farms produce excellent tea flavour but, such excellent grade and quality organic tea are limited. Most of the organic farmers think that growing such high-grade organic tea will not bring farmers economic success and require a lot of time and effort. For that reason, most of the tea farmers in Japan grow low to middle-grade organic teas.

Organic tea farm soil generally is softer than non-organic tea farm soil. Nevertheless, this also depends on the quantity of fertiliser used and the quantity of air in the soil. The

use of organic fertiliser makes the soil softer and airier. The soil becomes airy thanks to beneficial bacteria breathing in the soil that create nutrients and a healthy environment. In that soil, many beings like earthworms, embryos of insect and ants make their habitats.

Nibancha harvest is more difficult in the organic farm than non-organic. With non-organic tea plants, almost the same amount of Nibancha can be harvested as the Ichibancha tea leaves. However, organic tea trees second harvest only produces about 30% to 50% of the amount of the first harvest. Furthermore, unfortunately, the second harvest of organic tea has a flavour that is generally worse than the other non-organic tea harvested.

The reason is directly linked with the organic fertiliser that works slow, and organic tea trees are more challenging than non-organic tea trees. Therefore it is not very easy to make high quality and a large amount of a second organic crop of Nibancha.

WINE

To avoid the development of parasites and viruses, it is possible to resort to **pesticide** treatments with fungicides and insecticides, even if they are polluting and expensive. Furthermore, since many insects and parasites develop forms of resistance to some of the most used active ingredients, there is a risk that in the year following the treatment the parasite not only develops the same but is found to be even more aggressive.

Wine farm owners, which produce **certificated wine**, they do not have to produce a massive number of grapes and wines because the law suggests them to produce less but with the right high quality. For that reason, farmers control the soil and the vines without intensive use of fertilisers or chemical substances.

Many wine farms nowadays, sensitised by the rational use of pesticide products, have adhered to integrated **pest management models**. This system is based on the limited or even zero use of some active ingredients to contain the extermination of insects usually present in vineyards, taking advantage of their competitive action against all pathogens, also considering the factors related to the environment and cultivation techniques that can reduce the development of pests.

A limited number of companies have instead started organic farming; this excludes the use of herbicides for the control of weeds and that of synthetic chemicals for two phytosanitary

defences. In this case, only interventions with products based on copper and sulphur, Bordeaux mixture and mine sulphur, respectively against downy mildew and iodine, of clay and sulphite based formulas against *Botrytis cinerea*, as well as the *Bacillus thuringensis* against moths, moths and buzzers.

Biodynamic cultivation, on the other hand, wants to bring culture closer to the energetic forces that give life to each plant species in an always different way. It refers to the models of biodynamic agriculture expressed by the philosopher Rudolf Steiner at the beginning of the twentieth century, in which in the management of the crop, importance is given to the balance of the soil and seasonal energy forces. It takes into account a minimal use of chemical products, except for copper and sulphur-based products, not rejected in biodynamics, integrated with plant extracts which tend to strengthen plants and increase their self-defence. Furthermore, there is a tendency to respect useful insects as a symbol of the life of the vineyard and to use only suitable surfaces for viticulture, to achieve maximum variation in the aromas of the fruit and the taste of the wine.

6.3.2 Current reuse of industrial outputs

TEA SECTOR

According to 6.2.3 paragraph, when the research talks about green tea output, it is relevant to say that most of the tea production waste is organic and therefore **edible**. They can not be considered as wastes but as by-products because of their nutrient and biological properties. The following chapter shows some of the already known uses of by-products from the tea process, to define a general state of the art that we have in Japan in this sector.

Based on Ito En Company reports, **the reuse of tea waste is increasing**. It means that nearly all tea waste could be reused. Ito En is a leading company in tea waste recycling, but in small and medium companies, often it is not the same thing. ITO EN company has developed different **methods for recycling** used tea leaves and including recycled tea leaves into different kind of products and materials. These include "Chahaigo Board," which is used in tatami mats type of traditional Japanese flooring found in Japanese-style rooms and "Chahaigo Resin," which has been used as a material for manufacturing vending machines and park benches.

Besides, tea waste can also be used as a **heavy metal adsorbent** as well as animal feeds. With proper processing, tea waste can be manufactured to become nutritious food for animals.

Nowadays, based on the idea of tea mats, **paper made from tea is also developed**. **Tea candle** and **tea matches** are also new inventions of the recycle of tea waste.

WINE SECTOR

According to 6.2.3 paragraph, there is a well-defined law about the reuse of winemaking process outputs, which are **not considered as wastes but as by-products because of their nutrient and biological properties**. In this following chapter, we would like to show some of the already known uses of by-products from winemaking in order to define a general state of the art that we have in Italy in this sector.

Stalks as compost

From the stalks, it is possible to produce compost (mixed with marc, vine shoots and plant materials of various origins) to be **spread on the ground**, since the stalks are rich in nutrients such as nitrogen and potassium because they are directly taken from the field and not processed.

Pomace extraction of polyphenols

Pomace for the extraction of anthocyanins (such as enocyanin) and other polyphenols, tartaric acid, cream of tartar and other compounds to be used in the preparation of agri-food, **cosmetic and pharmaceutical products**.

The marc destined for distillation to make liquors like grappa

Since grappa is a marc distillate, the quality of the marc itself is the first and most important factor in obtaining the right product. The freshness and good state of conservation of the pomace are fundamental, as any deterioration of these would inevitably reflect on the final product. Before the distillation of the pomace, they must **contain alcohol**, which is possible only when the pomace has been fermented, or when the sugar contained in them has turned into alcohol, this condition depends on the type of wine-making process.

Seeds oil

The **grape seeds contain oil** in the ratio of 10-20%, a percentage that varies with the cultivar. An accurate and fast-drying phase is necessary to produce an oil with excellent organoleptic characteristics and **good polyphenol content**, if this does not happen, microorganisms will invalidate the final result. Usually, it is extracted mechanically with hydraulic or screw presses; with this method, a high priced product is obtained. Another method is extraction with hot water, but it has meagre yields and requires the subsequent breaking of the emulsion and stages of evaporation of the water. The most common production process is extraction with hexane. It is also possible to use carbon dioxide in the supercritical phase.

4%

STEMS



3%

SEEDS



82%

MUST



11%

MARCS



6.4 Defining and managing the throughput flowing in a System

The following chapter starts describing the problems come from the supply chain research: from the **field** to the **production chain**, taking into account the **input**, the **output** and the processes. After the list of the problems, the research continues with the **systemic proposals** that aim to solve those problems finding **alternative and innovative solutions**.

6.4.1 Problems analysis and opportunities from the current supply chaing

TEA - FIELD MANAGEMENT

The main problems related to the management of the fields are related to the **wintertime**, the use of **chemical pesticide** and the communication of the quality of Japanese green tea.

First of all, the wintertime is the season when the tea plants rest and the production is stopped.

Moreover, one big problem is the use of pesticide, above all, when it is applied during the **third harvest**. The third harvest produces low-quality tea, so, in addition to the no excellent taste of the drink, **it contains pesticides**. It could be challenging to remove altogether the use of insecticide during the rainy season that brings bugs.

Another problem is related to the tea called **Bancha**, that is the result of the transformation of tea leaves harvest during the pruning (not during the harvest). Even if it is smart to reuse

the leaves that would otherwise be thrown away, this kind of tea **it is sold abroad as "high-quality Japanese green tea"**.

TEA MAKING PROCESS

The transformation process of tea leaves is fast; it takes only 4 hours. **The total workdays in the factory are less than 50 for a year**. It means that the plant is wholly stopped for 300 days.

Input

The transformation process of tea leaves is quite simple, and it does not require extra input. Indeed, being a mechanical process, it does not need chemical substances.

One relevant aspect is the content of moisture lost during the process. **From 100 kg of fresh tea leaves, the final amount of crude tea is 20-22 kg**. What about the water wasted?

Output

Since the number of input that enter in the process is low, the problems of the output are consequently few.

The main problem is the production of tea powder during the entire transformation process. It is because some material escapes the machinery. It is an edible product wasted.

WINEMAKING PROCESS

Input

- **Sulphur dioxide**

SO₂ is a substance used to prevent oxidation and preserve the specific characteristics of the wine. Its use manages the conservation of wine because it can inhibit mould and bacteria, also preventing the development of diseases. Sulphur dioxide is not naturally present in grapes. For this reason, it can be considered as a by-product of wine. It also represents the main problem in wine production. While respecting the maximum limit allowed by law, the quantity of sulphites added to the wine is very high, and it is because the operation is repeated several times during the whole process. SO₂ can be **dangerous for humans**, causing irritation of the digestive tract and altering the metabolism of amino acids and vitamins. Concerning wine, the side effects are the alteration of the organoleptic characteristics and turbidity during storage.

- **Wood, stoppers and bottle**

Often the wood to make the ageing barrels, the caps and the bottles for packaging, are

raw materials that mainly come **from foreign countries** or areas of Italy far from Piedmont. The main problem is related to the availability of these products in the production premises of the Cinque Quinti company, located in the Monferrato area, polluting means of transport is required, such as aeroplanes and road transport, which emit high quantities of CO₂ with long distances they have to travel.

The cork oak is a plant that, in Italy, is found mainly in Sardinia and a few other Mediterranean countries.

- **Soda caustic detergents**

The detergents used for cleaning the systems are enriched with surfactants and complementary substances. There are many surfactants, with very different characteristics and origins: most are of synthetic origin, therefore composed of substances not present in nature, absolutely **non-biodegradable and toxic for organisms** and aquatic plants. Degradation is instead necessary for the treatment of water subjected to purification. Otherwise, the rivers and streams of many places would be polluted with detergent foam and eventually these detergents would find a way to reach the drinking water of many inhabited centres.

Furthermore, many of these products are based on **caustic soda, a highly corrosive and potentially harmful substance**. The mere contact with the skin does not cause anything, but if it is combined with water, it triggers a very corrosive chemical reaction. They are also highly dangerous for the environment.

Output

- **CO₂ from the fermentation process**

Carbon dioxide is produced during fermentation by the selected yeasts. About 50% of alcohol produced from the raw material, the must, the **carbon dioxide produced constitutes 45%** of the total products of the fermentation reaction. These are considerable quantities: it is currently dispersed in the air, thus contributing to the increase in the levels of this substance present in the atmosphere. Alongside this first and most important problem, there is also that linked to operator safety.

- **The heat from fermentation process**

Compare to the production of carbon dioxide, the fermentation process of the must also produce heat. **The temperatures that develop range from 16 ° C to 25 ° C**. The temperature of the must is continuously monitored and must never reach temperatures above the maximum limit. Like carbon dioxide, heat is also dispersed in the air, and this represents a significant problem for the environment and global warming.

- **Packaging**

In the final step of the winemaking process, during the bottling phase, waste consisting mainly of packaging is generated. Currently, they are destined for separate collection, is made up of different materials: cardboard, PE, PP, PVC, paper and wood. The output generated by the packaging does not consist

solely of the material necessary to protect the final product, but also from the packaging of the packaging itself. For example, glass bottles are packaged in a plastic film, caps in plastic bags which are in turn contained in cardboard boxes, and capsules in cardboard boxes with dividers.

- **Indirect CO₂ and heat production**

Indirect carbon dioxide and heat are those generated by power plants for the production of electricity. The electricity production process is based on non-renewable resources and on the production of polluting elements in large quantities. The energy demand of the winery is variable depending on the winemaking period: some machinery, such as filters to purify the must, are used only during and in the phase immediately after the grapes are delivered to the farm. Others, however, such as cold rooms, which contain the wine not yet bottled, are active all year round.

Input and output

- **Use of drinking water**

One of the critical aspects of many stages of wine production is the use of drinking water for uses other than food. After its use for the winemaking and bottling processes, the water is introduced into the sewer system, preventing its reuse even if its properties allow for further use or natural purification, given that for some stages of wine production the waters are not contaminated with dangerous substances.

Activities about the territory

The proposal concerned the activities linked to the territory focuses on the Japanese handcraft. The two handcraft production the proposal wants to exploit are the **shibori and the washi paper**.

During a shibori workshop, the indigo-based dyeing can be substituted by a **gree tea-based dyeing**. The tea powder collected during the transformation process is the base of this tincture. Indeed, the tea powder it is very dye and stains fabrics.

The final result is a **light green fabric instead of light blue**.



The second handcraft workshop is about the creation of the washi paper.

As the research shows in the previous chapters, **mulberry plants are spread all around the Yubune area**, and it is possible to obtain the fibre for washi paper.

The productive process is easy, and it can be personalised with the addition of **tea powder as a natural paper colourant**.

The final effect will be a light green paper sheet.

Both workshops are excellent ways **to reuse the wasted tea leaves**, which cannot be re-included in the food production chain because they are not clean.



Activities about food

The proposal about the activities related to food focuses on the **renovation of the d:matcha menu**. Indeed, even if they home-backed all the product, they use some ingredients that are totally outside the Japanese culture. This is a common behaviour that Japanese have to westernise their culture.

Some recipes will contain the new raw material that the field produces: the Sansho pepper and the Shiitake mushrooms.

WINE WORLD

Field management

The first proposal is directly linked with the issue of chemical fertilisers. Since there are many herbivorous animal farms in the area, chemical fertilisers can be replaced with the application of the **green manure** within the vineyards as a source of nutrients for the soil. Furthermore, it is possible to include new **raw materials** in the supply chain such as grasses (barley, oats, rye), leguminous (beans, lentils) that **carry nitrogen and improve soil conditions**.



Finally, the proposal includes **smarter reuse of the second-choice grapes**. If today it is harvested after the first harvest, mixed to make low-priced table wine, it is possible to reuse it to make other products.

Fr example, it can be included as raw material within the workshop in the **"educational farms"** with children: it can be transformed in fruit juice.

Production chain:

The proposal concerning the production chain includes **better management of the heating system** firstly. It is possible to exploit the heat deriving for the fermentation, conveying it to other processes that require heat, such as plant washing and bottling.

Activities about the territory

The project promotes the creation of **educational farms for creative workshops** where it is possible to reuse of packaging waste such as cardboard and caps.

Another interesting proposal concerns the **production of mushrooms**. Indeed, the wasted cardboard derived from the packaging can be the ground for growing mushrooms. This new mushrooms nursery can be **put inside the Infernots** because of the content of humidity, ideal for mushrooms.

Activities about food and wine

The activities linked with food and wine want to structure new **tasting menus** in which local raw materials are the protagonists. The list must be agreed with the **seasonality** to diversify the proposal. The raw materials deriving from the fields of ownership of the same company (hazelnuts, grasses, truffles) can be included in the menu.

Moreover, food is an excellent **souvenir**: it is possible to integrate the offer of food and wine souvenirs starting from the new productions deriving from the system (products derived from pomace flour, grape seed oil ...)

MAIN PROPERTIES

Polyphenol

- Catechins
- Caffeine
- Amino Acid (Theanine)

Vitamins

- Vitamin C
- Vitamin B2
- Vitamin E
- β -carotene
- Folic Acid

Minerals

- Calcium
- Potassium
- Phosphorus
- Manganese

Other components

- Saponins
- Fluorine
- γ -aminobutyric acid (GABA)
- Fragrance Components
- Chlorophyll

MAIN OUTPUTS



TREATMENTS



OPPORTUNITIES



MAIN PROPERTIES

Polyphenol

Amino Acid

Vitamins

Phylloquinone
Thiamin
Pyridoxine
Ascorbic acid
Riboflavin
Niacin
Choline, A, Bg & E

Minerals

Manganese
Potassium
Copper
Iron
Magnesium

Other components

Tannins
Pectics substances
Anthocyanins
Oil

MAIN OUTPUTS

EXCESS GRAPES

From fields

From process



STALKS

From fields

From process



GRAPE SEEDS

From process



GRAPE MARCS

From process



GRAPE MARCS

From process



TREATMENTS

Extraction

Mixing

Shredding

Mixing

Grinding

Extraction

Grinding

Distillation

Mixing

Grinding

Extraction

Distillation

OPPORTUNITIES

Juice

Sugars substances

New edible material

Woodchips

Compost

Oil

New material

Alcoholic products

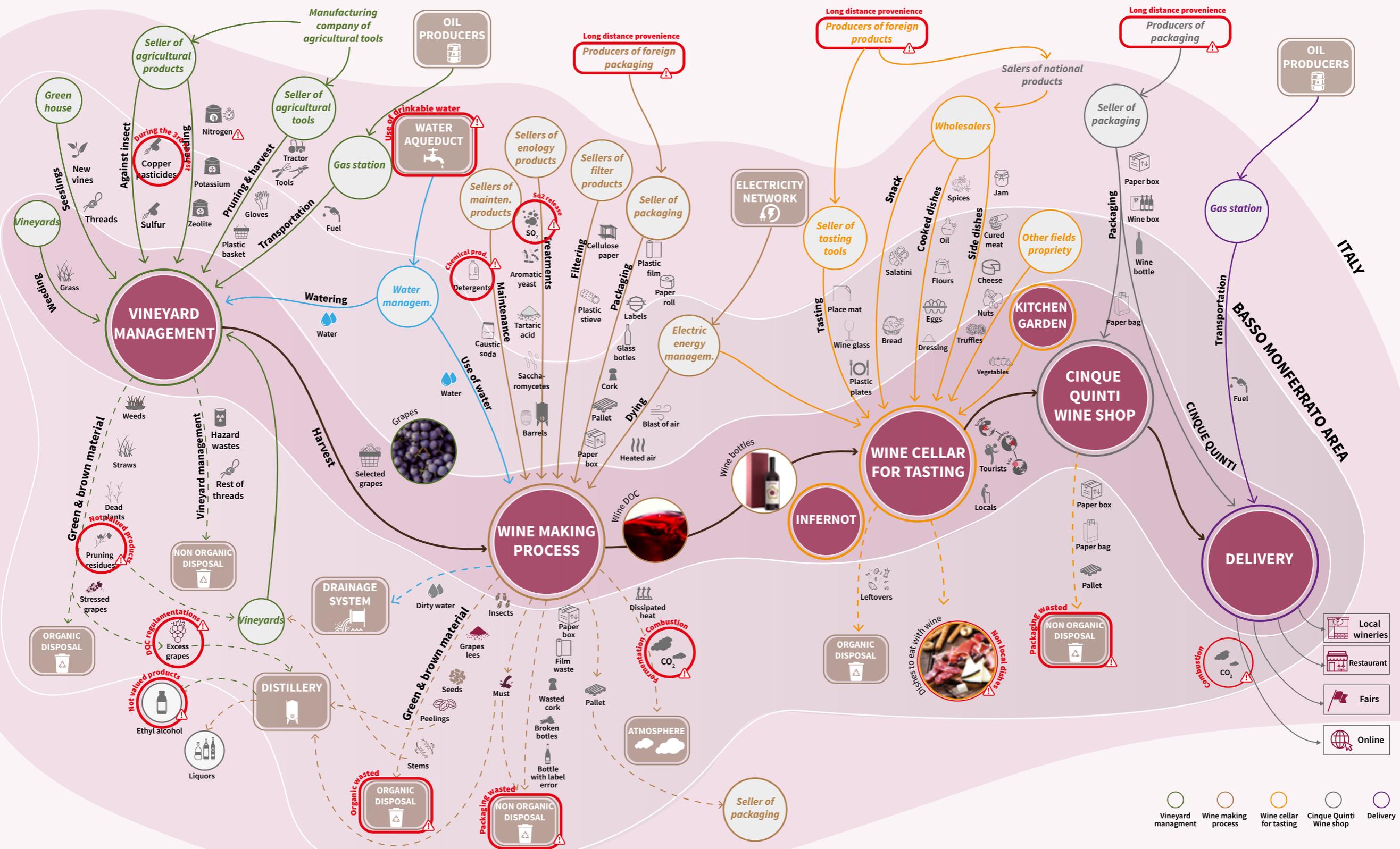
Feed for animals

New edible material

Coulorant

New material

Alcoholic products



References

Bibliography

Novello V., *Filiera vitivinicola: valorizzare residui e sottoprodotti*, ed. Edizioni L'Informatore Agrario, 2015.

Finesso A., *Valorizzazione di scarti vinicoli per il recupero di prodotti ad alto valore aggiunto ed energia*, Ca' Foscari University MSc Thesis, 2015.

Sassone P., *La "Pietra da Cantoni" del Monferrato Casalese (AL): ipotesi di ripresa produttiva per la conservazione della tradizione edilizia locale*, art. Studio di Geoingegneria Ambientale Mineraria, 2005

Corzani V., *Le aziende vitivinicole: da "machines à produire" a elementi di attrazione nel paesaggio. Proposte e criteri progettuali per l'efficienza funzionale e la qualità architettonica ed ambientale delle strutture ed infrastrutture della trasformazione enologica.*, PhD Thesis, Università di Bologna, 2012

Duso C., Girolami V., *Lotta integrata in viticoltura*, ed Centro regionale I.R.I.P.A Quadrifoglio.

Magarò E., *I sottoprodotti delle industrie vinicole*, Istituto d'Istruzione Superiore "G.Cantoni" Treviglio (Bergamo), 2012.

Gazzetta Ufficiale n. 302 del 28 dicembre 2016, Testo Unico del Vino italiano, 2016.

Creo C., Ansanelli G., Buttol P., Chiavetta C., Cortesi S., Cutaià L., Nobili P., Sposato P., *Uso efficiente delle risorse nelle imprese vitivinicole.*

ENEA, *Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile*, 2018.

Web references

<http://www.o-cha.net/english/association/jpgreentea/pdf/14.pdf>

<https://www.hibiki-an.com/contents.php/cnID/9>

<https://www.heartofthedesert.com/the-cycle-of-a-wine-grape/>

https://cinquequinti.com/wp-content/uploads/2019/07/EN_General_5_5_presentation_sp.pdf

<https://www.dmatcha.com/our-farm>

<https://tea.fandom.com/wiki/Aracha>

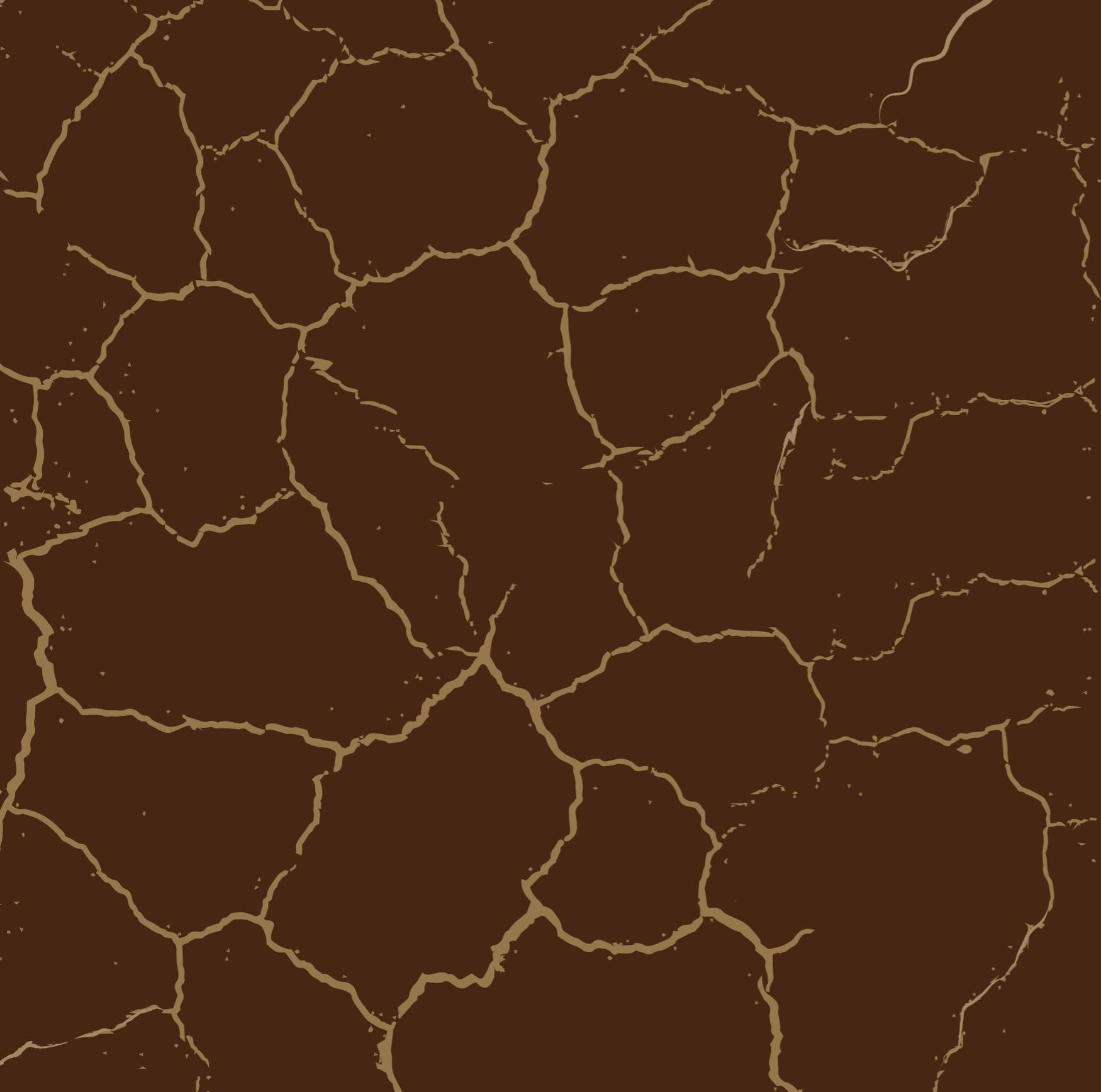
<https://en.m.wikipedia.org/wiki/Aracha>

<https://www.hibiki-an.com/contents.php/cnID/9>

<https://teaepicure.com/tea-leaves-oxidation/>

<https://www.myjapanesegreentea.com/aracha-processing>

<https://perlagesuite.com/en/project/screw/>



7

SPREAD OUT

*the Systemic approach
as a cultural experience
to enhance the cultural
landscape*

7.1 The Cultural Landscape: the ideal territory where to apply the systemic approach

The last chapter is dedicated to the summary of the obtained result finding the ideal contexts where to apply **systemic design** as a **tool for enhancing territories**. In particular, the chapter aims to define some **general guidelines** suitable for a specific context where the final **meta-projects** focus. The ideal contexts we are talking about have been identified in the so-called **cultural landscapes** of UNESCO.

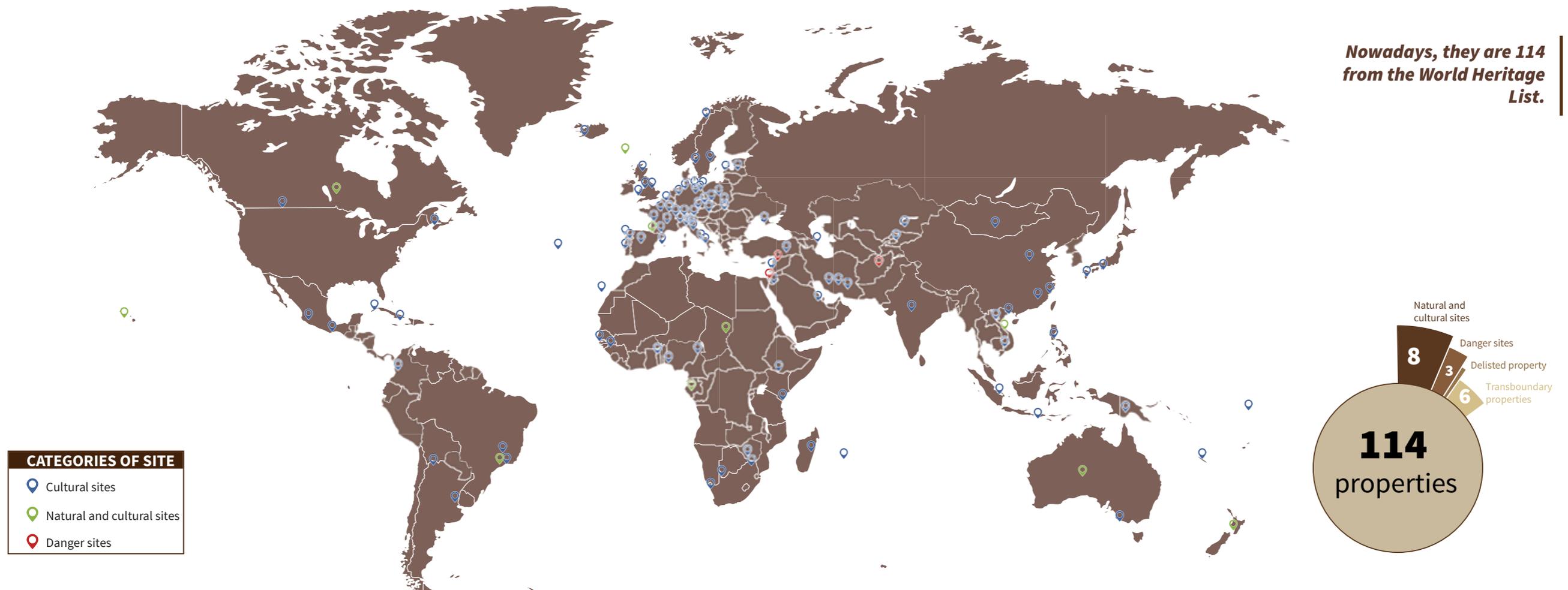
Indeed, the UNESCO area of "Paesaggi Vitivinicoli di Langhe, Roero e Monferrato" is a UNESCO Cultural Landscape, and the area of Uji is aiming for the promotion of Cultural Heritage.

7.1.1 World cultural landscape

The Committee acknowledged that cultural landscapes represent the **"combined works of nature and of man"**. They are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal.

The name "cultural landscape" includes the idea of interaction between humankind and its natural environment. Cultural landscapes often reflect specific methods of sustainable land-use, considering the characteristics and limits of the natural environment, in spiritual relation to nature. The **protection of cultural landscapes** allows the existence of traditional forms of land-use supports biological diversity in many regions of the world.

Nowadays, they are 114 from the World Heritage List.



The reason why the research focus on the Cultural Landscape is that they are characterised by a **specific supply chain** that shapes the territory profoundly, creates a **specific identity**, strengthens the culture generating material culture and local know-how thanks to the raw materials.

On the website of the UNESCO there is the following categorisation:

The three categories of World Heritage cultural landscapes	
CULTURAL LANDSCAPE CATEGORY	EXTRACT FROM THE OPERATIONAL GUIDELINES FOR THE IMPLEMENTATION OF THE WORLD HERITAGE CONVENTION
i	The most easily identifiable is the clearly defined landscape designed and created intentionally by man. This embraces garden and parkland landscapes constructed for aesthetic reasons which are often (but not always) associated with religious or other monumental buildings and ensembles.
ii	The second category is the organically evolved landscape. This results from an initial social, economic, administrative, and/or religious imperative and has developed its present form by association with and in response to its natural environment. Such landscapes reflect that process of evolution in their form and component features. They fall into two sub-categories: <ul style="list-style-type: none"> - a relict (or fossil) landscape is one in which an evolutionary process came to an end at some time in the past, either abruptly or over a period. Its significant distinguishing features are, however, still visible in material form. - a continuing landscape is one which retains an active social role in contemporary society closely associated with the traditional way of life, and in which the evolutionary process is still in progress. At the same time it exhibits significant material evidence of its evolution over time.
iii	the final category is the associative cultural landscape. The inclusion of such landscapes on the World Heritage List is justifiable by virtue of the powerful religious, artistic or cultural associations of the natural element rather than material cultural evidence, which may be insignificant or even absent.

The World Heritage criteria	
CRITERIA NUMBERS	EXTRACT FROM THE OPERATIONAL GUIDELINES FOR THE IMPLEMENTATION OF THE WORLD HERITAGE CONVENTION: CRITERIA (paragraph 77)
i	represent a masterpiece of human creative genius; or
ii	exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design; or
iii	bear a unique or at least exceptional testimony to a cultural tradition or to a civilisation which is living or which has disappeared; or
iv	be an outstanding example of a type of building or architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history; or
v	be an outstanding example of a traditional human settlement or land-use which is representative of a culture (or cultures), especially when it has become vulnerable under the impact of irreversible change; or
vi	be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance (the Committee considers that this criterion should justify inclusion in the List only in exceptional circumstances and in conjunction with other criteria cultural or natural);
vii	contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance; or
viii	be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features; or
ix	be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals; or
x	contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation;

CULTURAL LANDSCAPES: EXAMPLES

“Cultural Landscape of Honghe Hani Rice Terraces”

The first one is called “Cultural Landscape of Honghe Hani Rice Terraces” and it is marked by spectacular terraces that cascade down the slopes of the towering Ailao Mountains to the banks of the Hong River. Over the past 1,300 years, the Hani people have elaborated a complex system of channels to bring water from the forested mountaintops to the terraces. They have also created an integrated farming system that involves buffalos, cattle, ducks, fish and eel and supports the production of red rice, the area’s primary crop.



“Coffee cultural landscape of Colombia”

The second one is located in Colombia, in Eje Cafetero, and it is an exceptional example of a sustainable and productive cultural landscape that is unique and representative of a tradition that is a strong symbol for coffee growing areas worldwide - encompasses six farming landscapes, which include 18 urban centres on the foothills of the western and central ranges of the Cordillera de los Andes in the west of the country.



“Viñales Valley”

In Cuba, the cultural landscape characterised by traditional techniques still in use for the production of tobacco. The territory is enhanced by the vernacular architecture of its farms and villages, where a rich multi-ethnic society survives, illustrating the cultural development of the islands of the Caribbean, and of Cuba.



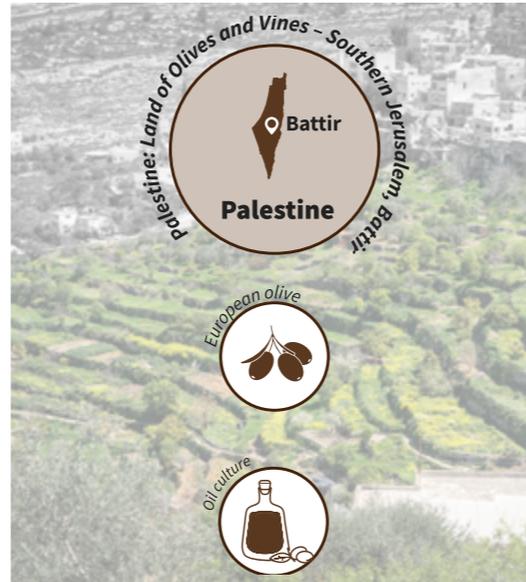
“Palestine: Land of Olives and Vines – Cultural Landscape of Southern Jerusalem, Battir”

It is a cultural landscape that comprises a series of farmed valleys with characteristic stone terraces, some of which are irrigated for market garden production. Others are dry and planted with grapevines and olive trees. The development of terrace farming in such a mountainous region is supported by a network of irrigation channels fed by underground sources. A traditional system of distribution is then used to share the water collected through this network between families.



“Agave Landscape and Ancient Industrial Facilities of Tequila”

In Mexico, the “Agave Landscape and Ancient Industrial Facilities of Tequila” is shaped by the culture of the plant used since the 16th century to produce tequila spirit and for at least 2,000 years to make fermented drinks and cloth. Within the landscape are working distilleries reflecting the growth in the international consumption of tequila in the 19th and 20th centuries.



“Agave Landscape and Ancient Industrial Facilities of Tequila”

The last cultural landscape is in Venezuela, and it is called “Hacienda Chuao”. The Chuao Plantation is located in the valley of the same name surrounded by one of the most important cloud forests of the Venezuelan coastal mountain range. It produces a variety of cocoa that is famous throughout the world, and is unusual because it has a well documented history going back to the 16th century and a wealth of archaeological evidence and monuments from the colonial era.

The cultural landscapes provide many attractive points for designers: from the product, the service, the communication until the productive system

The strategy

The research proposes some guidelines that are included in a bigger strategy that focuses on the local production chain, which creates multilevel synergies with the territory. The connections and the relationships among actors and productive systems create a high value which can be exploited to enhance the cultural landscape.

However, is it possible to operate with the territorial elements continuing to preserve these landscape that is part of the ecosystem?

The strategy has been applied on the two cultural landscapes analysed.



7.2.1 The structure: definition and main goals

The support policies for the cultural heritage sector can be divided into three broad groups, taking into account their practical application. The first group includes the policies that are financed, in general with extraordinary funds, the interventions for the recovery of and maintenance of the cultural heritage to support the economic impacts of the process of valorising the recovered assets.

The second group includes those policies which have the goal of contributing to the development of subsidiary industries, i.e. the industries producing products or services used in the valorisation process.

In the third group, all those intervention policies aim to rationalise and reorganise the enhancement process to increase the offer of services and their use.

The systemic design approach and the elements of the blue economy represent the methodological tools that define new potential opportunities for the development of the territory. The aim is, therefore, to systematise the production chains of a cultural landscape. All this to encourage good practices to reduce waste, according to the elements of the territories for the enhancement of local know-how and the promotion of the systemic approach as a cultural experience.

The strategy must:

- Integrate the territorial enhancement processes.
- Privilege the realization of integrated action programs at the expense of precise interventions.
- Strengthen the connections between the cultural industry and the other productive sectors of the territory.
- Make it easy to collect economic outcomes

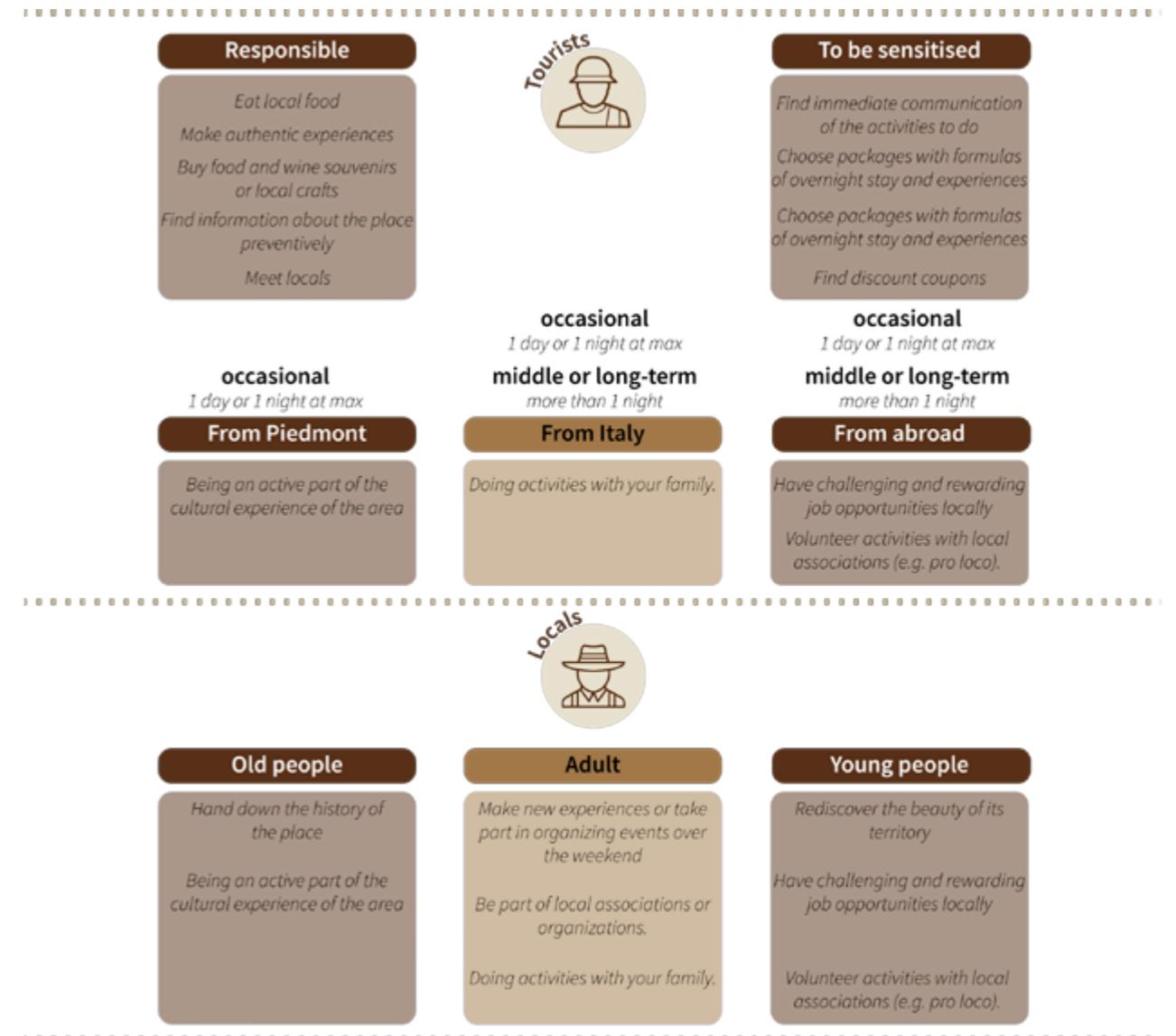
In general, it must create a strong integration between the enhancement of all the cultural resources of the territory and the current local economic and social system.

Before starting with the design of the strategy, it was necessary to identify all the needs of the actors that revolve around the cultural landscape. These actors are divided into three categories: the beneficiaries, the producers of

the production chain and who manage the strategy.

The following schemas summarise the characteristics of the different users and their needs.

BENEFICIARIES





Essential goods

Finding local raw materials

Stand out by selling products not available at GDO

Promote the purchase of products at their realities

Handicraft

To make know-how known as an intangible heritage of a local culture.

Experiment with new raw materials

Implement your business by offering activities through workshops, for tourists, residents and schools

Services

Know English well

To be financed with funds to expand the offer of services

MANAGERS



Local municipality

Be accompanied in the promotion process of the systemic approach

Receive and allocate funds to local companies

Promote the territory to locals and tourists

Farmers & Producers

Implement business with the new opportunities of the systemic design

To be helped in the renewal of the production facilities

Know the value of the outputs

Make the company identified

Ecomuseum

To be helped in the renewal of the museum

Presence of locals volunteers

Tell the story of the territory in an innovative way



School group

Participate in educational recreational activities

Practical activities (didactic learning by doing)

Discover the area with educational farms, craft workshops, museums

Research team

Participate in specific activities such as company visits

Experiment with raw materials

Easily recover data and statistics on the territory

Workers group

Discover the area through food (more convivial)

Plan activities and guided tours with limited time available



UNESCO

To be helped in the management of cultural landscapes

Enter into partnership with other realities of enhancement

Infernot owners

Be sponsored

To be helped by the volunteers during the openings

To be financially assisted for maintenance of the infernots.

Cultural associations

Enter into partnership with other realities of enhancement

Be sponsored and get known by the locals



Oranised group

Know and view the itineraries in advance (in virtual or paper form).

Share the visit needs with a view to co-planning the route.

Find information about the proposal of the already "existing" itineraries.

Private trip

Know and view the itineraries in advance (in virtual or paper form).

Plan your tour and pit stops in advance

Find information bottom-up through blogs and feedbacks from other users



Native of a context

Create a dense network of stakeholders

Have helpful tools as templates, roadmaps

Create direct contact with the company

Quantify the material flows of companies and the territory

Foreign of a context

Find connector actors between designers and stakeholders

Know the local culture very well

Live in the analysed context for months

Have helpful tools as templates, roadmaps

The structure of the strategy is branched into three partes, that corresponds to the three main goals

- 1) Analysing the local production chain
- 2) Communicate the cultural landscape
- 3) Promoting the systemic approach

Each branch contains three levels of penetration of the project that start from general applications and end with single applications.

The first level is the most **generic** one: indeed, all these general proposals can be **suitable for all the territories** that the strategy can be applied.

The presence of a multidisciplinary team, a set of tool to interact with the vast array of stakeholders, are fundamental for analysing the production chain. The communication of the cultural landscape is supported by the design of a coordinated and some thematic routes characteristic of the territory.

The promotion of the systemic approach is boosted by the creation of a Systemic site credit and the retrain of ex abandoned buildings for creating the main point of the strategy.

The second level is more **specific** than the first one, and it is possible to **shape it depending on the territory** and its society. Indeed, the multidisciplinary team that analyses the production chain can be formed by the scientific sector, a design sector and by some connective players, but this set can be expanded with more people.

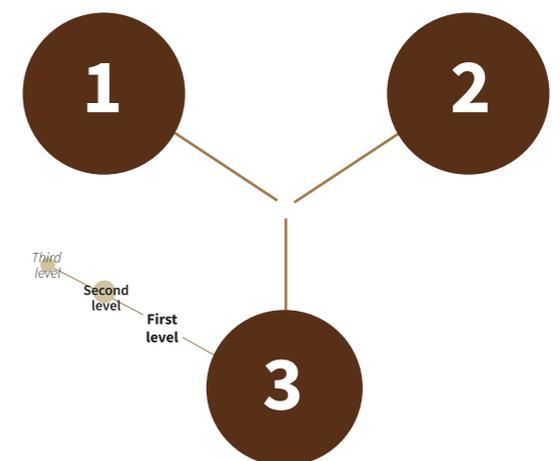
Furthermore, the coordinated image that communicates the landscape can be composed, for example, by info materials and

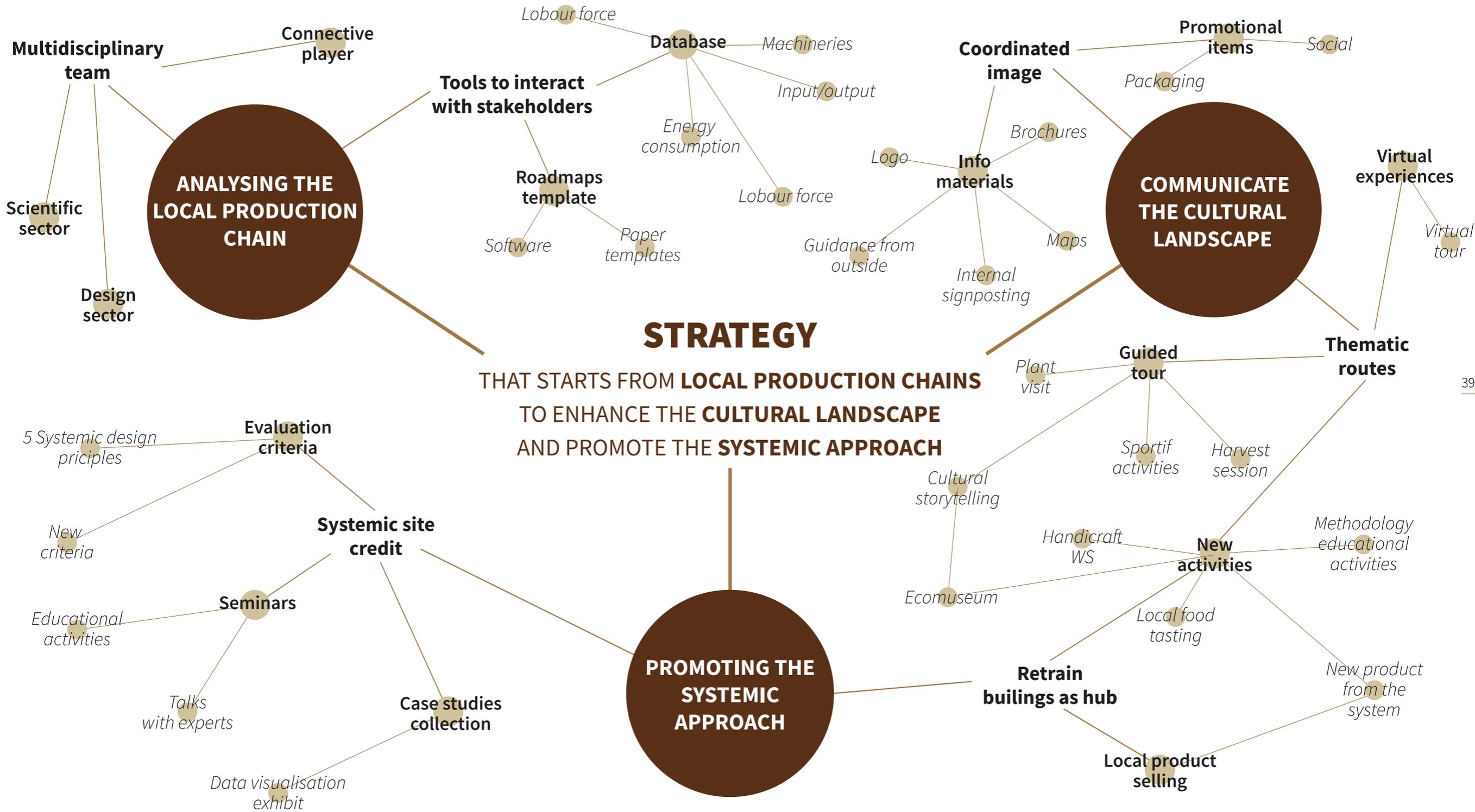
promotional items, but only the third level specifies which is the best to choose.

Finally, the **third level** shows all the **specific actions** that can be done in a territory.

For example, the second level of the new activities within the ex abandoned buildings are various: it is possible to organise handicraft workshop if the territory has a strong craftsmanship sector, to organise food local tasting with the producers, to design some educational activity within an educational farm. The third level is not generic but very specific. One activity that is suitable for a territory could not be for another one.

The the scheme on the following pages summarises the variety of wide actions the strategy offers to the cultural landscape.





7.2.2 Meta-project in Yubune and in Cella Monte

Finally, the result of the thesis is a set of meta-design proposal come from the strategy, fitted on the peculiarities of Yubune and Cella Monte cultural landscapes.

Both proposals want to answer to everyday needs of the areas. The primary needs of the tourists are to have authentic experiences in the territory, avoiding the most “commercial” one that is not authentic. They need to find information about the territory, that sometimes are difficult to find on the net. Finally, they want to meet the producers to understand better how is made the typical raw material.

The producers need to be involved in the new cultural proposals as touristic guides, and at the same time, they need to make their company identifiable.

Locals need to be involved in the new cultural proposals too. Indeed, in Japan, it is common that aged people become voluntary tourist guides. It is an excellent way of spending time for the community.

Finally, all the young people as scholars that want to discover the peculiarities of the territory need to participate in the new cultural activities.



Have **authentic experiences**
Meet the **producers**
Find **information**



Be involved in the **cultural proposal**
Make the **company identified**



Be involved in the **cultural proposal**
Rediscover the **beauty of the territory**



Participate in **educational activities**
Discover the **territory peculiarities**

YUBUNE

In Yubune, the meta-project wants to extend the functionality of the Yubune Village House, that is currently used as a ryokan. The Yubune Village House is located on the main street, very close to the tea plantation along the river. It is it is owned by the municipality.



The house is divided into three main areas: on the left the guest house that is a typical Japanese house with tatami, paper sliding doors: during night-time people can take from the closet the futon and sleep on there. During day time the space is free. Therefore, this space is suitable for handicraft workshop about Japanese culture: washi paper production, dying fabric, porcelain painting. On the right there is an open space with the cemented floor, that is suitable for welcoming the visitors. At the desk, people can find brochures about the territory and book the local activities.

On the first floor, the project of an eco-museum is the connection point among the communication of the local know-how of the tea world and new activities. It will contain all the object related to the green tea material culture: bowls, pottery, but also explain how the plant works.

Ecomuseum

History of greentea material culture



Ryocan-shared space

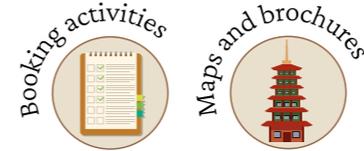
Handicraft workshop area

Ryocan-shared space

Handicraft workshop area

Welcoming point

Info about the village and the activities



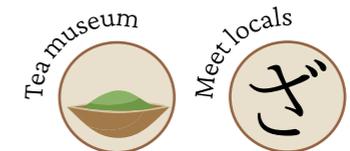
Ecomuseum

History of greentea material culture



Ryocan-shared space

Handicraft workshop area



CELLA MONTE

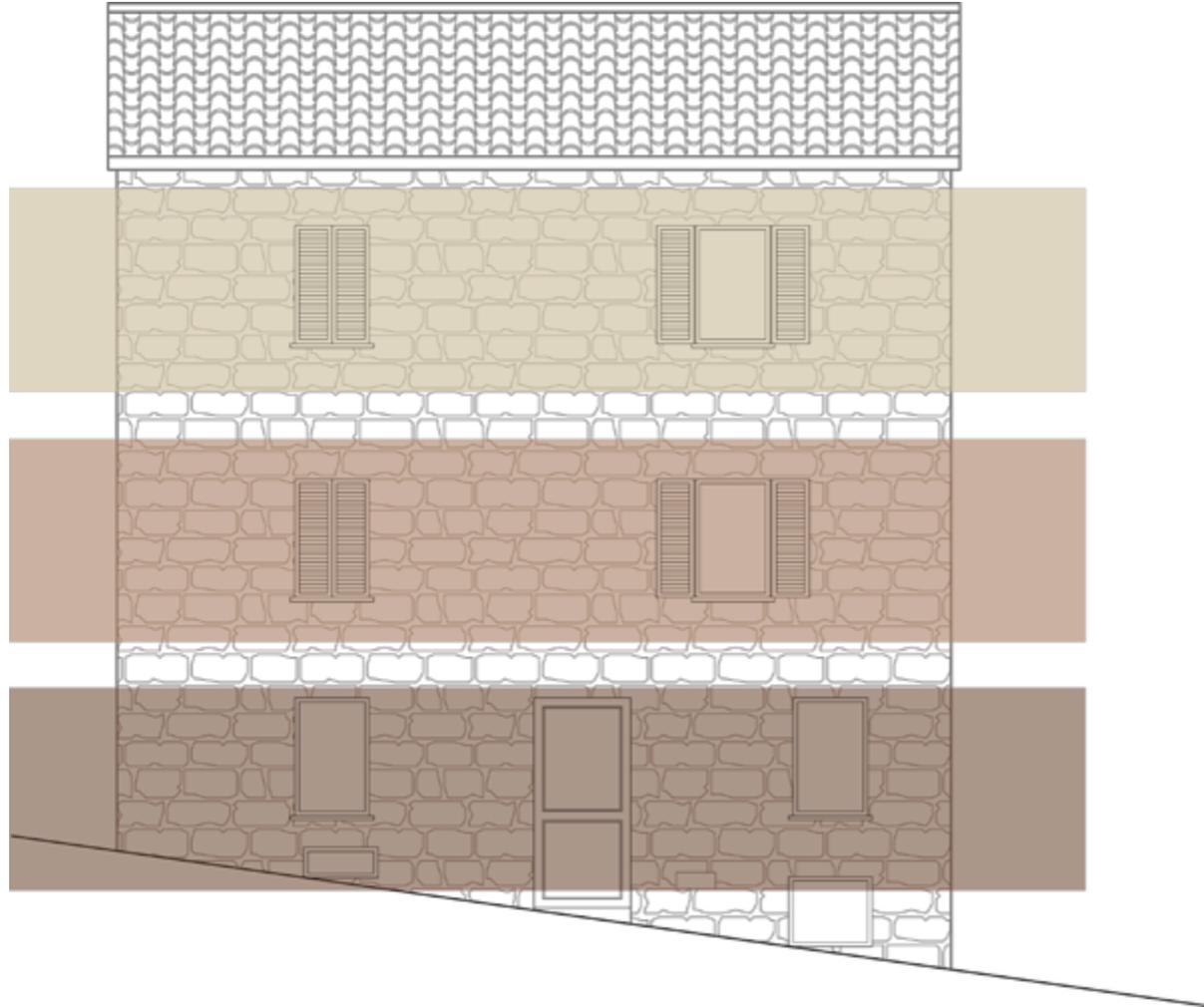
In Cella Monte, the meta-project want to promote the systemic approach through the retraining of an abandoned building to create a hub, where people can enjoy new experiences linked with the territory and wine supply chain. Palazzo Carisio, that is own by the municipality, is a suitable place because there is an already existing plan to enhance the building by the municipality.

Moreover, it is located in the city centre, and it is easily reachable from other villages by the provincial roads.



Palazzo Carisio is a three floors buildings: each floor will have different functions. The ground floor will be used as a welcoming space that will provide information about the village and the local activities. The first floor will host a retail space and a showcase for local producers with traditional products but also the new products born from the systemic project. This showcase must be sharable for ensuring all producers good visibility.

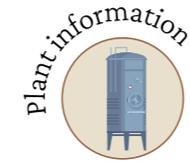
Furthermore, the first floor will hold an exhibition about all the good outcomes from the systemic approach applied in the territory. The second floor will be used as a shared place for handling the new activities provided by the systemic project. It will also be a connective space for the local producers: they can share tools and knowledge each other.



Sharing space

New activities provided by the systemic project

Connective point among local producers



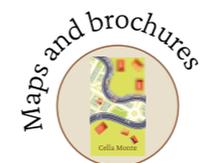
Retail

Showcase of local producers
Data visualisation of the systemic project



Welcoming point

Info about the village and the activities



References

Quotes

Bibliography

Valentino A., *Le trame del territorio*, Sperling & Kupfer Editori, 2003

Sacerdoti S., Mauro S., Gasca E., *Visitor management - Turismo, Territorio, Innovazione*, Celidi, 2011

Web references

<https://whc.unesco.org/en/culturallandscape/>

Conclusions

The answers to research questions

This work sought to illustrate our research path within the two analysed territories and to answer the research questions that we asked ourselves during the analyses.

First of all, we can affirm that it is not necessary to be native of the territory where the designer wants to research on. Indeed, having the possibility to **explore with field researches** the territory allows creating **win to win connections**. The connections among stakeholders provide the success of the project.

Nevertheless, foreign designers need some helpful tools for talking to people and create a strategic network. **Connective actors** can help during this process and overlap all the difficulties the foreign design could face up with. Given the different nationalities that can exist between designers and local actors worldwide, there are currently difficulties in interacting with different cultures and societies that slow down the planning intervention. The collaboration between PoliTo and KIT within Drinkscape program provided an excellent example of how **merging two methodologies** is precious for tackling the problem.

The **collaboration among universities** is the crucial point for designing efficiently. Indeed,

no projects can be the same because the context changes. Designing abroad needs a flexible methodology born from exchange and contamination.

The obstacles become strengths in the way that foreign designer have the potentialities of having a neutral point of view, pointing out the negative and positive aspects.

Involving the companies has not been so easy: it is necessary having **mediators** that facilitate the innovation process.

We firmly believe that the **Systemic Design approach** bring helpful outcomes into territories that represent World Heritages. Furthermore, it is necessary to the spread the systemic culture and educate local communities to be innovators for a change in management of resources which promote the territory.

Within the cultural landscape the Systemic Approach become a **cultural experience** for territorial enhancement and promotion, in terms of economic, social and environmental protection, and the final strategy aimed to draw up guidelines and intervention criteria on the territory. We believe it may be interesting to test it on other territories.

References

General

Bibliography:

- Bistagnino L., Celaschi F., Germak C., *Uomo al centro del progetto. Design per un nuovo umanesimo*. Umberto Allemandi & C., Torino, 2008, 63
- Bistagnino L., *Design sistemico, progettare per la sostenibilità produttiva e ambientale*, Bra (CN), 2011.
- Gunter P., *Economia in 3D*, ed. edizioni Ambiente 2017
- European Union Regulation 479/2008
- Celoria I., Ceresa P., *Infernot. Forme ed espressioni scavate nella Pietra da Cantoni*, ed. Ecomuseo della Pietra da Cantoni, 2005.
- Celoria I., Ceresa P., *Casòt e Casconòt. Una tradizione contadina secolare*, ed. Ecomuseo della Pietra da Cantoni, 2018.
- Crova E., *Il giardino diffuso. Alla scoperta dei giardini storici e di interesse botanico del Monferrato casalese*, ed. Ecomuseo della Pietra da Cantoni, 2009.
- Barthes R., *L'impero dei segni*, ed. Piccola Biblioteca Einaudi, 2007
- Sassone P., *La "Pietra da Cantoni" del Monferrato Casalese (AL): ipotesi di ripresa produttiva per la conservazione della tradizione edilizia locale*, art. Studio di Geoingegneria Ambientale Mineraria, 2005
- ENEA, *Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile*, 2018.
<https://www.istat.it/>
<https://dashboard.e-stat.go.jp/en/>
- Valentino A., *Le trame del territorio*, Sperling & Kupfer Editori, 2003
- Sacerdoti S., Mauro S., Gasca E., *Visitor management - Turismo, Territorio, Innovazione*, Celidi, 2011

Web references

- <https://whc.unesco.org/en/about/>
<https://whc.unesco.org/en/criteria/>
<https://japan-heritage.bunka.go.jp/en/about/index.html>
<https://ich.unesco.org/en/RL/washi-craftsmanship-of-traditional-japanese-hand-made-paper-01001>
<https://japan-heritage.bunka.go.jp/en/news/article17.html>
[https://en.wikipedia.org/wiki/Historic_Monuments_of_Ancient_Kyoto_\(Kyoto,_Uji_and_Otsu_Cities\)](https://en.wikipedia.org/wiki/Historic_Monuments_of_Ancient_Kyoto_(Kyoto,_Uji_and_Otsu_Cities))
<https://www.japan-guide.com/e/e2074.html>
<http://ochanokyoto.jp.e.aav.hp.transer.com/nihon-isan/>
<http://www.kyototourism.org/en/sightseeing-info/103.html>

- https://it.wikipedia.org/wiki/Guest_house
[https://en.wikipedia.org/wiki/Ryokan_\(inn\)](https://en.wikipedia.org/wiki/Ryokan_(inn))
<https://tresta-design.de/onepage.html#start/>
<https://ludovicacantarelli.com/about/>
<http://www.associazioneinnuva.it/it/>
<https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/terroir>
https://en.wikipedia.org/wiki/The_Most_Beautiful_Villages_in_Japan
<https://borghipiubelliditalia.it/en/the-club/>
<https://en.wikipedia.org/wiki/Terroir>
<https://www.umiteasets.com/blog/japanese-tea-terroirs.html>
https://en.wikipedia.org/wiki/I_Borghipi%C3%B9_belli_d'Italia
<https://www.castellodiuviglie.com/index.php>
<https://cinquequinti.com/en/>
<https://lacanova.net>
<http://en.tenutalapergola.it>
<https://www.oecd.org/regional/regional-policy/land-use-Japan.pdf>
https://en.wikipedia.org/wiki/Wazuka,_Kyoto
https://en.wikipedi0.org/wiki/Japanese_dish
<https://gurunavi.com/en/japanfoodie/2016/02/kansaifood>
<http://www.town.wazuka.lg.jp/cmsfiles/contents/0000002/2223/eigo.pdf>
<http://www.kyototourism.org/en/sightseeing-info/163.html>
https://en.wikipedia.org/wiki/List_of_Cultural_Properties_of_Uji
https://en.wikipedia.org/wiki/Japanese_festivals
<https://jal.japantravel.com/kyoto/wazuka-japanese-tea-town/8231>
<https://en.wikipedia.org/wiki/Omizutori>
<https://www.jetro.go.jp/en/invest/region/kyoto/>
<https://en.wikipedia.org/wiki/Piedmont>
<https://www.regione.piemonte.it/web/temi/agricoltura/promozione-qualita/prodottiagroalimentari-tradizionali-pat>
<http://www.ilcomuneinforma.it/viaggi/9563/cella-monte-la-chiesetta-e-la-collina/>
<https://jazzrefound.it/2019/>
<http://prolococellamonte.it>
<https://monferrato.bike>

<http://www.systemicfoundation.org/systemic-approach/>
<https://en.wikipedia.org/wiki/Wabi-sabi>
<https://en.m.wikipedia.org/wiki/Urasenke>
<https://en.wikipedia.org/wiki/Sukiya-zukuri>
<https://en.wikipedia.org/wiki/Roji>
<https://www.ilpuntocoldiretti.it/attualita/lavoro/con-il-decreto-flussi-via-libera-a-18milalavoratori-stranieri/>
<https://www.nippon.com/en/views/b05204/shimenawa-the-sacred-rope.html>
<https://www.tuttitalia.it/piemonte/24-alessandria/statistiche/>
<https://whc.unesco.org/en/culturallandscape/>

Tea

Bibliography

MAFF, Ministry of Agriculture, Forestry and Fisheries, *Current Outlook of Japanese Tea*, 2017.
 ITO EN Company, *Integrated Report*, English version, 2018.
 Ashardiono F., *Tea Cultivation in Uji Area - Drawing from the Experience of Winegrape Terroirs.*, PhD thesis of Ritsumeikan University, 2016.
 Francesco M., Tadahiko H., Yoshikatsu H., *Le case del tè. Gli spazi del vuoto e dell'inatteso*, Electa, 2009
 Sen, Soshitsu. *Chado: The Japanese Way of Tea*. Masuo Yamaguchi, trans. New York, Tokyo, Kyoto: Weatherhill, Tan-
 kosha, (4th printing), 1979, 1998 (4th printing)
 Tollini A., *La cultura del Tè in Giappone e la ricerca della perfezione*, ed. Piccola Biblioteca Einaudi Filosofia, Giulio Einaudi editore s.p.a., Torino, 2014
 Montagnana F., Tadahiko H., Yoshikatsu H., *Le case del tè. Gli spazi del vuoto e dell'inatteso*, Electa, 2009
 Asian Art Museum, *Experience Chanoyu: The Japanese Art of Tea*, ed. Asian Education, 2007.

Web references

<http://www.rojicha.com/our-teas/>
<https://japaneseteasommelier.wordpress.com/2016/09/26/kyoto-uji-the-land-of-yamashiro-anhistory-of-tea-in-japan/>
<https://japaneseteasommelier.wordpress.com>

<https://medium.com/art-of-tea>
<https://www.maff.go.jp/e/policies/standard/jas/>
<https://www.maff.go.jp/e/policies/standard/jas/specific/organic.html>
<https://okinawa.stripes.com/travel/uji-japans-green-tea-capital>
https://en.wikipedia.org/wiki/History_of_tea_in_Japan
https://en.wikipedia.org/wiki/Sen_no_Riky%C5%AB
<http://japanese-tea-ceremony.net/utensils.html>
<https://www.myjapanesegreentea.com/japanese-green-tea-in-flux>
<https://www.nippon.com/en/japan-data/h00390/bottled-green-tea-overtaking-home-brewed-asjapan%E2%80%99s-favored-drink.html>
<https://www.patternz.jp/japanese-tea-house-architecture/>
<https://yunomi.life/blogs/japanese-tea-guide/how-to-judge-the-quality-of-green-tea>
<http://www.japanese-tea-ceremony.net/>
<https://tokyo-matcha-selection.com/blog/teishu-and-the-way-of-tea-part-1/>
<http://www.o-cha.net/english/association/jpgreentea/pdf/14.pdf>
<https://www.hibiki-an.com/contents.php/cnID/9>
<https://www.dmatcha.com/our-farm>
<https://tea.fandom.com/wiki/Aracha>
<https://en.m.wikipedia.org/wiki/Aracha>
<https://www.hibiki-an.com/contents.php/cnID/9>
<https://teaepicure.com/tea-leaves-oxidation/>
<https://www.myjapanesegreentea.com/aracha-processing>

Wine

Bibliography:

ICOMOS, International Scientific Committee on Cultural Landscapes, *Vineyard Landscape of Langhe-Roero and Monferrato (Italy)*. No 1390 rev., 2013.
 Comaschi G. with Associazione per il Patrimonio dei Paesaggi Vitivinicoli, *Valorizzare un Patrimonio UNESCO. Il primo progetto finanziato con la Legge 77/2006 nei Paesaggi Vitivinicoli del Piemonte*, 2016.
 Romani R. for AIS – Associazione Italiana Sommelier, *Il mondo del Sommelier*, Associazione Italiana Sommeliers, Milano, ed. 2016.
 Romani Rossella for AIS – Associazione Italiana Sommelier, *La Degustazione*, ed.

Associazione Italiana Sommeliers, Milano, ed. 2016.

Novello V., *Filiera vitivinicola: valorizzare residui e sottoprodotti*, ed. Edizioni L'Informatore Agrario, 2015.

Finesso A., *Valorizzazione di scarti vinicoli per il recupero di prodotti ad alto valore aggiunto ed energia*, Ca' Foscari University MSc Thesis, 2015.

Corzani V., *Le aziende vitivinicole: da "machines à produire" a elementi di attrazione nel paesaggio. Proposte e criteri progettuali per l'efficienza funzionale e la qualità architettonica ed ambientale delle strutture ed infrastrutture della trasformazione enologica.*, PhD Thesis, Università di Bologna, 2012

Duso C., Girolami V., *Lotta integrata in viticoltura*, ed Centro regionale I.R.I.P.A. Quadrifoglio.

Magarò E., *I sottoprodotti delle industrie vinicole*, Istituto d'Istruzione Superiore "G.Cantoni" Treviglio (Bergamo), 2012.

Gazzetta Ufficiale n. 302 del 28 dicembre 2016, Testo Unico del Vino italiano, 2016.

Creo C., Ansanelli G., Buttol P., Chiavetta C., Cortesi S., Cutaia L., Nobili P., Sposato P., *Uso efficiente delle risorse nelle imprese vitivinicole.*

Web references

<https://www.paesaggivitivinicoli.it/patrimonio/il-monferrato-degli-infernot/>

<http://www.wimubarolo.it>

<http://www.monferratopaesaggi.org/>

<https://shop.winefolly.com>

<http://www.astemiapentita.it/en/>

http://www.enosis.it/en/14/La_creazione.html?id=

<https://www.heartofthedesert.com/the-cycle-of-a-wine-grape/>

https://cinquequinti.com/wp-content/uploads/2019/07/EN_General_5_5_presentation_sp.pdf

<https://perlagesuite.com/en/project/screw/>

