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1. Agenda

Location address: Marseille, City Center, 2 Rue Henri Barbusse, 13001 Marseille

Table 1. Agenda of the first day of the IWS

DAY 1 – 7th March 2019	
9:00	Registration of participants – Welcome coffee
9:30	<u>Presentation of INCREDIBLE project</u> Objectives and agenda of the whole project
9:45	<u>Introduction</u> Context, objectives and agenda of the interregional workshop
Session 1	Processing quality to ensure good products
10:00	<u>The technical points to be addressed for chestnut</u> (Daniel Mathieu) Presentation and discussion
10:20	<u>Certification Schemes for the chestnut chain value. Guarantee label, chestnut of the Bierzo</u> (Pablo Linares Barreal) Presentation and discussion
10:50	<u>Denomination of origin – PDO Châtaigne d’Ardèche</u> (Sébastien Debellut) Presentation and discussion
11:20	<u>Towards regularization of the primary production</u> (Alvaro Picardo Nieto) Presentation and discussion
11:40	Preparation of round tables : Questions and objectives
12:00	Lunch
13:30	Building and implementing standards and food labels. Round Table : sharing European experiences <ul style="list-style-type: none"> • Private stakeholders • Politics • Interbranch organism
15:00	Coffee break
Session 2	New chestnut products
15:15	<u>Design and implementation of a new production model to chestnut, for rural development in the Bierzo</u> (Roberto Rubio Gutiérrez) Presentation and discussion – Producer
15:35	From the idea to the economic development Round table : sharing European experiences <ul style="list-style-type: none"> • Private stakeholders • Interbranch organisms • Politics
17:00	<u>An experience from Corsica – Dolce Corsi</u> (Carine Franchi cancelled, so M. Baudriller-Cacaud made the presentation) Presentation and discussion – Private stakeholder or GRPTCMC
17:30	End of work : Presentation of results

Table 2. Agenda of the second day of the IWS (field trip)

DAY 2 – FIELD TRIP	
8:30	Welcome and registration Meeting point: Rue Commandant Mages / Boulevard Montricher intersection
8:45	Presentation of Incredible project – Day program Partners, objectives and agenda of the day
9:00	Departure for the field trip
10:45	Visit of chestnut orchard and Arbutus Unedo forest in Collobrières <ul style="list-style-type: none"> • Harvesting methods • Discussion about the protected denomination of origin
12:30	Lunch
14:30	Visit of Brewery “Carteron” in Hyères <ul style="list-style-type: none"> • Development strategy • Implementation process • Label • Degustation
15:45	Departure from Hyères
17:30	Arrival to Marseille

2. iNet themes and knowledge gaps

The following knowledge gaps emerged from the Scoping Seminar, held in Coruche, Portugal, on June 2018:

Enhanced production from forests and orchards:

- How can smallholder and small forest owners get fair access to markets (producers groups, coops)?
- Are new, improved genetic resources available for deployment?
- How can illegal harvesting, thefts and black market be banned?

Pests, diseases & climate change:

- Are any integrated pest management schemes being developed for chestnut gall wasp and Leptoglossus seed bug?
- Which new biotic threats are awaiting forest nuts and berries around the corner?
- Will Climate change worsen the resilience of the forests and trees?
- Will geographical distribution ranges change (assisted migration: rearing edges and introduction to new areas)?

Processing quality & standards:

- Which are Good practices guidelines in post-harvesting in chestnuts / Mediterranean pine nut kernels?
- How can we get implemented high quality standards for post-harvesting, controlled and certified?
- ...and "can we make money from this?" -Do consumers show willingness to pay for quality?

Food labels, product identity, regional brands:

- Which certification schemes (SFM, organic, fairWild...) or labels are applicable on wild-collected nuts & berries?
- How can ethnographic and cultural heritage be integrated in the product identity?
- How can we bring chestnut, and Mediterranean pine nut, as clearly identified and easily recognized items into the "standard consumers" basket/diet?

New products:

- Which new product types can be developed from chestnut, or wild berries?

Each theme will be treated in a specific Interregional Workshop:

Enhanced production from forests and orchards	> IW in Tunis, on November 13/14, 2019,
Pests, diseases & climate change	> IW in Madrid, on June 12-14, 2019,
Processing quality & standards	> IW in Marseille, on March 7/8, 2019,
Food labels, product identity, regional brands	> IW in Marseille, on March 7/8, 2019
New products	> IW in Marseille, on March 7/8, 2019

The cross cutting seminar will be dedicated to cover knowledge spread & communication gaps.

3. Foreword

The interregional Workshop was principally focused on researching ways to combine quality products and economic development for the nuts and berries sector, especially chestnuts, pine nuts and strawberry trees berries. Part of the production come from informal European market, with no structure, subject to a strong competition from international market, especially China which is very aggressive. A concertation between all the stakeholders is essential to organize the sector efficiently.

The first day of the workshop was devoted to consult and create an interaction between the different actors of the sector, namely producer, union of producers, processor, inter-professional or environmental associations, institutional actors involved in environment or in agriculture. The seminar was held during an influenza epidemic, and unfortunately two speakers failed.

The second day was spent visiting a chestnut forest in the Var Department. This one allowed to discover an example of a recovered chestnut forest, submitted to climatic conditions increasingly dry. Then, participants visited a brewery which has developed a strawberry tree beer, purchasing fruits directly from local suppliers. It's a good advertising for the brewery to indicate it deals with local production, and the forest owners make benefits with their production, so we can say it's a good partnership.

4. Workshop

4.1. Content

The interregional workshop started with the presentation of the INCREDIBLE network by Mister Sven MUTKE, from the Spanish National Institute for Agricultural and Food Research and Technology, coordinator of the Wild nuts & berries iNet.

Then, Mister Haïmad BAUDRILLER-CACAUD, forest engineer for the CRPF in Provence-Alpes-Côte d'Azur and the French coordinator of the Wild nuts and berries iNet, carried on by presenting the targets of this workshop.

He gave the floor to the first speaker, Mister Daniel MATHIEU, invited today for several reasons:

1. Daniel MATHIEU, President of the French Chestnut Producer's Union / Director of the Verfeuille processing company / Chestnut producer in the Cevennes department

Presentation "The Big Chestnut Tree – a production renewal"

After presenting the European chestnut tree's characteristics, Mister MATHIEU exposed the chestnut's selection criteria: easy to peel, proper conservation and a good taste (sweet, tender, friable). It's principally used fresh, but this market is declining. However, the market shares for processed chestnut's products are on the rise. The product is present in the European and international market. The French production declined since 1870, and French processing companies need to import about 20 000 tonnes of raw material. Others European producers are Italy, Portugal, Spain, Greece and Turkey, which production is increasing. China is an important competitor in the international market. Its history permitted an important chestnut tree-planting program, and this political intervention explains the major economic development of the sector. China acquired chestnut knowledge and know-how in Italy. However, they don't have the same

chestnut species, and they have more or less similar prices than European market, so it tends to limit the market invasion by the Chinese's actors.

Many certifications are acquired in France, like AOP "flour" in Corsica, PDO Sweet chestnut of Ardèche, PDO chestnut of Cevènnnes or GPI chestnut of Périgord.

The decreasing French production is an important challenge, partly due to climate change and news pests and diseases affections. Disappearances of chestnut's orchard and involved know-how are complicating the adaptation to these challenges, and moreover it increases the production deficit. Because of this lack of raw material, some processing companies decide to develop only "simple" products, like jam, chestnut can or beer. But the consumer's renewed interest, compiled with the facilitation and the improvement of the harvesting process allowed by the creation of new tools, are constituting a favourable prospect for the chestnut market.

2. Pablo LINARES, Technical Director of fruits quality labels in Castilla y León (Spain) / Director of a farmer association from the Bierzo (Spain)

Presentation "Certification schemes for the chestnut value chain"

Many kinds of forest certification do exists, such as PEFC (The Program for the Endorsement of Forest Certification) or FSC (The Forest Stewardship Council), which promote sustainable and responsible management of forest world and allowed to a product a sort of advertising.

Organic certifications, responding to European rules, has known an important development in Spain, with approximately 18 % of the national production concerned.

Others European quality schemes do exist, whose goal is to protect specific products name to promote their characteristics, involving their geographical origin and traditional know-how. PDO (Protected designation of origin) is one of them. Every part of the production, processing and preparation process must take place in the specific region. PGI (Protected Geographical Indication) emphasises the relationship between the specific geographic region and the name of the product, where a particular quality, reputation or others characteristics are essentially attributable to its geographical origin. But it's not necessary for all the stages of production to take place in the region.

The label "mountain products" is submitted to the European rules and highlight specificities of a product made in mountain areas, with difficult natural conditions.

The program called "Global G.A.P" (Good Agricultural Practices) is an internationally known guarantee of agricultural quality, adapted to a large range of products. Others private certification schemes do exist, like BRC Global Standard, IFS Food...

Approximately 18 European certifications do exist. So it's important to identify which one is the most adapted to the product that must be certified, according to the production or processing zones, consumers and industries interests...

In Spain, the "Guarantee Label" exists, protecting the products in the national territory. It requires a favourable report from the administration based on studies of characterization and differentiation of the product.

In France, the Parcs Naturels Régionaux can attribute the « Parc » brand to companies established on their territories, responding to many criteria, like respect of the Parc's values, traceability, or response to territorial issues...

3. Sebastien DEBELLUT, Animator of the Inter-professional organization of the Sweet chestnut of Ardèche

Presentation “PDO Sweet chestnut of Ardèche”

The Sweet chestnut of Ardèche's certification process began in 1998, and ended in 2006 for the AOC (Appellation of Controlled Origin), in 2014 for the PDO. The certification was requested to value the typicality of the Sweet chestnut of Ardèche, to protect its traditional know-how and to keep an economic benefit to its production (which is declining), and finally to avoid the overuse of the “Ardèche” origin. Cultivation of chestnuts in Ardèche enable the remaining of some agricultural holdings established in disadvantaged areas, because it represent between 20% to 80% of their turnover.

Every segment of the supply chain is represented on the territory, producers, processors and shippers. The Union principally represent producers, and the Sweet chestnut of Ardèche inter-professional committee links every downstream actors with an equal representation between: producers, processing actors and shippers.

This structuration, in addition to improve communication between all the members, permitted the obtainment of public funding, from the Ardèche department, the “Region” and from Europe, used to modernize the production, to develop processing shops for smallhold producers, and finally to recover abandoned chestnut groves to respond to the increasing demand of processors. This committee is financed by producer's memberships (50€ by producer + 0.18 € by tree) and downstream actors' membership (on the basis of the volumes sold)

We can see a deficit of the production, because of the pests and diseases (ink disease, gall wasp) and the climate warming. The fresh chestnut's market is increasingly complicated: reduction of the consumption, complex sanitary quality managing, and competition with large caliber variety...

The PDO certification in 2014 allowed to avoid the overuse of the “Ardèche origin”. Then, processors concentrated their supply on the territory of Ardèche. Even if the fresh chestnut price hasn't been revalorized, and the sales didn't increased, there has been a very positive impact on the price of the chestnut used for processed products (the price paid to producers have doubled in 10 years).

The chestnut biodiversity in Ardèche, with 65 varieties, gives cause to hope an adaptation to the climate change. Otherwise, the certification could be restrictive because PDO certification doesn't allow the using of another variety, except as a rootstock.

Despite the creation of «EuroChestnut», a European chestnut sector's network, financing requests submitted to solve phytosanitary affections are not accepted.

The connections among others European chestnut actors, especially through the INCREDIBLE network, could answer some current gaps, namely:

- To discover a rootstock resilient to ink disease and to climate warming,
- To identify orchard treatments or post-harvest process that allows to avoid worms and decay,
- Obtain funding to tackle the current phytosanitary problems.

4. Álvaro PICARDO, Junta de Castilla y León (Spain)

Presentation “Toward regularization of the primary production of wild nuts”.

Many wild edible product markets do exist around the Mediterranean, namely for mushrooms, truffles, pine nuts or chestnuts, berries from *Sorbus domestica* and *Arbutus unedo*, or *Pinus halepensis* pine nuts (*zgougou*) in Tunisia. Their supply chain is principally informal but functional, well developed in certain areas. The local suppliers are often not fulltime professionals because of temporality of the activity, and the low incomes generated, but value chains rely on trade and processors professional.

Illegal market and thefts are increasing when local supply chains are not developed, and it's problematic for the proper functioning of the market. In Spain, it's estimated that 40 % of total incomes come from informal sector, undeclared so evading income tax.

Which issues can be found? According to Mr. PICARDO, it's crucial to consolidate or create supply chains relying on local suppliers, respecting existing rights (difficulties with private properties for mushrooms sector), clarifying and simplifying rules and with minimum disturbance. It's also necessary to promote professionalization by empowering forest owners, creating high quality rural jobs, promoting economic efficiency, and accepting amateurs or self-consumption whenever they respect the rules.

To consolidate this raw material supply chain, we should define limits to self-consumption (it was made for honey or pine nuts in Portugal), establish production thresholds between professionals and amateurs, and finally define and verify the procedures to guarantee traceability.

Creating good practices sector manuals is a good way to define, implement and verify procedures of traceability.

European rules do exist for food products, like wild nuts, but not always respected because it's not adapted for non-professional. In 2018, Italy has approved a specific fiscal regime Law 145-2018 of December, 30th, 2018) for all occasional producers for all NWFP (New Wild Forest Products). In Portugal, a specific regime does exist since 2015 for pine nuts (decreto-lei 77-2015) and resin production (decreto-lei 181/2015)

Quality schemes are a good way to regularize the market, and when sectors are relatively mature, it's desirable to create an Interprofessional Organization to obtain a harmonious development of the market, where the needs of every sector's actors are understood.

To conclude, to develop the wild nuts production sector, we need to regularize its operations, to consolidate the existing supply chains, to promote professionalization, to define limits for self consumption and limits for purchase between professionals and occasional producers, to adapt taxation for occasional operators. For that, it's necessary to establish traceability procedures and register operators. Quality schemes and interprofessional organizations are valuable tools to accomplish it and to organize primary producers.

5. Roberto RUBIO GUTIERREZ, CESEFOR (Spain)

Presentation “Design and implementation of a new production model to chestnut, for rural development in the Bierzo”

In Spain, before this project was effective, the surface of the chestnut habitat in the Bierzo was about 19 000 ha, and chestnut production represented approximately 8 000 Tn. There were many small properties, managed by non-professional, and the sector was principally informal. Serious phytosanitary affections by chestnut blight (*Cryphonectria parasitica* has infected more than 90% of the surface) and others affections (chestnut gall wasp...) caused a deficit of the chestnut production.

In 2009, regional government of Castilla y Leon impulsed the creation of a sectorial committee of the chestnut, to organize the production process with whole actors, cluster activities, invest in machinery and tackle phytosanitary affections. They expected a reduction of pest and diseases affections in chestnut orchards, an increasing of production, a valorization of the product and an increasing of the multipurpose productive surface.

This committee designs a strategic plan with 3 strategic lines:

- Production
- Recovery
- Participation

The main objective was to guarantee “the durability of the chestnut tree as a social, economic and landscape element”.

The production strategic line establishes to change the production model and organize the productive system because the smallholding was a problem for the threats solution.

This new model must be participated by all the chestnut stakeholders.

It was organised with 3 levels:

- Clustering of the actors (cooperative society, mercantile or agrarian companies and associations)
- Assure marketing of products,
- Plan services companies, organize cultural and patrimonial activities.

First, it was necessary to inform owners of the constitution of the association. Once associated, they had to prepare the fall collection campaign, establish legal tools for its correct and legal execution and prepare grouping actions for treatment of diseases and pests. Finally, it was necessary to hire personnel for the campaign and start the work. The association is managed by a board of Directors in which all the owners of each village are represented. The chestnut sectorial committee operate as a technical advisory.

By following these steps, 3 associations have yet been created, and others will soon be created too. In 2010, these associations counted 12 members with below 20 000 € of annual turnover. In 2018, there is much than 180 partners with an annual turnover of more than 200 000 €.

They are private associations, which don't make benefits. They purchase products to owners and then sell them centrally.

To conclude, sectorial structuration in the county is the only way to preserve chestnut, and this generates employment. The induced value can be three times the value of the primary production.

6. ROUND TABLE:

Subsequently, stakeholders divided themselves into 3 groups, each of 3 or 4 people, with the goal to discuss about topics defined in the scoping seminar and presented on introduction.

After 20 minutes of introspection, each stakeholder presented to its group its reflexions on the topics. Then group had an exchange on these reflexions for about an hour, identified the most important ones, and finally a rapporteur of each group presented them to the plenary.

There is an expectation for a more important European and national structuration of chestnut and pine nuts markets, with the hope that INCREDIBLE project can fulfil this need. Stakeholders notice a communication gap on the European market, and there is an important need to communicate on difficulties linked to research.

A European structuration could help European countries with an important production, like Portugal or Spain, to develop themselves on market with a lower production, to move toward a mutualisation. However, this structuration should integrate local know-how, with local identities, to make the difference with industrial actors which guarantee a sanitary quality, but they don't obtain the same taste quality than artisan's products.

The obtainment of labels has a cost, which can be disadvantageous and discouraging for small hold companies. Clustering, associations or cooperation seem to be a good solution to spread the costs, and the creation of interprofessional organizations is crucial to enable the communication between the actors. It may convince industrial companies to participate to the rise of the sector.

To facilitate the organisation of the productive chain, to regularize informal sector but also formalize smallholders, it would be interesting to identify principal steps to create cooperatives or productive associations, and define a ready-to-implement way.

Advantages of a large-scale certification was asked. If all products are certified, actors won't benefit of the same advertising. However, certification will still enable a better management of the productive chain, and a better quality for products.

There are many labels, and it can affect exposure, or marketing rated to. The idea was raised to homogenize much more these labels at European level, as it was done for PDO and PGI, and to promote them to every scales, European, national and local.

The obligation to mention raw materials origins for processed products could contribute to improve products traceability.

The idea to create production complementarities for small size markets is interesting. For example between beekeepers, fruit tree producers needing pollination, and breeders practicing pastoralism. But, because each production system is different, it's important to have first of all a reflection on the way to establish it.

Bring together European practices is possible, without being in a competitive system, neither jeopardize to every country markets. Wine or olive oil markets for example, benefits from PDO certifications, but specificities from each territory do subsist.

Consumer education is crucial to enable a product development, and to integrate it in consumer's habits. Marketing and advertising can be a good way to obtain this result. Next to the proliferation of cooking programs broadcasts, we could note a growing sensitivity for high-end foods, and for cook in general way.

Stakeholders could notice throughout their experiences a lack of respect for existing rules by few actors, like the disrespect of private property for the picking of mushrooms for example, but it's also the case of the informal sector. An issue may lie, again, on an existing rules education of the actors, but also in a more systematic intervention of public authorities.

Local producer must take advantage of the increasing of internet sales, which offers a better exposure and high the number of potential consumers. For the case of non-perishable products, this can even be expanded to European market.

Another round table was planned, but for timing reasons, it was decided to provide more time to the first round table, and to cancel the second one.

7. Presentation: “An experience from Corsica”

Due to the absence of Mrs. Carine FRANCHI, from the Regional Group of Marrons and Chestnuts Producers and Processors from Corsica, the presentation of the “Dolci Corsi” project was assured by Mister BAUDRILLER-CACAUD.

The Corse chestnut groves do possess an important varieties potential (about fifty), and a large range of processed products which can be valorised.

In the 1990s, to maximize the valorisation of chestnuts with a “marron” quality, the “marron glacé” production seems to be a diversification way to follow for Corsica's sector.

In this way, a common development strategy was established. It was constituted by:

- The GRPTCMC (The Regional Group of Marrons and Chestnuts Producers and Processors from Corsica),
- The CRITT (The Innovation and Technology transfer Regional Centre),
- Chambers of Agriculture from South Corsica and from Upper Corsica, development organism,
- The CFPA YOLANDA from Ajaccio, training organism,
- CREAL company, represented by M. BRETON, confectioner with an international reputation.

After they identify species which respect candying criteria, an experiment of processing marrons was successful.

Thanks to this success, promotion of “marron glacé from Corsica” has the goal to commercialize a specific and regional product related to natural products and cultural heritage, a terroir. The commercialization of this product is an advantage for a chestnut farmer because it's a luxury product, with an important added value.

To guarantee this high quality production, the label “Dolci Corsi” was created. It defines the harvesting, the processing, the commercialization and the control procedures.

Products which match with this label have a specific market share on national and international markets. “Dolci Corsi”, coming from a know-how transfer, adapted to island varieties,

characterized by parameters such as sugar content, texture, brightness, calibre, will transmit the image of an identity product linked to Corsica’s heritage. Thanks to this label, the chestnut sector from Corsica has been reinforced and valorised by strong added value products.

“Dolci Corsi” is also the prefiguration of the PDO flour of chestnuts from Corsica.

4.2. Take-home message

- # 1 – Actors clustering enable the sector to be developed and create employment,
- # 2 – Illegal market destroy supply chain, and by the same time the entire market,
- # 3 – It’s necessary to have a reflection on rules and fiscality, European and national adapted to whole actors, small producers too, so they can be accepted and respected,
- # 4 – Certification enable to gain additional market shares, to have a better traceability of products, to have an access on the international market,
- # 5 – It’s seems to be important to integrate chestnut and pine nuts into consumers habits, to increase fresh chestnut demand.

5. Field trip

5.1. Overview

Table 3 Field trip overview.

Where	Collobrières then Hyères – in Var (83) – France
What	Visit of a chestnut forest (Collobrières) in the morning, Discovery of Carteron’s brewery producing strawberry beer (Hyères) in the afternoon.
Who	Fabien TAMBOLONI, chestnuts producer and processor in Var, France. Thomas CARTERON, brewery owner, Romain BARRET, animator of the Union of Chestnut Producers from Var (SPCV), Haïmad BAUDRILLER-CACAUD, Forest engineer for CRPF.

5.2. Content

Reception in Collobrière’s village and visit of the restored private chestnut forest.

Mister Fabien TAMBOLONI explained he made severe cuts to restore this chestnuts forest, to enable regeneration. According to him, severe cuts are efficient only if trees aren’t declining. The restoration made on visited parcels is very conclusive. A pruning work was also realized to select the best offshoots.

The biggest difficulties encountered were repeated droughts, impacting directly chestnuts production and trees decline. Those traditional mountain chestnuts orchards would need the same irrigation as the plain chestnuts orchards. Maybe it’s necessary to adapt these spaces, to make them more agrarian.

Producers from Var emphasized their local chestnut quality, called “Marrouge”, which is naturally very sweet. A chestnut cream tasting made by Mister TAMBONOLI convinced us it was true. This chestnut producer and processor still uses the processor’s tools from the retired previous owners. He wants to keep this processor’s traditional know-how.

However, facing to climate change which is jeopardizing forest stands, forest actors agree it's necessary that research actors propose solutions to face it. Concomitantly, the genetic mix isn't made by the field actors who exploit renovated mature trees. A regeneration of forest stands, guided by scientist actors seems to be a way ahead. The SPCV is testing the use of an adapted rootstock with a "Marrouge" graft.

From an economic point of view, the current low production caused a sharp increase of the prices. So small processors like Mister TAMBOLONI couldn't purchase raw material they needed to reach the good break-even point. This local constraint compels him to look for more profitable markets. He finally sold its products in Switzerland for a price twice as high. The opening to world markets for processed products was a real windfall.

Some markets looks for the highest quality and a strong identity. Designation of origins allows this recognition. However, costs involved to obtain a certification must be measured. A consequence of a too high certification cost would be the market capture by industrial companies, which can invest at the expense of small organizations.

Designation of origin certifications also permit to promote a product in an international competition market. Forest and agricultural stakeholders mentioned that a designation of origin should allow evolutions to guide changes in the future, for example climate change.

Carteron's brewery visit, Hyères:

This visit proved the relevance for various development and economic actors to work together to develop a territory, an economy.

Thanks to the increasing power of artisanal beer in the beverage market, which allows to the beer market to gain shares, Carteron's brewery developed its company by proposing quality products integrated into the terroir where the brewery is settled.

So, to help development of the Massif des Maures and from Esterel's one, the idea to product a beer with fruits from strawberry tree (honey and syrup) emerged inside the Forêt Modèle association. This nonvaluated fruit could be valorised with the development of that kind of products. After few research made by economic actors on the territory, Carteron's brewery wanted to participate to the project. It's necessary to harvest 150 kg of fruits of strawberry tree to product 2 000 litres of beer.

The brewery can gain market shares because it benefits from an additional advertising. This one is generated by the dealing with local production, and the using of local products. By the same time, local owners of the territory make benefits with their forest production, so we can say it's a good partnership

The SPCV wants to realise a chestnut beer to valorise this forest product from the territory. The chestnut locality, potentially fitted with a designation of origin certification, can guarantee market shares, at least on the local market. Especially because cost from the Var are very touristic.

5.3. Take-home message

- # 1 - Climate change, combined to pests and diseases directly impact chestnut production, and contribute to speed up the decline of trees. It's crucial that research continue to be done on this subject.

- # 2 – Certification can be restrictive for small structures (cost of certification, long and hard process). Costs involved to obtain a certification must be measured, to avoid the “capture” of the market by industrial companies.
- # 3 – It’s desirable to keep some flexibility in the certification schemes, regarding climate warming and droughts for example.
- # 4 – The Carteron’s brewery example prove that it’s relevant for various development and economic actors to work together with innovative products.
- # 5 – A synergy can be generated between local producers and local processors, by introducing a processed product on a market local, national or international.
- # 6 – An accessory but important result: beer from Carteron’s brewery is delicious!

6. Conclusions

6.1. Knowledge gaps and themes

This seminar enabled:

- To realize the importance of clustering and structuration between the actors, in Spain like in France,
- To identify research themes that seems to be primary for stakeholders, namely adaptation to climate warming to find an issue to the production deficit,
- The stakeholders to express that it’s necessary for industries to clarify their position, and to participate much more to develop the sector. Industries take advantage of informal market because prices are lower. It’s crucial to include all the actors in structuration dialogue to formalize the market.
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6.2. Potential solutions

Current domestic chestnut production is not enough to respond to the growing needs of processors. The linking with others European chestnut actors, specifically within the INCREDIBLE network, could be an issue for current challenges (so enable to increase production), namely:

- Finding a rootstock resilient to ink disease and adapted to climate warming,
- Identify post-harvest process that allows to avoid worms and decay,
- Obtain funding to tackle the current phytosanitary problems. Despite the creation a European chestnut sector’s network, financing requests submitted to solve phytosanitary affections were not conclusive.

INCREDIBLE project can guide the European structuration of the actors, without being necessary bearer of this process.

To facilitate informal sector regularization, it would be useful to identify few key steps to define a ready-to-implement way.