

CASE STUDY

"BERGAMOT, NICHE AND ORGANIC PRODUCT" (ITALY)

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1 Introduction: What is the case study about?

Bergamot is a high-specific species of citrus cultivation, diffused mainly in the Reggio Calabria Province, in the most coastal part of the area. Uniqueness of this production derives from the following characteristics:

- More than 90% of the world production is coming from the Reggio Calabria province in southern Italy, that is from the study area;
- It is used almost exclusively as a fragrance ingredient. Bergamot is a significant ingredient for the perfume industry where it is used in more than 65% of women's perfumes and almost half of men's fragrances. However, a small portion of the production is used as a flavouring and in the pharmaceutical and cosmetics industries;
- The essential oil produced in this area is characterised by 354 diverse fragrance components which makes the oil of high quality for the perfume industry, such components are unavailable in other production areas;
- The cultivation of bergamot and the high quality of the essential oil is due to the specific climatic conditions of the area (temperate climate even in wintertime, mitigating action of the sea, low difference in temperature between day and night, etc.). There is a stretch of land approximately 120 kilometres in length that is one of the only places in the world where Bergamot trees grow this kind of high quality fruit, rich with desirable essential oil;
- The cultivation was introduced in this area for the first time in 1740 and since then it was rooted in the cultural identity of population living in the area.

The socio-economic characteristics of bergamot farming system has been studied in depth in recent years (Nesci et al, 2005; Ciani et al, 2014). There are about 500 farms specialized in the bergamot, few of them have a big size, most of farms are of small and very small size. More than 90% of production is sold on the market. From our interviews, 5 ha is the minimum size to get a sufficient family income. Given the prevalence of small farms, part-time farming is largely widespread. This area is characterised by the lack of employment opportunities, which caused the continuous process of outmigration to North of Italy and other countries. This process has still continued in the last decade.

The ecological context is extremely fragile, devastated by the disordered urbanization and hydro-geological erosion of land, both in the more internal areas and in the coastal area. In this context the bergamot cultivation is a way to maintain **landscape** (bergamot is part of the image and identity of the area), **biodiversity and rural vitality**. Over time there has been a certain decline in biodiversity in the area, linked to mass tourism development in '70s-'80s and high demand of land for urbanisation purposes: abusive and second houses by natives and main city's inhabitants. Biodiversity is strongly linked to the permanence of the bergamot cultivation and, on turn, to its economic viability. The typical landscape is also strongly dependent by the permanence of bergamot cultivation in the area, which is strongly appreciated by local tourism and notably by external naturalistic tourism which has developed in the area since the second half of '90s. Moreover typical products (local sweets, bergamot beverages, perfumes, etc.) use as primary ingredient bergamot and provide local economy a further source of income linked to this specific fruit.

Governance of such ecosystem services is highly complicated by the structure and distribution of powers within the bergamot food chain. It is impossible to understand the provisions of ESBOs without taking into account of the complexity of this chain. Key actors are as follow:

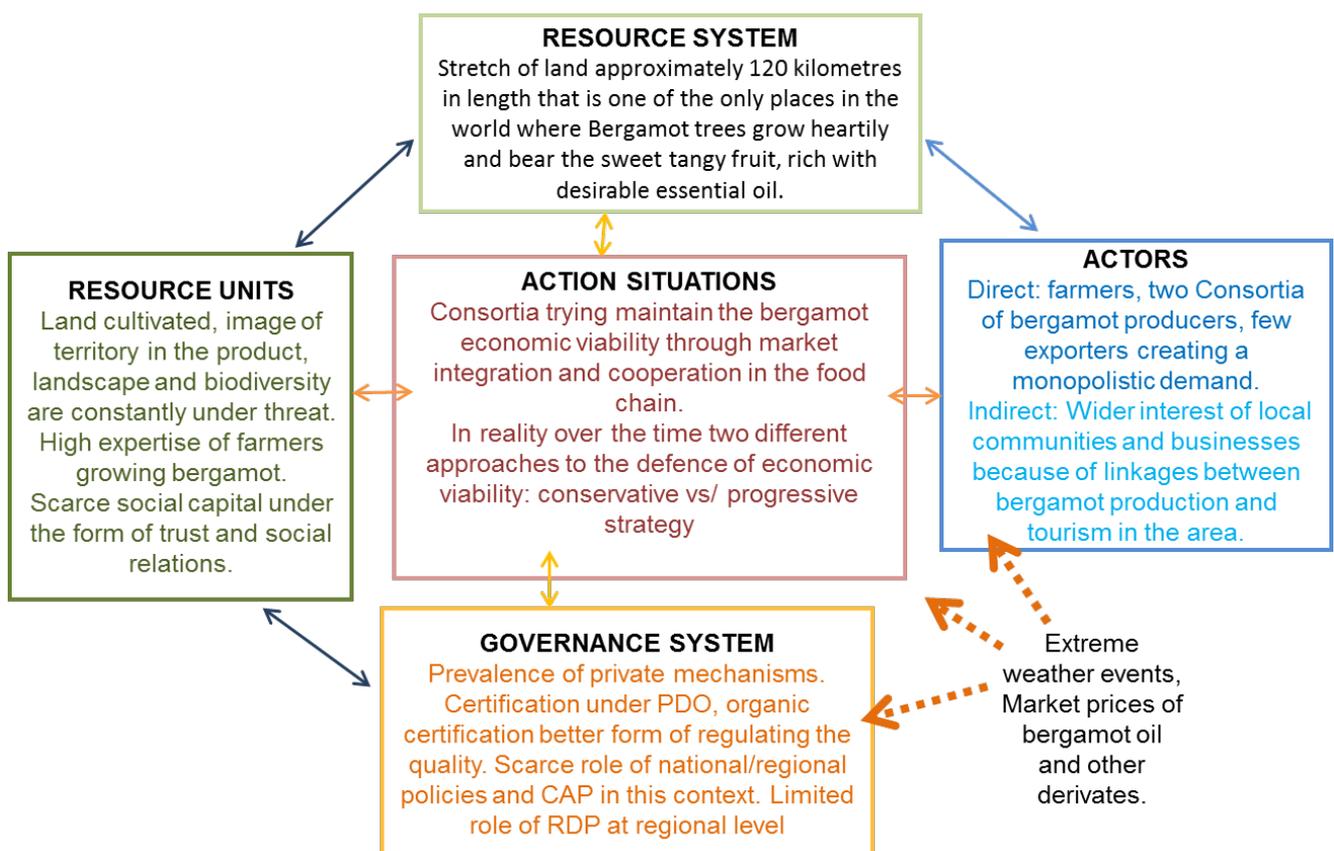


- Bergamot farms;
- Three different Consortia of primary producers: two of them producing conventional essence, one producing organic essence;
- A series of small industries processing bergamot fruit to produce essential oil, concentrated juice and other minor by-products for animal feeding (the so-called “pastazzo”);
- A series of local small artisanal firms producing typical food and non-food product using bergamot oil and juice as main ingredient (local sweets, bergamot beverages, perfumes, etc.);
- Very few (only four) wholesalers dominating the essential oil trade and exports to European, USA, Cina, India, Japan and South Corea markets.

As we will see in the next chapters, there is a strong link between the bergamot market, the governance of the food chain and the maintenance of the cultivation in the area with positive ESBOs effects.

2 Definition of the social-ecological system (SES) studied

2.1 Figure of the SES, using the SES Framework



2.2 Short characterisation of key drivers /motivations

As stated in the WP3 report (Mantino et al, 2016), the provision of specific ESBOs is the result of a combination of policy mixes, structures of governance and socio-economic drivers. In the case of the bergamot value chain these factors have interacted in a very different way over time.



We can distinguish two different phases of the evolution of the SES:

- The first one is characterised by the steady decline of the bergamot cultivation which contributed to the biodiversity decline and the landscape degradation of this area. This involution of the SES is quite relevant and long-lasting (1930-1990s);
- The second phase (from 1990s onwards) was characterised by a new local governance of the bergamot chain, new trends in the market demand and this meant a re-birth of bergamot cultivation with related positive effects on ESBOs.

2.3 Description of important variables chosen

The set of variables chosen is discussed in the following paragraph with reference to two periods mentioned above.

2.4 Discussion of SES

The first phase (1930-1990s)

The market prices of bergamot essential oil are structurally considered as a source of instability for farmers' income, due to:

- Strong variation of the bergamot fruit and essential oil production from year to year;
- The oligopolistic structure of the demand (the final demand by the perfume industry) and the fragmented structure of the supply (given by too many small and very small producers);
- The presence of diffused phenomena of adulteration of the essential oil (mixtures of pure essential oil with other fragrances imitating the bergamot characteristics, produced artificially by chemical industries).

In order to reduce the influence of these factors on market prices and consequently on farmers' income, a public consortium was set up by the State in the beginning of 1930s with the aim of stabilising market supply, control the quality of the pure essence and avoid frauds by private operators (notably the processing industry). This consortium was under the control of the Ministry of Agriculture. The public intervention was strongly supported politically by bergamot producers and their official organisations, under the assumption that this new institution would have maintained the economic viability of this peculiar production.

Main policy tools under the consortium management were: the compulsory storage of the bergamot oil production and a collective selling strategy under the control of the same consortium in the interest of primary producers. This policy was day by day managed by the consortium, but at the same time it was under the influential control of the State (Ministry of Agriculture) that definitely determined the governance structure of the consortium (president and management board). Despite this reinforced state intervention on the governance of the productive chain, the quality of the essential oil did not improve, and surpluses of essential oil were stocked in consortium storehouses and finally huge debts were accumulated.

The crisis of the bergamot production was particularly severe since the beginning of 1970s, when the lack of an effective governance by the consortium was accompanied by new socio-economic and political drivers: the diffusion of mass tourism in the coastal area, the lack of spatial planning and the widespread illegal process of urbanisation, which led to the most pervasive consumption of fertile soil in the history of this area. On the other hand, the crisis of the consortium intervention on market pushed single producers to return to previous atomistic regime of relations with the oligopolistic



demand by processing industries and private wholesalers and exporters. These drivers (market and governance) led to the decline of the resource system.

Table 1: Evolution of the local SES

SES Component	Decline of the bergamot production (1930-1990s)	New governance in the bergamot chain (1990s onwards)
Social, economic and political settings	High price volatility. Adulteration of essential oil by exporters. Emigration from agriculture	Increasing price trends. Improved bergamot farm viability. Reduction of outmigration from agriculture.
Governance system	State-managed consortium. Scarce collective action initiatives.	Birth of two new consortia: UNIONBERG (Producers organisation) and BIOASSOBERG (Organic farmers association)
Actors	Oligopolistic structure of the productive chain, dominated by few wholesalers. Non cooperative behaviour of primary producers	Producers are better organised under two consortia. Growing awareness of bergamot farmers of their force and positive effects on ESBOs.
Resource system	Decline of the resource system: reduction of the bergamot surface and productive soils.	Increasing surface under bergamot production. Reduction of use of soil for urbanisation purposes.

Source: Our elaboration

The second phase (from 1990s onwards)

In this phase, there is a relevant change in the local governance system of the bergamot chain which is complemented by new market drivers. We could state that the new governance system created by local actors cooperating makes possible the exploitation of the new market trends.

In 1995 a new consortium of organic producers (Bioassoberg) is set up by innovative bergamot growers and some years later (1998-99) new direct relations with the perfume industry (the English Body Shop) are established to sell small quantities (compared with the whole production) of essential oil. This allows the creation of alternative chain and better prices for producers. This alternative chain makes evident that diverse organisations of the market are possible and prices can be negotiated and agreed outside an oligopolistic structure.

In 2003 the second consortium (Unionberg) is created, under the initiative of a bigger group of producers and under the form of Producers Organisation, but these producers, differently from the previous ones, prefer to follow a more conventional method of production. However, they benefit from the price set by Bioassoberg and are able to negotiate this new price with wholesalers and exporters thanks to the bargaining power of their relevant memberships. Within the bergamot chain new power relations are now established and this allows redistributing the value chain more in favour of primary producers.

So in this period two different organisation modes operate in the bergamot chain, one (Bioassoberg) based on organic production and direct market relations with perfume industries, exploiting directly



the increasing international market demand for organic essential oils; the second one (Unionberg) producing more conventional essential oil, but supported by the majority of producers (about 500 farmers) and able to negotiate better prices thanks to the size of memberships. This membership also supports the creation of the PDO “bergamot of Reggio Calabria”, that on turn strengthen the bargaining power of producers with respect to the oligopolistic demand.

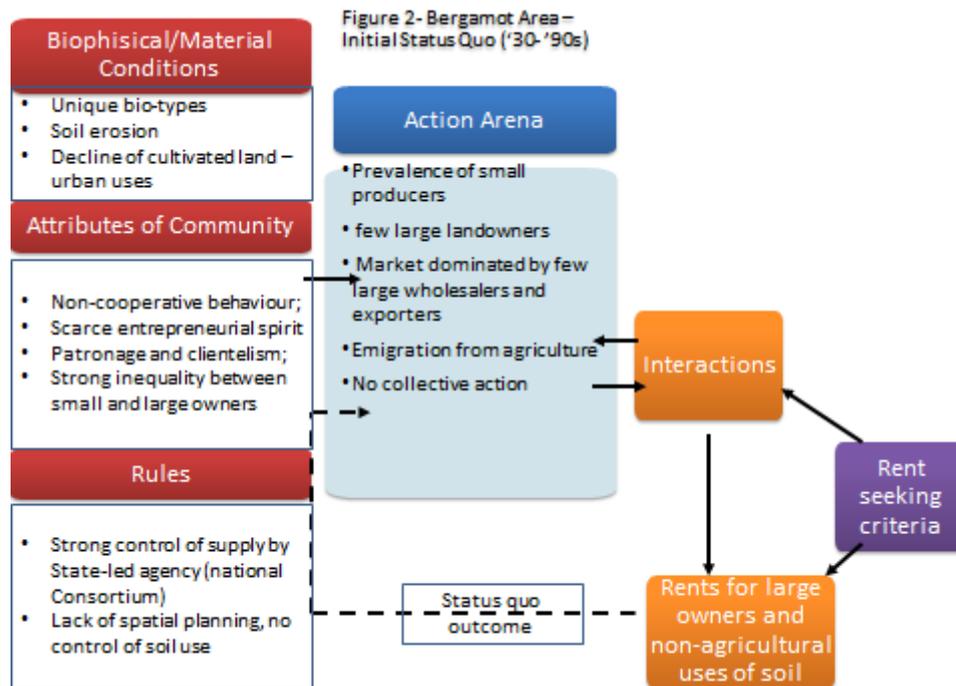
In the most recent years the demand of bergamot has shown a new impulse: the natural essence is more appreciated and consumed and new applications of bergamot products are found in the food industry and pharmaceutical fields. Naturalistic/green tourism in the area has grown and the knowledge of bergamot properties are more and more widespread, together with the appreciation of the places where bergamot is grown. Recently, bergamot juice has been successfully introduced in gastronomy, confectionery, liqueurs, and other component of the food industry. The essential oil finds novel applications in pharmaceutical preparations, exploiting a segment of demand for high specialised sectors because of its properties.

2.5 Common aims, conflicting interests and goals

The discussion of conflicting interests and goals can be developed through the scheme already used by E. Ostrom (2005) to understand the action arena in ecological systems. Following the concept of Ostrom, an action arena is made up of participants and action situations. This scheme is helpful in understanding which social and economic interests contribute, in a given action arena, to generate specific situations in each SES.

In the first phase (1930-1990s) the action arena is dominated by the presence of many small producers and few large exporters with very unbalanced bargaining power. The public intervention tries to mediate conflicts through the creation of a state-led agency (the consortium), but in a community characterised by patronage and clientelism, scarce entrepreneurial spirit and non-cooperative behaviour, the consortium is unable to find the right legitimation to stabilise price volatility and improve the bargaining power of bergamot producers. Dominant interests becomes then those driven by rent-seeking orientation: few large landowners and those seeking for urban development in a period of increasing mass tourism, lack of spatial planning and no control of soil use. In conclusions, dominant interests of main actors and the failure of positive mediating role of the State are both the reasons why landscape degradation and loss of biodiversity prevail in the socio-ecological system of the bergamot area. The only institution that should have aimed to keep alive the bergamot chain was dominated by large landowners and was strongly conditioned by local political forces willing to preserve the status quo (local municipalities, regional administrations, etc.). They had major interests in urbanisation and touristic development of the area. A synthetic representation of this action arena and main drivers is in figure 2.



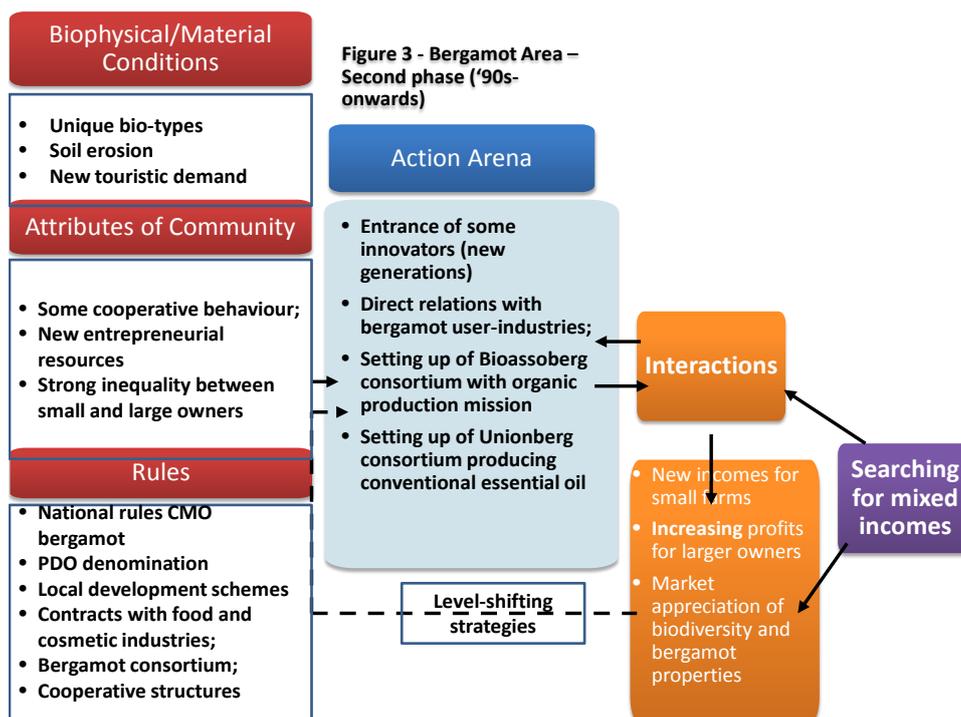


Source: Our elaboration on the scheme proposed by Ostrom (2005)

In the second period (from 1990s onwards) new equilibria were introduced by some participants entering into the action arena with innovative orientations, trying to set up direct relations with bergamot oil industries. These innovations were decisive in generating change because they showed that something different from the past rent-seeking behaviour could be done. And this relatively small change (few producers contributed to that) paved the way to an institutional change at the local level: the creation of two producers' consortia (Bioassoberg in a first step and Unionberg in a next moment). These institutional changes caused relevant improvements in small farms' incomes and increasing profits for large landowners. Moreover, consumers began to appreciate increasingly biodiversity and landscape linked to bergamot presence in the area, due to the preference towards more sustainable modes of touristic recreation. In other words, high-quality demand for tourism, organic production and new applications of the bergamot oil and juice in pharmaceutical preparations and food products were all economic and social external factors that contributed to change previous equilibria in the action arena (figure 3).

Institutional changes which have been promoted through the creation of two consortia generated outcomes that reinforced disposition to change of main actors. As Ostrom says (2005): *“When outcomes are perceived by those involved (or others) is less valued than other outcomes that might be obtained, some will raise questions about trying to change the structure of the situation by moving to a different level and changing the exogenous variables themselves”*(p. 14). It is what happened when two consortia, especially Biossoberg, discovered over time that they were able to gain increasing margins of the value chain. Always following Ostrom, these actors have tried *“to contemplate how to change any of the constraints on an operational situation (or, on a collective-choice situation) that are potentially under the control of the participants in that situation”* (2005, p. 62). In these cases Ostrom says that actors are trying to shift from a level of action to another one.





Source: Our elaboration on the scheme proposed by Ostrom (2005)

3 Status of the SES and potentials

3.1 Description of the SES

See previous paragraphs 2.4 and 2.5.

3.2 Relationships between farming and forestry, and the quantity and quality of ESBOs

The provision of ESBOs in this area are linked to:

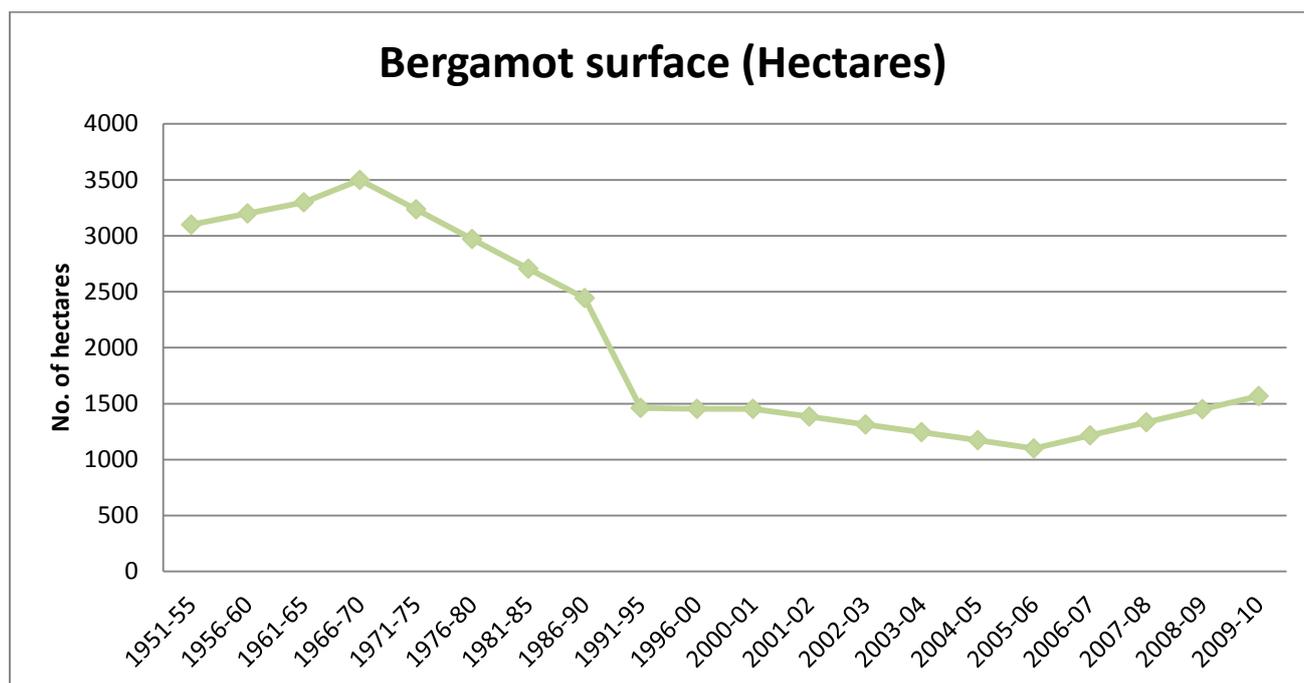
- The permanence of the bergamot cultivation and consequently the evolution of the bergamot surface over time;
- The profitability of growing bergamot for the primary producers, in a value chain characterised by oligopolistic demand of essential oil.

The relations between the bergamot cultivation, the economic profitability and the conservation of landscape and biodiversity is direct. This means that the decline of the bergamot surface directly affects losses of biodiversity and landscape character and cultural heritage. This does not mean, unfortunately, that market appreciates the social value of the bergamot cultivation. The only action taken by the public policy to deliver the conservation of bergamot trees in the area was promoting the setting up of a public-led consortium. As we have already outlined, this action failed in the first phase.

In fact, the long term evolution of the surface confirms that in the phase of decline (after a peak in 1966-70), the surface decreased sharply until 1991-95: from 3500 hectares of the 1970 to 1500 hectares (figure 3). In a relatively small area 2000 hectares represent a relevant amount of land lost for biodiversity and landscape conservation because devoted to other uses, mostly urbanisation.



Figure 3: Evolution of the bergamot surface in the long period



Source: Our elaborations on data from various sources (Consortium of bergamot)

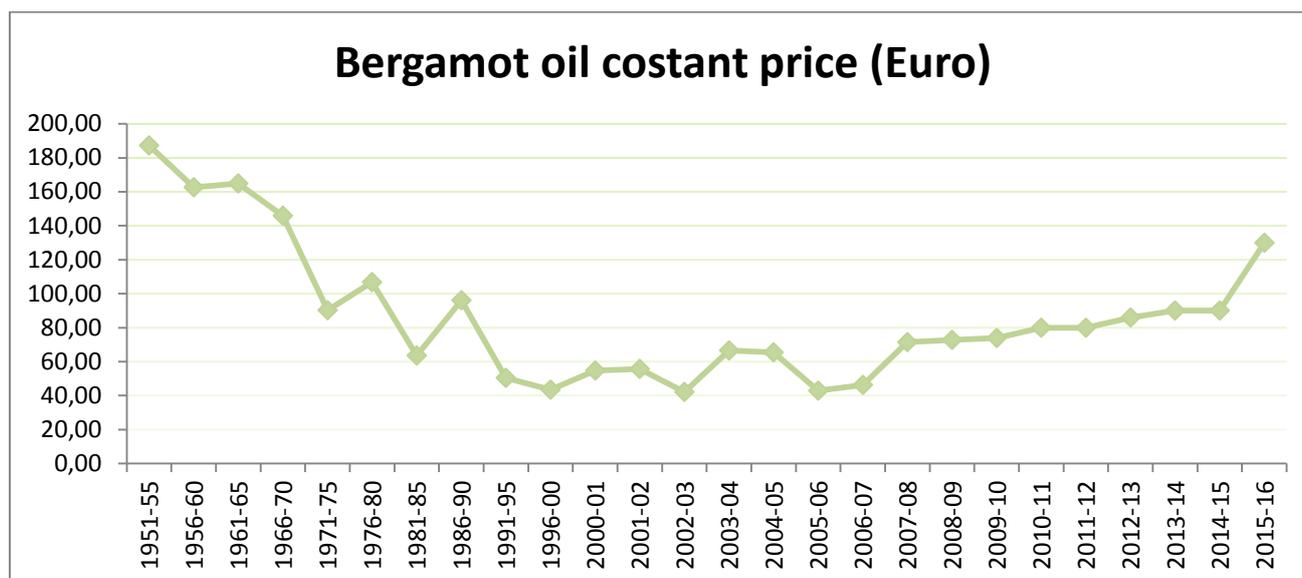
Since 1995 the trend proceeds more slowly and reach another minimum in 2005-06 (1.100 hectares), and afterwards it begins to raise and regains the levels of '80s (1800 hectares).

The good recovery of the last decade has been obtained through both a reconversion of orange and lemon trees to bergamot and through a renovation of old and less productive varieties with new bergamot plantations. These processes substantially improved the economic profitability and the resilience of previous cultivations.

The economic profitability of the bergamot production largely depends from market prices of the essential oil. The price trend was constantly decreasing until the first half of '70s and then was highly variable from year to year until the mid of '90s (figure 4). This confirms the evident failure of the State-led consortium in enhancing and stabilising essential oil prices. From this date onwards the price trend turn out to be still variable, but in the long run become increasing and this can explain the steady investment in new bergamot plantations, as we have observed earlier.



Figure 4: Trend of bergamot prices in the long run (constant prices 2010)



Source: Our elaboration from data in Nesci et al, 2005 and Consortium of bergamot.

In the most recent decade the impact of the bergamot farming on the provision of ESBOs can be resumed as follows:

- New investment in additional bergamot plantations;
- Reconversion of old varieties/species and abandoned land with new and more profitable plantations;
- Introduction of more sustainable farm practices (organic production) in the bergamot cultivation;
- Positive image of bergamot in the international markets and appreciation by consumers via better prices and via new applications of the bergamot derivatives in pharmaceutical preparation for diverse uses (Crispo, 2010): anti-inflammatory, antimicrobial, anti-mycotic, antiviral, neuro-sedative, anti-depressive; reduction of the hematic level of cholesterol, tri-glycerides and glucose;
- In connection with other factors of biodiversity (forestry, other typical products) and landscape character and cultural heritage (Greek culture, rural villages, etc.), strengthened local attractiveness for naturalistic/green tourism.

These effects are, on turn, other second order implications on rural vitality, notably on the following components:

- Consolidation of better relationships within the local community, based on trust, mutual learning and cooperation;
- Awareness of their own capabilities, better information and learning (enhanced human capital in the local economy);
- Stronger integration within the food chain and between the food/non-food chain and rural economies (tourism in rural areas, ICT and other services to rural population).





3.3 Key motivational, institutional and socio-economic factors

In this paragraph the analysis of the various factors will be done by considering first how institutional and socio-economic drivers have influenced the provision of ESBOs and second which public policies have promoted/conditioned the level of provision. In both cases a specific analysis is required for the socio-ecological system in the “decline” status (1930-1990s) and in the “new governance” status (/from 1990s onwards).

In this analysis we should consider also what kind of effects are generated by drivers on the configuration of the bergamot chain. Tables 2-3 resume drivers in two different phases, and related effects on bergamot chain and on ESBOs.

Table 2: How institutional and socio-economic affect ESBOs via the bergamot chain. The declining phase (1930-1990s)

Institutional and socio-economic drivers	Effects on the bergamot chain	Effects on ESBOs
Crisis of the State-led consortium	Decline of the bergamot oil price	Overall loss of a unique cultivation
Predominance of oligopolistic demand	Unbalanced distribution of value within the productive chain	Losses of plant varieties and species in the area
Entrance of synthetic oils in the bergamot market	Reduction of bergamot cultivated land	Deterioration of the landscape
Urbanisation/demand for coastal land		

Table 3: How institutional and socio-economic affect ESBOs via the bergamot chain. The new governance phase (1990s-onwards)

Institutional and socio-economic drivers	Effects on the bergamot chain	Effects on ESBOs
Increasing demand for organic production	Increasing bergamot oil prices	Regenerating plant biodiversity in the area
Emergence of demand for multi-purpose properties of bergamot	Better distribution of power within the productive chain	Discovering strong impacts on human health
Emergence of innovators among bergamot producers	New relations with perfume industries	Reconstitution of the landscape structure and stronger identity of the area in the collective image
Crisis of urbanisation/more sustainable touristic demand	New investment in bergamot plantations	Stronger economic relations with naturalistic/green tourism

Focusing on drivers in the most recent phase, we can see that some of them are external to the bergamot chain (the increasing demand for organic production and the emerging demand for the multipurpose properties of bergamot in pharmaceutical and food uses). But some drivers are linked



to actors involved, their subjective perception of opportunities, constraints and needs to change the same constraints and shift from an operational situation to another.

Moving to public policies, we need to recall what emerged from the analysis of working package 3 (Mantino et al, 2016). Even in the case of bergamot value chain a mix of policies have been interacting in a multi-level governance scale (European, national/regional and local) and a mix of regulatory framework and policy support measures. In conclusion, in a given SES there is always a mix of different policies contributing to ESBOs, both directly and indirectly, and with reciprocal interactions and different intensities. This is true also for this case study. The peculiarity of this case is that most of policies have indirect impact on ESBOs considered here. This is why they act through the bergamot chain, excepting for the most recent programming period (2014-20) when in the regional Rural Development Plan a bergamot-specific agro-environmental measure was introduced to cover higher production costs incurred by bergamot growers to practice soil conservative and organic modes of production.

When we reflect on the role of policy tools in the provision of ESBOs in this context, it is always helpful to distinguish between the SES configuration in the first phase from the second one.

During the first phase the configuration of SES was strongly influenced by policies aimed to the setting up of the consortium and addressed to the control of essential oil market from the supply side (through the compulsory storage of essential oil and the coverage of running costs of the consortium). In this respect the State promoted also the creation of a new plant for processing bergamot oil, under the management of the consortium. Through these measures, the State tried to enhance the profitability of the bergamot production because this was the major priority in times of dominant modernisation of the agri-food system. But these policies had scarce effects, as we showed in the previous paragraph, on the maintenance of a vital and sustainable bergamot production.

Policy tools adopted in the SES in the second phase change radically: given the substantial failure of the Consortium, the regional administration decided to revise the role of this agency, and abandon the compulsory storage, the collective selling of product and reduce the public contribution to running costs. In this phase most of public support was focused on farm investment (restructuring/renovation of bergamot plantations), the promotion of demand, the setting up of the PDO certification and more recently the direct support to agri-environmental practices in the bergamot production.

These policy interventions did not reveal crucial effects on the provision of ESBOs, but simply evidence the rationalisation of the market and the withdrawal of the State from the public support of a specific agency (support not more compatible with the EU rules on competition and State aid). The rationale of the public support moves now to complementing the private initiative in creating new cooperative institutions and in enhancing public awareness on the potential beneficial use of bergamot derivatives for the environment, cultural heritage and public health.

4 Conclusions derived from analysis in Steps 1 and 2

4.1 Key findings on SES and its potentials

In the last decade there has been a good recovery of the surface devoted to bergamot through both a reconversion of orange and lemon trees to bergamot and through a renovation of old and less productive varieties with new bergamot plantations. These processes substantially improved the economic profitability and the resilience of previous cultivations.



The economic profitability of the bergamot production largely depends from market prices of the essential oil. The price trend was constantly decreasing until the first half of '70s and then was highly variable from year to year until the mid of '90s. This confirms the evident failure of the State-led consortium in enhancing and stabilising essential oil prices. From this date onwards the price trend turn out to be still variable, but in the long run become increasing and this can explain the steady investment in new bergamot plantations, as we have observed earlier.

In the most recent decade the impact of the bergamot farming on the provision of ESBOs can be resumed as follows:

- New investment in additional bergamot plantations;
- Reconversion of old varieties/species and abandoned land with new and more profitable plantations;
- Introduction of more sustainable farm practices (organic production) in the bergamot cultivation;
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- In connection with other factors of biodiversity (forestry, other typical products) and landscape character and cultural heritage (Greek culture, rural villages, etc.), strengthened local attractiveness for naturalistic/green tourism.

These effects are, on turn, other second order implications on rural vitality, notably on the following components:

- Consolidation of better relationships within the local community, based on trust, mutual learning and cooperation;
- Awareness of their own capabilities, better information and learning (enhanced human capital in the local economy);
- Stronger integration within the food chain and between the food/non-food chain and rural economies (tourism in rural areas, ICT and other services to rural population).

4.2 Governance arrangements and institutional frameworks

In the period that we called “the good governance” (from 1990s onwards) new equilibria were introduced in the SES by some participants entering into the action arena with innovative orientations, trying to set up direct relations with bergamot oil industries. These innovations were decisive in generating change because they showed that something different from the past rent-seeking behaviour could be done. And this relatively small change (few producers contributed to that) paved the way to an institutional change at the local level: the creation of two producers’ consortia (Bioassoberg in a first step and Unionberg in a next moment). These institutional changes caused relevant improvements in small farms’ incomes and increasing profits for large landowners. Moreover, consumers began to appreciate increasingly biodiversity and landscape linked to bergamot presence in the area, due to the preference towards more sustainable modes of touristic recreation. In other words, high-quality demand for tourism, organic production and new applications of the bergamot oil and juice in pharmaceutical preparations and food products were all



economic and social external factors that contributed to change previous equilibria in the action arena.

Policy tools adopted in the SES in this phase change radically: given the substantial failure of the State-led Consortium, the regional administration decided to revise the role of this agency, and abandon the compulsory storage, the collective selling of product and reduce the public contribution to running costs. In this phase most of public support was focused on farm investment (restructuring/renovation of bergamot plantations), the promotion of demand, the setting up of the PDO certification and more recently the direct support to agri-environmental practices in the bergamot production.

These policy interventions did not reveal crucial effects on the provision of ESBOs, but simply evidence the rationalisation of the market and the withdrawal of the State from the public support of a specific agency (support not more compatible with the EU rules on competition and State aid). The rationale of the public support moved in this period towards complementing the private initiative in creating new cooperative institutions and in enhancing public awareness on the potential beneficial use of bergamot derivatives for the environment, cultural heritage and public health.

4.3 Reflections on methodology used and potential improvements

- The idea of S-E-S is already in the minds of our stakeholders, but this way of representing it is meaningless for them. In reality it was not relevant in interviews. Interviews work better when there is a simple scheme showing the main actors playing a role and suggesting possible interpretation of the conflicts and alliances between them.
- Interviews added many elements to our understanding of the system.
- A certain surprises on the discussion on ESBOs, because interviews highlighted as farmers prioritised cultural identity as form of ESBO (as part of rural vitality).
- The SES framework is not really working when you have to consider the dynamics of the socio-ecological system. The concept of phase is crucial to understand change over time and to take that there are processes of social and economic innovation that take place. SES framework is static.
- The role of market mechanisms is really crucial and SES does not fit to this. There is a list of variables without any particular attention to this issue.
- What is really unclear is the action situation: is the specific micro-situation or the case represented by the contract/arrangement between main actors? Or are structured social relations which constitute the basis for the working of the SES? There was no real progress on the understanding of this issue over time, even after the Estonia meeting.

5 Research and action mandate for Steps 3 and 4

5.1 Agreed objectives of activities to be undertaken with initiative/stakeholders

All relevant stakeholders stated their availability to go on with the research project and to be involved in an action research context. A relevant issue, given the amount of qualitative information which have been collected, is how deep should be the collection of further data on the relation between the farming process and the provision/appreciation of ESBOs. Provision and appreciation are two different research topics and require different types of data collection. My suggestion for step 3 and



4 is trying to define more specific research questions and at the same time identify/design more structured methods to collect information from local actors. Second suggestions: diversifying the local actors to be involved is decisive to get more complete range of vision of problems and policies needed.

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7 ANNEX

7.1 Documentation of research and action progress. List of interviewees.

N.	Name	Institution/organisation	Role	Place	Date
1	Ugo Sergi	Bioassoberg consortium	President of Consortium	Condofuri	12 June 2016
2	“ “	Bioassoberg consortium	President of Consortium	Annà	13 June 2016
3	Mimmo Cozzupoli	Bioassoberg consortium	Member	Annà	13 June 2016
4	Lillo Tripodi	Bioassoberg consortium	Member	Annà	13 June 2016
5	Ezio Pizzi	Unionberg	President	San Gregorio	30 august 2016
6	Francesco Prisco	Unionberg	Director/responsible	San Gregorio	30 August 2016
7	Giuseppe Zimbalatti	University of Calabria	Professor	Castiglione Garfagnana	30 august 2016
8	Nuccio Barillà	Legambiente	Former Director Legambiente calabria	Sillicagnana	29 August 2016

