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**The role of public forests in delivering ecosystem services: the
case of Cansiglio forest (in Veneto, Italy).**

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Summary

Forests are one of the most important providers of Ecosystem Services (ESs). The air we breathe, the water we drink and the food that we eat are linked more or less directly with those services, linked with life. For a long time those services have been used as they were unlimited. We took, in turn, the right of exclude current and future generations from having food, pose the sight on a glacier or drinking from rivers. For this reason the scientific community in the last years gave its efforts to translate the value of life in a language which is nowadays commonly understood: economic value. The integration of Environmental Services in an economic word allowed decision makers to consider them and work to produce or enhance them. Even more important become the role of forest owners and managers. In the European context 46% of the forests are publicly owned (excluding the post Soviets union federation with which the percentage would rose to 89%) and of these more of the 90% are managed by public administrations (FAO, 2010). As a result, public entities play a key role in the production of ESs. The present study is carried in Veneto, a Region in the North-East of Italy where public (state-owned) forests are managed by a regional agency: Veneto Agricoltura (VA). Since public entities are important actors of the ESs supply chain, the aim of this work is to study the case of Cansiglio Forest (CF), one of the forests managed by VA. Veneto Agricoltura is responsible of a wide range of mansions and areas all over the Region. Out of the Italian realities, CF is the most appropriate site to implement the study because it is a prime provider of high quality timber and, above all, the forest is used for hydrologic protection, touristic activities and biodiversity protection. With the purpose of explaining the way by which ESs are provided, a case study has been done. Indeed, qualitative case study methods are useful to study situations where the phenomenon is closely linked to the context (Baxter and Jack, 2008). As a whole, collected data composed by internal archival documents and interviews. Particularly, archival documentation was about three touristic projects implemented in CF and the activities carried by the educational- and

recreational-office (ER office). The interviews were of two different kinds: one was a semi structured interview with only open-ended questions about the implemented projects and one was compounded by both open- and closed-ended questions. The second type of interview was conducted with a group of environmentalists and a group of employees of VA. The interview with the staff's members touched three themes: 1) priorities and objectives of the management, 2) management's results and 3) management's models. The interview for environmentalists did not comprehend the second theme since they are not concerned in that topic.

Before the study implementation a list of theoretical patterns was redacted. The list comprehended different possibilities of ESs supply. To assess which hypothesised pattern better matches with the real pattern, three units of analysis were used: the monetary value of projects linked with ESs-supply, the number of activities provided by VA and the opinions of Cansiglio's stakeholders about the ability of VA to produce ESs. From the evidences arose with this study, biodiversity protection, hydrological safety and timber production are fulfilled by the forest felling plan because of its naturalistic criteria. On the other hand, the touristic service supply has seen an increment of activities in the last years where VA created international collaborations and found European funds to invest in this sector. It has also been enlightened that the touristic business is likely to become the most relevant for Cansiglio. It is moreover interesting that Veneto Region release funds mainly for infrastructures restoration and creation which only indirectly underpin VA's work. The main objectives of VA were achieved while some of the interviewees thought that the monitoring of habitats and biodiversity should be improved. Concerning the biodiversity of Cansiglio, the instauration of a balance between fauna and flora is really important to be reached soon. As regards the Veneto Agricoltura's relations with stakeholders, the collaborations with local communities has been difficult so far even if VA is trying to bring new energies with both local and international projects. Under these circumstances the possibility of a privatisation process is now emerging. Even

if there are signs of the privatisation process most of the respondents think that Cansiglio forest must remain publicly owned.

Riassunto

I boschi sono tra i più importanti fornitori di Servizi Ecosistemici (SE). L'aria che respiriamo, l'acqua che beviamo e il cibo che mangiamo sono connessi più o meno direttamente con quei servizi, connessi in pratica con la vita. Per un lungo periodo questi servizi sono stati usati come se fossero illimitati. Noi prendemmo, di conseguenza, il diritto di escludere le presenti e future generazioni dall' avere cibo, posare sguardo su un ghiacciaio o bere dai fiumi. Per questo motivo la comunità scientifica negli ultimi anni si è impegnata per tradurre il valore della vita in una lingua che è al giorno d'oggi alla portata di tutti: l'economia. L'integrazione dei SE in un mondo economico ha permesso ai decision makers di considerarli e lavorare per crearli e sostenerli. Anche più importante, in questo contesto, diventa il ruolo di chi gestisce o possiede un bosco. In Europa il 46% delle foreste è posseduto da enti pubblici (escludendo l' URSS con il quale la percentuale salirebbe all' 89%) e di queste più del 90% sono gestite da amministrazioni pubbliche (FAO, 2010). Ne comporta che gli enti pubblici giochino un ruolo chiave nella produzione di SE. Lo studio qui presente è stato sviluppato in Veneto, una Regione nel nord-est dell' Italia dove le foreste pubbliche (demaniali) sono governate da un'agenzia regionale: Veneto Agricoltura (VA). Dato che gli enti pubblici sono importanti per la produzione di SE lo scopo di questo lavoro è quello di studiare il caso della foresta del Cansiglio, una delle foreste demaniali gestite da VA. Le domande di ricerca che mettono le basi per questa ricerca sono due: (i) VA sta supportando la produzione di SE? (ii) con che modalità starebbe dando tale supporto? VA è responsabile di un apio bagaglio di mansioni e aree in tutta la regione. Tra tutte queste realtà, la foresta del Cansiglio è il sito più appropriato in cui approntare lo studio in quanto è fornitore di un legname di alta qualità e soprattutto la foresta ha diverse funzioni tra cui quella di difesa idrologica, turistica e della protezione della biodiversità. Con lo scopo di

spiegare le modalità con cui i SE sono forniti, un caso studio è stato scelto come tipo di ricerca. Infatti, i metodi di studio che utilizzano dati qualitativi sono i più utili per studiare situazioni in cui il fenomeno è strettamente legato al suo contesto (Baxter and Jack, 2008). Nel complesso, i dati raccolti comprendono: documenti interni e interviste. In particolare, i dati d'archivio furono redatti per 3 progetti turistici attuati in Cansiglio e le attività sviluppate dall'ufficio che si occupa dell'offerta educativa e ricreativa. Otto questionari sono stati poi raccolti da un gruppo di ambientalisti a proposito delle priorità di gestione della foresta e delle possibili forme di gestione future. Le interviste, erano di due tipi diversi: una era cosiddetta "a fondo" costituita solo da domande aperte a proposito dei progetti sviluppati in passato mentre la seconda era costituita sia da domande aperte che da domande chiuse. La seconda intervista verté su tre argomenti principali: 1) priorità e obiettivi della gestione, 2) risultati della gestione e 3) i modelli di gestione. Precedentemente all'attuazione dello studio, una lista di "scenari ipotetici" fu elaborata. La lista comprendeva alcune possibili forme di fornitura di SE. Per meglio capire a quale "scenario ipotetico" meglio approssimava quello reale, tre unità di analisi sono state usate: il valore monetario dei progetti legati alla fornitura di SE, il numero di attività fornite da VA e le opinioni dei portatori di interessi riguardo alla capacità di VA nel mettere a disposizione del pubblico SE in Cansiglio. Dai dati raccolti, la protezione della biodiversità, la protezione idraulico sanitaria nonché la produzione di legname sono fornite dal piano dei tagli che è fortemente improntato dalla selvicoltura naturalistica. In un secondo contesto, i servizi turistici (fortemente legati all'offerta educativa) hanno visto una crescita in numero negli ultimi anni dato che VA ha creato un sistema di collaborazione internazionale sussidiato dall'Unione Europea (UE). Si è rilevato inoltre che il settore turistico è quello che diventerà più rilevante per il Cansiglio. E' inoltre interessante che la Regione Veneto stia rilasciando fondi principalmente per la creazione e restaurazione delle infrastrutture, le quali sostengono solo indirettamente l'operato di VA. Gli obiettivi principali di VA sembrano raggiunti mentre una porzione degli intervistati pensano che il monitoraggio degli habitat e della biodiversità dovrebbero essere migliorati.

Non distante da questa mancanza, è importante un rapido raggiungimento di un equilibrio tra fauna e flora. Per quanto riguarda le relazioni tra VA e i portatori di interessi, la collaborazione con le comunità locali è stata difficile fino ad ora anche se VA sta provando a portare nuove energie con progetti sia locali che internazionali. In questo contesto, sussiste la possibilità che alcune proprietà pubbliche diventino private secondo le evidenze raccolte. Anche se segni di un processo di privatizzazione sono presenti la maggior parte dei rispondenti sono dell'opinione che la foresta del Cansiglio debba rimanere di proprietà pubblica.

1 Introduction

The Millennium Ecosystem Assessment (MEA) of 2005 defined ESs as the benefits that people obtain from ecosystems, splitting them into *providing services* (e.g. timber), *regulating services* (e.g. climate change protection), *cultural services* (e.g. spiritual benefits) and those services at the base of all the others: *supporting services* (e.g. photosynthesis). This research area made starting the integration of those different services into conventional forestry management creating a new modality to manage forests (and more widely ecosystems). In a nutshell, the MEA posed the cornerstone of the sustainable forest management (SFM). Among SFM practices, corporate social responsibility (CSR) is useful tool to let people know how forestry enterprises produce both goods (for economic development) and ESs (for quality of life enhancement) (Lord Holme and Richard Watts, 1999). A major role in this context is played by State Forest Enterprises (SFEs) since they manage and own most of the forests in Europe and all over the world (FAO, 2010). According to Lindgreen and Swaen (2010), the development of CSR reflects the influences of various theories coming from agencies, institutions, the resource-based view of firms, stakeholders, stewardship councils and firms. Accordingly, the reporting system (and particularly, indicators, time frames and unit of measure) are very different from country to country (Liubachyna, Secco and Pettenella, 2017). To summarise, a knowledge gap about SFEs' work is evident. Consequence of the little transparency and clarity is the lack of knowledge of those stakeholders who are more interested and usually not considered: the common people. Moreover, a lack of communication may affect also the development of forest managers. Therefore, filling this knowledge gap is a worthy (if not even necessary) work. Liubachyna, Secco and Pettenella (2017) think that "regularly published reports, audited externally, based on a common set of reporting criteria and meaningful indicators" is a possible solution to increase accountability and transparency (and public support in turn). Another possibility to fill the knowledge gap is that external entities report the action carried out by SFEs. This work discloses indeed the case of Cansiglio, an Italian public forest managed by Veneto Agricoltura: a region owned agency which manage public forests. More specifically, the aim of the study was firstly to take Cansiglio as an example of the Italian reality of SFE's management and compare it with other European realities. Sharpening the sight upon the changes (occurred or possible) of the organisational model of the enterprise and identify the main priorities of the management are the two main purposes of this thesis. According to the stated aims, the research questions which put the base for this work are two: (i) is VA supporting the production of ESs and (ii) how does VA

enhance such production? The here present work is divided in 5 chapters with relative subchapters. In the second chapter the background directly explain the reason and the context of the questions on which this thesis is based. Secondly, in “the case study” chapter information about history, geography, geology, climate and ecosystems of Cansiglio are pointed out. Then, in the research method chapter I explain in details why a qualitative case study method has been chosen and the characteristic of data collection. Subsequently, the results and discussion chapter lists all the evidences collected from both archival data and interviews in order to outline all the opinions and reasons behind every evidence. Finally, the conclusion chapter discusses about the most relevant information found and I replies to the research question.

2 Background

The introduction of the Ecosystem Services approach date its main pillar around the millennium year (Costanza *et al.*,1997; MEA (Millennium Ecosystem Assessment), 2005) where these were the result of long dialogs and agreements about the value of the natural capital (UN, 1992; UNCED, 1992). Citation of ESs rose exponentially over time (Fisher, Turner and Morling, 2009) and Nordin, Hanson and Alkan Olsson (2017) showed that the number of implicit and explicit citations of ES in the archival documents of two different municipalities of Finland rose up since 2007/2008 as showed in Figure 1. First studies were more focussed on the possible ways to accurately estimate such new and different kind of services in order to internalise (or to consider) them in the decision making process and in the economic markets to avoid market failures. Methodologies became more accurate and important assessment has been re-made finding significant variations from first carried analysis (Costanza *et al.*, 2014). The focus secondly sharpened on the ways to internalise ESs in economic markets. Payment for Ecosystem Services (PESs) schemes, public taxes or tax deductions, Carbon-markets, are just few of the tools developed and studied to make ESs profitable. More recently a big amount of researches has studied in details the ways undertaken to provide such services and how these change from provider to provider. According to the nature of most of the ESs (non-excludable and non-rivalrous), these are sometimes considered as public goods (Gatto *et al.*, 2013). Accordingly, further studies have been carried around the organisational model of ESs providers (Tompkins and Eakin, 2012). According to Gatto *et al.*(2013) forest owners are not interested in ESs supply if they are not rewarded through sustainable mechanisms. This statement creates a divergence in the literature: if some ES is also a public good, does the public body work to produce such service or not? This question becomes even more interesting considering the context of public forests management in Europe. Liubachyna *et al.*(2017 a) deeply studied State Forest Management Organisations (SFMOs) and she particularly stated that SFMOs are owned by state but function as private enterprises and that their management “increased importance of forest values, environmental services and social inclusiveness”. Subsequently, a request for further (case) studies about the goals of SFMOs management has been done. These two line of inquiry matched in the research questions of the present work: “are SFMOs more oriented to profit gains or to ESs delivery?” and “how do they seek their stated goals?”. I accordingly studied the case of Cansiglio Forest.

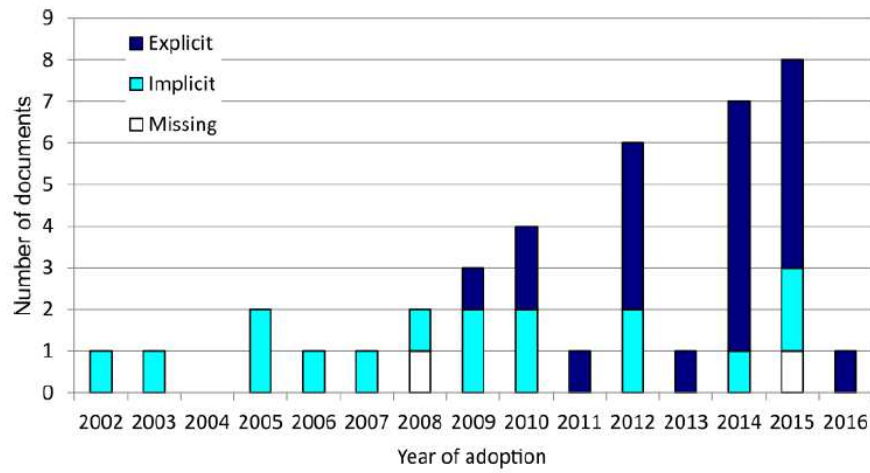


Figure 1: Histogram of the number of explicit and implicit citation of Ecosystem Services into two Finnish municipalities documentation along time (source: Nordin, Hanson and Alkan Olsson, 2017).

3 The case study: the Cansiglio area and its forest

The present chapter provides a more detailed sight into the reality of Cansiglio. It is divided in sub-chapters and paragraphs to improve the readability of the text. The first sub-chapter introduces the story of Cansiglio, starting from the firsts human activities carried in the plateau in the prehistoric period, briefly switching to the Roman Empire and finally speaking of the most historically important period for Cansiglio: the domination of the Most Serene Republic of Venice (the *Serenissima*). Secondly, the geography and morphology of Cansiglio are described to identify the general information (administrations boarder, altitude, land use cover etc.) of the study site. Later, sub-chapters concerning the abiotic (climatic and geological characteristics) and biotic (fauna and flora) elements of the ecosystem are provided to better contextualise the forestry sector features.

3.1.1 The story of Cansiglio forest

This sub-chapter furnish the historic background of Cansiglio and specifically it sharp its focus on the relations between men and Cansiglio. I specify that most of the information of the period from 1548 till the end of the 18th century have been found in the book of Lazzarini (2006); I suggest to read it for any further information.

3.1.2 The prehistory

Cansiglio plateau has always been characterized by a strong link with men because of the wide range of livelihood delivered by the first mountain forest which is also easily reachable by the plain. This relation started several years ago. The first human settlement, according to Peresani (2009), date back to the upper Paleolithic (during the stone age) 12'000 years ago. In the same

study carried out in 2009, settlers were assessed to be nomads with a wide range of movement. They moved seasonally across their complex network of settlements following their requirement (meat, leather, warm places, wood, etc.). Each settlement was indeed specifically built to obtain a precise good, for example the two sites “*Bus de la Lum*” and “*Palughetto*” were designed for hunting and carcass processing like graters, spotted blades and burins for working leather, wood, horn, and bone (Peresani, 2009). Stable settlements were built only on the western part of Cansiglio in the Mesolithic period (from 10’000 to 8’000 years ago) showing the inner skill of Cansiglio to provide livelihoods considering the north-oriental Alps background. This findings may suggest that between upper Paleolithic and Mesolithic populations passed from a nomad to a semi-nomad system.

3.1.3 Post-classical history

The forest was afterwards populated and used by paleovenetians, romans, barbarians, populations, *Alpago*’s communities, without a proper and coherent forest management. The first documentation of Cansiglio get back to 923 a.D. where the king of the Italian kingdom, Berengario I, assigned Cansiglio’s feud to the *Belluno*’s bishop-count. From this first documentation, Cansiglio was used for wood production and pastures utilisations by local peoples (De Barbara, 2013). Subsequently, Cansiglio became property of the Community of Belluno in the communes period¹. At this time Cansiglio forest was under a strong pressure of the human activities (De Martin, *et al.* 2014).

3.1.4 The *Serenissima* Republic of Venice

After the communes period, Cansiglio was initially restored after the mid-16th century namely when Cansiglio is under the domination of the Most

¹ The communes period, in the Italian history refer to the last period of the middle age when the management power was given to local administrations. This form of administration started in the central and northern Italy spreading over Germany and with different shapes even in the United Kingdom and in France.

Serene Republic of Venice (the so called “*Serenissima*”). The republic was born at the end of the 8th century but reached its highest well-being after the communes period. Few characteristics of this Republic were a high political stability, and a common well-being feeling of the people. During the second half of the 16th century the Republic was expanding its territory; therefore, it needed a huge amount of materials for the army and the fleet. For this reason, the venetian council of the ten (*Consiglio dei dieci*) announced in 1548 the destination of Cansiglio for the production of oar for the Republic’s arsenal (this gave to Cansiglio the famous name of “Oar forest”; in Italian “*Bosco da Remi*”). The beech wood was considered technologically perfect for the crafting of oars and useful also as fuel. The Republic gave, with this announcement, the first framework for forest management. The management considered firstly the productions (oars, timber and charcoal) and secondly the function of protection from erosion in order to avoid the solid transport throw the lagoon and the centre of the republic (documentation about this topic is barely present on literature). The transportation of wood to the lagoon was difficult because of the karst nature of the Plateau which does not have any superficial water resources. The lack of water streams, the scarce road framework, and the steepness of some portion of the area made difficult the timber hauling. Despite this difficulty, Venice used the river network to transport the wood from mountain and hills to the lagoon. As a consequence of the announcement, the neighbourhood of Cansiglio was partially excluded by the forest utilizations. In particular, row materials were property of the republic but all the felling operations, parting and wood hauling were carried out by local companies and workers. Staying to the venetian administrations, those work concessions added to the pasture permits and the control of few underpaid forest guards would have avoided illegal felling. Oppositely to what was thought by the council, the neighbourhood was disappointed by the exclusion from the resources of the forest. For this reason, guards were paid by local people to permit illegal cuts and shepherds cut trees around their meadow (opposing to forest expansion). This management was characterized by illegality and the silviculture was the

so called “*Taglio a scelta*” translated as “choice cut” where the decision was taken considering the only qualitative aspect of the tree to be chopped without contemplating any chronologic-planimetric parameter. Under those circumstances, the forest was slowly losing its structure.

The unsolid but constant management of the *Serenissima* was linked to the political stability of the period; as a consequence of this connection, the end of the republic (occurred in the late 18th century) has brought careless management of Cansiglio forest which balance was decreasing. During this difficult moment, the council was able to launch only few reforms; one of these was the forest management reform of the 1792 which sought to radically change the forest composition from the “useless” beech (*Fagus sylvatica*) forest into a fir (*Abies alba*) and spruce (*Picea abies*) forest. Coniferous species were indeed highly appreciated by markets because of their higher technology characteristics. They were still used for energy but moreover used for mast as well as carpentry products and structures (for which beech wood was unappropriated). Despite the fact that the reform was successfully launched it has never truly taken place because the senate was running out of money; the *Serenissima* Republic of Venice came to its end in 1797 after 1100 years of reign.

3.1.5 The Hasburgic and French domination

From this date onwards the Habsburg Monarchy and the Emperor of the France alternated each other in the “property” of different part of Italy. The first Austrian administration did not bring any deep changes in the forest management of Cansiglio. With the occurring of Napoleon Bonaparte the domain passed to France. The forest was accordingly gifted of a more stable management. By way of contrast this management brought clear felling all around the concerned plateau especially where wood harvesting was easy to carry out (nearby forest paths). This led to an additional destructuration because old trees (far from streets) were left and young trees were chopped. As sign of the darkest period, documentation confirm that between 1811 and 1813,

20'528 trees were sold. The management returned to the Austrian monarchy and the directives coming from Vienna were not too different from those coming from Marseille. The only renewal was the institution of a framework dedicate to the whole forest governance but after these few years of foreign administration brought Cansiglio to the deepest moment of its story.

3.1.6 The Cimbri

The so called “*Cimbri*” is a group of settlers which populated an area among Bavaria and Tyrol before descending to Italy in the 18th century. This community firstly settled in Roana, a village of the seven communes of the Asiago plateau, before coming in Cansiglio. They started to populate Cansiglio attracted by trees which were their main source of livelihood. They were specialised in the production of *talzi* and *tamisi*, two particular kind of boxes used for cheese production (this is why they were also known as box-makers). The cimbric community needed ancient trees to carve so that they asked and received a ten year concession to use 1'500 overgrown and ancient beech trees (Bérenger, 1863). The Republic thought to be advantaged by this deal because secular beech trees were decaying and too far from forest paths, but they did not know that the Cimbric community was demographically growing faster and faster. Around the middle of the 18th century the community grew up and the demand for secular trees rose with it: pressures and dissatisfactions were common among families. Contrastingly with the Cimbri's situation the forest management was getting more and more aware of forest balance and resilience to foreign pressures. Under those circumstances, the inspectors of the mid-century started a way of governing characterised by a higher number of concession but with smaller trade each. In spite of having big trades (which were usually closed unsolved) the small concession (under 150 Lire each) the bureaucracy was lower. As a result, illegal cuts were fewer and the forest was less used seeking a more natural structure.

3.1.7 Adolfo di Bérenger and the scientific management of the forest

At the end of the 18th century Cansiglio was described by the entrusted engineer and forest manager Antonio Liepopilli in his report of the 4th of July 1850 to the general inspectorate of forests as: a forest where the past management has left clear signs of carelessness about silviculture's structure, normality, durability of forest for future generations. (Liepopilli, 1850). For this reason, Adolfo Di Bérenger, man of science and strong supporter of a more "scientific and silvicultural" management, since he became inspector of forest, aimed to reach the so called "normal state" of the woodland. From the point of view of the 19th century conception of forestry science this state is characterised by a "right" composition, density, and an increment coordinated in order to provide maximum and constant wood goods now and for generations to come. Seeking this aim, De Bérenger faced pressures coming from marine forces, mines companies from Agordo and the train company. Moreover he tried several times to restore old nurseries or create new ones in order to create a base stock of plant for plantation in Cansiglio. Despite all the efforts, he never succeeded because of storms, pests' attacks and lack of personnel. The firsts results came from his successor inspector: Rigoni Stern. Stern and Di Bérenger were actually two of the main actor in the scene of the mid-eighteenth century where the climate around the forest management was essentially characterised by strong tree plantations (700'000 coniferous trees over 70 ha between 1837 and 1866 in addition to 451'000 resinous trees over 38.2 ha in 8 years after 1871).

In a nutshell, in the 18th century the baseline for the forest management plan was created and the forest state was slightly improved by many efforts of the administrations and the inspectors.

3.2 General information

Cansiglio forest is considered as the cradle of forestry since the first assessment planning was made by the *Serenissima* Republic of Venice in 1548.

The forest of Cansiglio is geographically considered as a closed plateau located in the pre-alpine landscape.

From an administrative point of view the forest is placed between the autonomous Region of Friuli Venezia Giulia and the Veneto Region. Additionally, the forest is split up among the three provinces of Treviso, Belluno and Pordenone.

3.2.1 Morphology and Geography

Cansiglio is surrounded by mountain chains: on the north-east boundary is connected with the Cavallo chain, while it borders in the north on the Alpage's group and in the west on the Lapisina valley which separate Cansiglio from the col Visentin. On the southern and eastern boundaries Cansiglio touches the plain of the Venetian and the Friulian Regions. The lowest point is located in Cornesega (898 m.a.s.l.) while the highest peaks are Mt. Pizzoc (1565 m.a.s.l.), Mt. Millifret (1577m.a.s.l.) and Mt. Croseraz which rises till 1694m of altitude. The main plateau is compounded of three areas: "Pian Cansiglio" the main part of the plateau, the already mentioned "Cornesega" and "Valmenera". The main accesses to the plateau are the northern Campon valley (1050 m.a.s.l.) and the southern Crosetta valley (1118 m.a.s.l.). The surface of Cansiglio is mainly formed of forests and pastures, accordingly with the typical pre-alps landscape. The detail of Cansiglio use of soil is showed in the Figure 2 below.

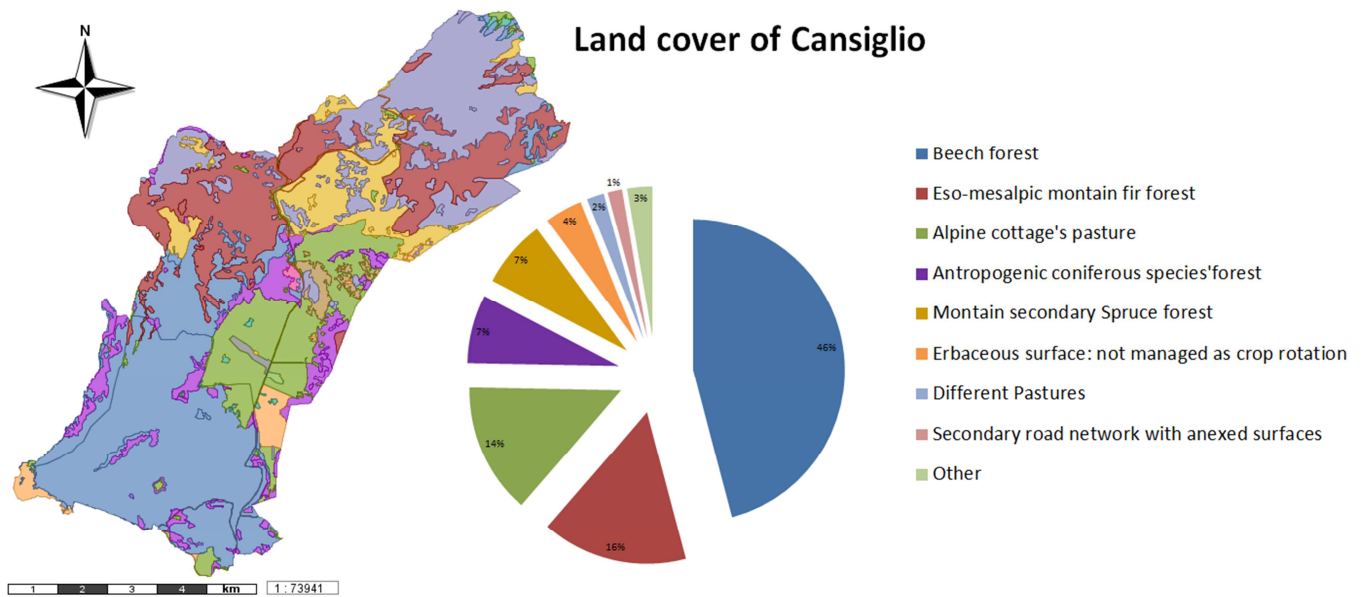


Figure 2: Map, cake percentage graph and legend of the land cover distribution of Cansiglio (elaborated data from Regione Veneto (2018))

3.2.2 Climate

As said above, Cansiglio is on the first layer of Alps which face the plain. This is the main factor which characterise the high rates of rainy precipitation. Winds coming from south-west typically push air against the pre-Alps; for this reason the air with its water particles can only rise in altitude, condensate and release water as precipitations. This phenomenon is the so called orographic precipitation. As a result, the average precipitation per year is of about 2020mm with maximum of more than 3200mm². The precipitation trend is not completely definable either as a winter-peak or a asymmetric equinox-trend but, as showed in the Figure 3: Rain trend of Cansiglio derived from the computation of the data of the period 1994 - 2016 (source: www.arpav.veneto.it), it tends to be the second one with two peaks in May and November. It is clear that November is the most rainy month while February is the month characterised by the lowest rain precipitation. Despite this, data has to be

² average of the period 1994-2016 (Arpa Veneto, 2018)

considered only for liquid precipitation and not for snow (not detected by the meteorological station).

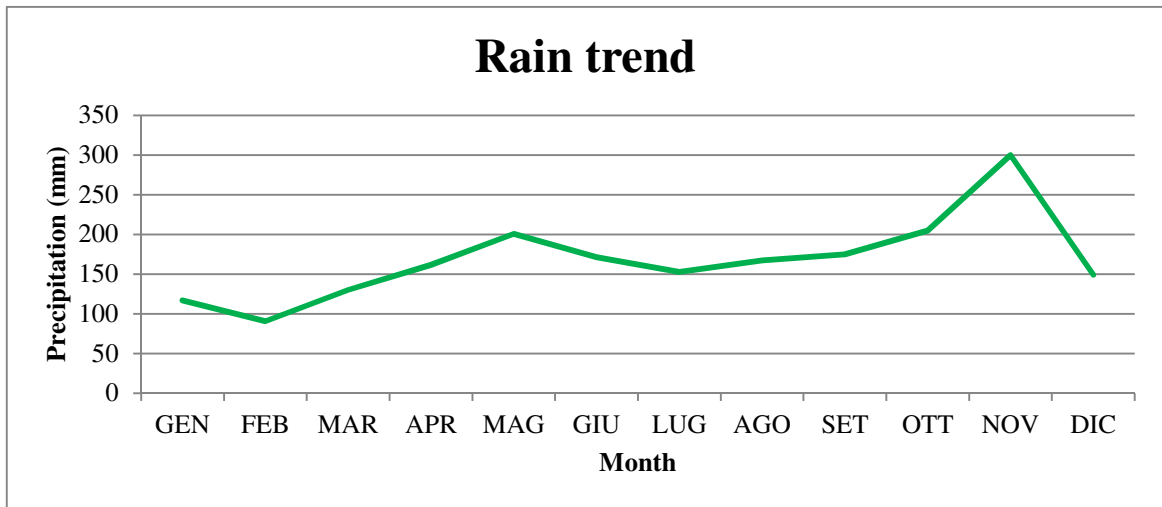


Figure 3: Rain trend of Cansiglio derived from the computation of the data of the period 1994 - 2016 (source: www.arpav.veneto.it)

Regarding the temperatures, Cansiglio has the average around 6°C with a wide variation between maximum and minimum: even if it is not frequent, minimum touched 15.7°C and maximum reached 26°C (Figure 4). Despite these data, temperatures can locally vary even in such a small area due to a typical phenomenon which occur in Cansiglio: the heat inversion. The cold air descends from the surrounding mountains to the lower central areas. For this reason actual minimum temperatures in Cansiglio can be lower than those recorded reaching -30°C (De Martin and De Savorgnani, 2014).

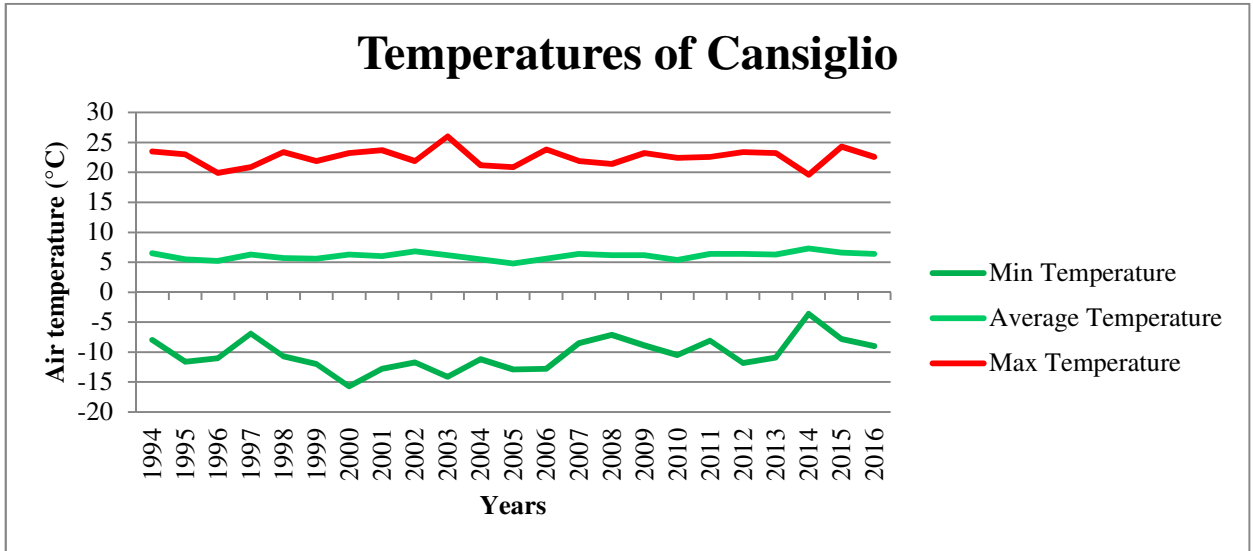


Figure 4: Trends of the temperatures in Cansiglio in the period 1994-2016. The “average trend” is the average of the medium temperatures recorded yearly while Min and Max lines are the Minimum and Maximum values recorded monthly (source: www.arpav.veneto.it)

A third important feature of Cansiglio climate is a high humidity rate. Days characterised by mist are common in winter and during the dawns and the sunsets strongly affecting the habitat and the ecosystem of Cansiglio. Figure 5 shows relative humidity (RH) patterns. This characteristic is one of the most important factor which characterise Cansiglio’s habitats.

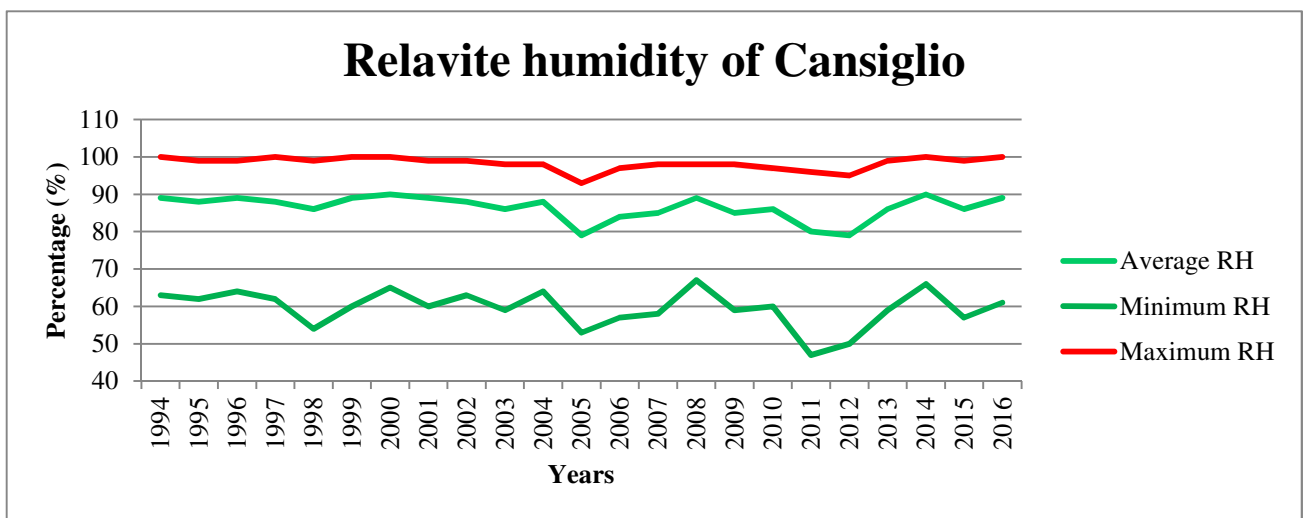


Figure 5: Trends of the max, min and average relative humidity in Cansiglio. Displayed data are the average of each year's max, min and average values (source: www.arpav.veneto.it).

3.3 Geology

As the major part of the Dolomites, Cansiglio is mainly composed by sedimentary rocks. More specifically, it is formed of limestone rocks originated by the sedimentation of organic beings, marl, sandstone and deformations of these (see Figure 6). Since limestone is the most present rock of Cansiglio, the whole area is characterised by the phenomenon called karst. A karst area is usually characterised by the inability to retain water because these leaks through the soil and the rock. The water coming as precipitation chemically degrades the limestone creating typical hollows. These typical soil depressions are of two types: (i) those blocked by clay or detritus on the surface, called *doline* and (ii) sinkholes which go deep into the ground even for hundreds of meters (Posenato, 2012). In the first case, impermeable sediments and detritus (e.g. clay) aggregate at the bottom of the *doline* creating a permanent pool of water, the so-called “*lame*”. The second kind of hollows have earned the attention of the scientific community even if further studies need to be done. The most

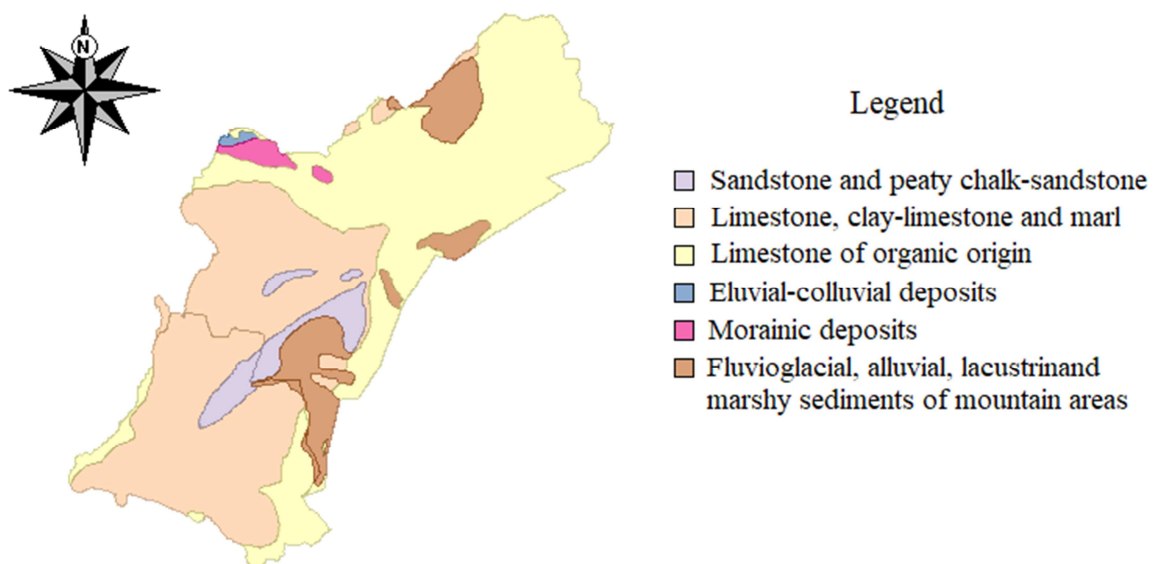


Figure 6: Lithologic map of Cansiglio (own elaboration of data from www.regione.veneto.it)

famous holes are the *Bus de la Lum* and the *Bus della Genziana*, respectively deep 185 and 587m.

Concerning the formation of Cansiglio, it comes from the pressure occurred from south during the Miocene; the pressure joined with complex phenomena is the reason of the NE-SW orientation of Cansiglio (Posenato, 2012).

3.4 Flora and fauna

As stated above, the climate is characterised by high rain precipitations, a high RH index and a mid-low temperature (with heat inversion phenomenon). These typical oceanic climate matched with the altitude perfectly define an eso-mesalpic region which is mainly composed of Beech, Fir and Spruce forests (Del Favero, 1999) as also presented in Figure 2. On one hand, these three main arboreal species can be found pure or mixed because of their peculiar ecological niches. Spruce and beech have big niches while fir is not as adaptable as the other. Even if different in needs, the three species share a common habitat and this is why they are easily found mixed or they alternate generation by generation. Indeed, it has been studied that the three species alternate their dominations over the other species generation by generation. Accordingly, spruce grows over beech and fir, beech over spruce and fir while fir dominates beech and spruce. Despite the oceanic conditions of Cansiglio, spruce is a continental species which is competitive in Cansiglio only because of its high plasticity. Cansiglio is moreover both a SAC and SPA site entering in the NATURA 2000 program. Indeed, 12 habitats present in Cansiglio are protected by the Council Directive 92/43/EEC in the Annex 1 and 3 of these are in the priority list: species-rich *Nardus* grasslands (more than the 23% of this habitat surface is Italian according to Galvnek and Jank (2008)), active raised bogs (in unfavourable state almost in all the countries of Europe (Eionet, 2009)) and the bog woodland habitat (Regione Veneto, 2017). As regards the fauna, Cansiglio is populated by many different mammals, birds, amphibians and reptiles. The mammal class is composed by both herbivorous species and predators (which are coming back in the last period). Since the area is

completely protected, hunting is not allowed and the presence of roe buck (*Capreolus capreolus*), fallow deer (*Dama dama*) and deer (*Cervus elaphus*) is particularly high. This large population use young trees (especially fir, but also beech and spruce) for different necessities; one of these is the trophic use of reachable leaves. This is leading to a huge damage to the forest ability of renewing itself (De Barbara, 2013) as well as the pasture productivity (Marchiori, Sturaro and Ramanzin, 2012). Despite the lack of big predators is heavily felt, they are slowly coming back to Cansiglio also because of the high presence of prey. Even if there are no stable individuals in Cansiglio, exemplars of lynx (*Felis linx*) as well as brown bear (*Ursus arctos*) have been seen. Other predators which populate the site are mustelids such as the marten (*Martes martes*), the beech marten (*Martes foina*) and the weasels (*Mustela nivalis*). Other mammals which inhabit the forest and the pastures of Cansiglio are the fox (*Vulpes vulpes*), the common and the mountain hares (respectively *Lepus europaeus* and *Lepus timidus*), the red squirrel (*Sciurus vulgaris*) and the dormouse (*Glis glis*). These last small mammals are in turn prey of diurnal and nocturnal birds predators which are: the buzzard hawk (*Buteo buteo*), the kestrel hawk (*Falco tinnunculus*), the sparrow hawk (*Accipiter nisus*), occasionally the golden eagle (*Aquila chrysaetos*); the common, pygmy and Tengmalm's owls (respectively *Asio otus*, *Glucidium passerinum* and *Aegolius funereus*) and occasionally the eagle owl (*Bubo bubo*). Other birds which are rarely seen in Cansiglio are those part the grouse sub-family (Tetraoninae). Amphibians such as newts (*Triturus alpestris* and *T. cristatus*) toads, frogs and reptiles (*Vipera aspis*, *V. berus* and *Natrix natrix*) are also present. The mentioned species are just few of those listened in the habitat and bird directives present in the study site. Indeed, Cansiglio hosts 24 species of the annex 3 par. 3, 38 species of the annex 3 par. 2 (and 23 of these are also part of the annex 2 meaning a high protection and relevance).

4 Methodology

The present chapter firstly explains in detail the reason behind the shape of the study and the scaling issue. Afterwards sub-chapters describe (a) how information has been gathered to sum up the reality which answers the study questions, (b) the way I collected information and especially the questions I asked and (c) I individuated the limits of undertaken methodology.

Specific literature review has been carried out to study all the needed methods and procedures for the implementation of such kind of study. Accordingly, I refer to the book of Yin Robert K. (2009) because most of the decisions taken about the study shape are linked to this book statements.

The management of CF is characterised by a high number of variables that increase the complexity of the study. So, the first choice to be take was the form of study method to implement. According to Baxter and Jack (2008), the case study method is the most appropriated type of research to reply to “how and why” questions and particularly adapted for situations where the context and the phenomenon are closely linked.

Secondly, the scaling issue has been faced. Concerning the temporal scale for data collection, a long term scale has been firstly thought to be appropriated in order to see changes over time. Contrastingly, as stated in the background chapter, because of the statements of Nordin, Hanson and Alkan Olsson (2017), a temporal extent of 10 years (dating back to 2007) should be appropriate for the study.

Concerning the spatial scale, Cansiglio forest is split up between two regions (Veneto and Friuli Venezia Giulia) and three provinces (Treviso, Belluno and Pordenone). Despite the different administrative ownings, the management of Cansiglio is tasked only to VA facilitating this phase of the implementation: taking the only Venetian’s part or the whole Cansiglio (*Veneto plus Friuli Venezia Giulia* Regions) is exactly the same.

4.1 Pattern matching

As stated before, case studies and qualitative research methods are useful to analyse phenomena which are hardly explainable by data. This happens because phenomena are integrated into a logic framework. In this thesis I assume that VA's management is the main deliverer of ESs (see statements in the background Gatto *et al.*, (2013)). The logical framework I created is based on the pattern matching method, namely the listening of some theoretical situations that are possibly occurring and replay to our research question. Variables to be considered are many (e.g. state of Cansiglio's ecosystem, political and economic support, etc.) but since this is the first case study carried about Cansiglio and VA's management it is possible to omit other variables and focus on the most important. Under this assumption I draw up the list of "theoretical patterns" from which it will be defined the result of the whole study:

- VA management directly affects CF capacity in supplying ESs (with reported evidences studied by VA itself).
- VA management is ESs-supply oriented. The additional value (not stated by internal studies) given to ESs in CF is the result of VA's investments and efforts only.
- VA management is ESs-supply oriented. The additional value (not stated by internal studies) given to ESs in CF is the result of VA's efforts as well as other external stakeholders.
- VA management aims to provide ESs to the public users but due to external variables (lack of funds, political pressures, opponent, etc.) is not able to achieve its objectives.
- VA management is more market-oriented. Its focus on ESs is present only theoretically.

The precision of each pattern was a compromise between big patterns (which easily cover all the possible outcomes but is less appealing in terms of

evidences) and small one (with more precise evidences but a higher risk to find an empirical pattern out of the theoretical pattern list). The pattern list also tried to integrate secondary variables such as the influence of external variables. This choice has been taken in order to enhance the external trustworthiness of the study findings.

Finally, a literature review has been carried out in order to choose the most appropriate units of analysis. The unit of analysis is an objective measure closely linked to the research question. At the end of the research the units respond to the research question and will be the actual result of the research. According to the literature review, the chosen unit of analysis are: monetary value of the projects focussed on ES, the number of projects themselves and the opinion of stakeholders about the VA's capacity of providing ESs.

4.2 Data collection

Data collection lasted from the 5th June until the 12th November 2017. It was divided into 2 parts: the first, mainly based on document analysis by project managers, was about the projects implemented in Cansiglio; while the second, based on interviews, was about the current management as well as the expected future changes.

Concerning the implemented management, I have firstly carried a semi-structured interview in order to collect detailed information about the number and the investments carried to internalise ESs. An organised catalogue of documents about the incomes of Cansiglio was absent because of the archival organisation of VA (which is not a private enterprise). As a matter of fact, the framework of Cansiglio's management centre is composed by many offices which collect internal documentation individually. The forestry office was indeed separated from the educational- recreational-office (ER office); for this reason interviews were conducted in the two related offices. The interviews took from 1.5 to 2 hours. This is in line with common interviews duration. Indeed, employees did not showed any regret about the duration of the

interviews. Annex 1 shows the actual structure followed and filled during these two interviews. Main topics were (I) general dispositions, (II) management, (III) financials and (IV) post-project evaluation. In the first section I asked background, aims, type of activities and the target group of the implementations in order to understand the context and the reasons of VA's past decisions and management. In the second section I asked the partners, the external collaborators and the modality of involvement while in the third I asked the amount of funds gained or the investment and how these were allocated. The fourth section was composed by evaluation of the projects or the management, the partners and the external collaborators finding positive and negative aspects about each of these. Results of the implementation of each project were also asked in the last section. On the whole, information about eight project implementations were provided. During the interviews I asked archival documentation of all the implemented projects. Despite this, archival data were provided only by the recreational office. The recreational office manager provided 4 internal files³ (one of these concerned a current project) and 16 files composed by the list of all the activities carried out from 2003 to 2017.

The second part of the research is about the current management and the possible changes in future of CF. The objective was to get to know the opinion of a group of VA's employees and a group of stakeholders out of the management of Cansiglio by means of face-to-face interviews. Among all the stakeholders I selected a group of environmentalists because they are the most actively involved in the area. Moreover, their protests gathered a several amount of recognisance and results for 30 years. These results are documented by local newspapers and described in the book published by Michele Boato: "*Quelli delle cause vinte*" (2017). The main results are the stop to the "regulating plan of deer population in the Cansiglio district, 2011-2013" implemented by the Regional Council (OggiTreviso, 2012; Belluno Press, 2013), the stopped projects of the ski-plants which would have connected those

³ By internal files I mean electronic documentation utilised by project managers during the planning phases of the project implementation.

of *Pian Cavallo* and *Nevegal*; the creation of an “harmful” wind farm on the *Pizzoc* mount (Il Gazzettino, 2015; Toio de Savorgnani and Michele Boato, 2017).

Among VA’s staff members, seven people were found to be appropriate for our purpose⁴ because their tasks were those of producing, more or less directly, ESs. Interviews lasted for 1 hour and a half on average. The interviews were divided in three main themes: 1) management priorities and objectives, 2) management’s results and 3) management models.

- 1) The aim of the first section is to identify the current objectives of CF management and defining future prospects. The first question was closed-ended (with marks from 0⁵ to 3) asking to evaluate how much relevance is given to a list of management objectives (comprehensive of ESs as defined by CICES classification) as it is defined by internal regulation and laws. Afterwards I asked if those objectives defined by VA’s regulation were also truly pursued and if priorities should be different from the current ones. The section ended by asking stated objectives for the next future.
- 2) The second section aimed to collect staff opinions about the real results of CF’s management and to see how these results are linked with the management’s aims. I accordingly asked which were the results sought by the initiatives of VA and with which extent these have been reached. I afterwards asked about objectives sought in future by VA and the interviewee’s opinion about these. Pros and cons of the nowadays management of Cansiglio were asked with a focus on defined aspects (technical issues, logistic aspects, relations

⁴ Interviews were collected with Liubachyna Anna, candidate PhD of the University of Padua and Co-Supervisor of the present work. Liubachyna did the draw of the interviews with my help. Accordingly, I have translated interviews in Italian. After I wrote a synthesis of the interviews’ results in both Italian and English. All the interviews were recorded with the consensus of the interviewees.

⁵ The “0” value was possible only in the employees interviews. The lack of this last might have influenced the interviews results as discussed afterwards in the Methodology chapter.

with stakeholders, budget and communication). I moreover asked if revenues from timber production were expected to grow in the next future as well as both the biggest failure and success of Cansiglio's management. The last question was about a prediction of the future of Cansiglio (what is likely to happen and what is hoped to happen).

- 3) The third and last section was shaped in order to better understand how CF is managed from an organisational point of view; to better compare it with other European SFMOs. I asked to explain the current decision making process and which stakeholders are able to influence such process (political parties, hunters associations, farmers, etc.). The opinions of employees about VA's organisational model efficiency was asked too, as well as predictions about possible effects on the ownership of Cansiglio.

The structure followed in all the interview is showed in the Annex 3. Interviews were carried in Italian, in the personal office of each employee. I point out that the job office is a non-neutral place; this might have affected their freedom to express their opinions.

As stated above, having opinions from someone who was external to CF management but who in the meantime bare interest in the future of Cansiglio was important for the thesis aims. As a consequence, an interview was designed and undertaken with a group of environmentalists. In total 8 interviews were completed with a homogeneous participation of associations⁶: 2 mountain wilderness members, 2 were from *Legambiente*, 1 from “*Una montagna di sentieri*” association, 1 from *Ecoistituto del Veneto Alex Langer*, 1 from *Lipu* and 1 from IAC (Italian Alpine Club). The interviews were conducted during an outdoor event organised to celebrate the 30th anniversary of environmentalists' victories in Cansiglio. As introduced before, interviews

⁶ It was our aim also to interview different associations' member in order to have more comprehensive fount of opinions. Interviewing only one of them, for example the *Lipu* association which seeks the birds protection, would have given more relevance to the bird-related management (e.g. choosing only bird-watching activity as the only form of tourism for the future to come).

were composed by both closed- and open-ended questions as well as contingent rating and paired comparisons. The structure and the topic of the interviews followed closely the structure of the interviews with employees to better compare results apart from the questions about the internal management of VA. The first question, for example, asked which management objectives should have been the most important in their opinion. They were, moreover, asked if ownership changes will occur in the nearby future. Environmentalists were finally asked to assess which source of incomes are going to be the most profitable in a short-term future.

4.3 Limits of methodology

The study implementation had some difficulties that are explained now in order to facilitate the comprehension of some results and to make other case study implementation more conscious about possible errors that should be avoided.

A first weak point of this research is the number of interviewees. The average number of interviews carried in qualitative researches is of 31 for qualitative researches and 36 for case studies (Mason, 2010). The first purpose of the study was to do a comparison of two cases (one in Italy and one in European country) but since European SFMOs were not collaborative enough to release interviews, the time to shape an interview and conduct them all was short. Accordingly, interviews' number should have been higher. Another weak point of this study is that not all the stakeholders of the area were considered in the data collection. In case study is particularly important to have interviewees of all the social, economic, and staff's groups which bare interest or are involved in the case. In this case study I considered only two groups (employees and environmentalists) while more groups are involved in the Cansiglio's scenario (tourists, local administrations, nearby communities, hunters, farmers, etc.).

Concerning the shape of the structure of the interview, the table with the possible changes carried by the different kind of privatisation (Annex 3, question n° 15) was considered hard to be understood, too long and even the

different privatisation's forms were not always known by interviewees. This problem was evident since the first interview therefore the table was simplified and the structure of the interview was sent to interviewees before each interview. They were suggested to read the last table in order to inform themselves before the interview. Concerning the shape of charts, the configuration of the interview's first table has been assessed to be not well shaped. 2 of 8 environmentalists noticed the first priority (timber production). This is probably due to the fact that this priority was not on the same line of the ecosystem services. Nevertheless, the most influent constraint along the study implementation was the weather during the environmentalists' interviews. The low temperature, the absence of a table are underestimated features which reduce the comfort and in turn push interviewees to fill the forms hastily. Not surprisingly two interviewees were not collaborative and interested in answering any of the questions. Their responses were similar to "protest" ones in the contest of Contingent Valuations methods (e.g. no replies or only "yes" replies) (Jorgensen *et al.*, 1999). Accordingly, out of 10 interviews, only 8 were considered valid.

5 Results and Discussion

In this section results of the research are presented and discussed according to the research question. Evidences are split up between the management which took place in the past and the management which is now ongoing or will start. I point that if the results of each data lead to the predicted pattern separately, this would gather higher trustworthiness (Yin, 2009).

5.1 Implemented projects in Cansiglio

The delivery of touristic projects is the strategy used by VA to internalise the offer of educational and recreational activities. This sub-chapter is a list comprehensive of all the project and activities implemented in the past by VA. Further subchapters are made for each activity or project; a final sub-chapter sums up the most important statements of all the past VA's implementations.

5.1.1 Cansiglio Card (CC)

The aim of the project was declared to contributing to the promotion of the territory and the conservation of its environmental and cultural heritage by engaging more rural-tourists and spreading the touristic offer to the whole year and not just to the summer period. Exploiting the beauty of the beech forest (red foliage) as well as the deer belling during autumn, snow and ice charm in winter and the flower blooming during spring season were three assessed ways of enlarging the touristic offer. The target of the project was made of tourists coming from the nearby region (Friuli Venezia Giulia, Veneto and Trentino Alto Adige).

The Cansiglio Card (CC) project was compounded by:

- Municipalities of the area, especially: Alpago, Pieve d'Alpago, Tambre, Puos d'Alpago, Chies d' Alpago, Farra d'Alpago, Vittorio Veneto, Fregona, Sarmede, Cappella Maggiore and Cordignano,

- The Alpago's touristic promotion consortium which compound the above-cited municipalities,
- Environmentalist associations, volunteering associations, cooperatives and environmental- touristic-guides which manage activities and buildings linked to Cansiglio Card,
- Economical operator which are linked to the aims of the project.
- Veneto Agricoltura with the role of promotor and coordinator.

Third parts of the project were all the agencies which are directly involved in the touristic offer.

General disposition chapter of the project documentation tasked the leadership to VA for the first implementation of the program. The same paragraph also stated that at the end of the first year of the project the leading role should have been taken by a touristic promotion structure of the area.

The practical implementation of the touristic project was the creation of a "loyalty card" where the purchasers had the access to discounts and deals with partners of the CC program (bars, purchases, entertainment, etc.) as well as free hikes, guided tours in the area, museums, tastings and manifestations. The cards were sold by economics operators of the area (projects partners) at the price of 6 €/card.

Furthermore, the project intended the creation of a website (www.turismoruraleveneto.it) where activities and opportunities were displayed and could have been booked.

The estimate of the project assessed costs for 20.500€ divided among advertisement and promotion, material printing and costs for collaborations (respectively 7.200, 5.600 and 5.500€) plus 1.000€ of general costs.

The project firstly had success (objectively recognised according to the interviewee). As mentioned above, after the first implementation carried by VA the leading role should have been passed to the touristic promotion consortia of

the area. Despite this, the leading role has never been taken by the consortia and the CC project stopped immediately after. The consortia did not take that role because of internal problems which have not been explained. Despite the failure, the shape of the project was assessed to be adapt and well structured. What is happened in the promotion of this project is perfectly aligned with what literature states: effective markets are created when the public support is smaller than the private effort (Gatto, Pettenella and Secco, 2009), and the private part slowly assume more and more responsibilities and leading roles (Sturla, 2012).

Cerquetti (2007) stated that the frequency and of touristic trips are rising oppositely to their duration; these two trends are likely to help small localities' tourism in the case that these last abandon old and losing valorisation strategies. The parochial approach and the low openness of local communities to new form of tourism accordingly brought difficulties and disadvantaged the collaboration for a common good: a genuine touristic business based on Cansiglio' s resources (new touristic markets, conservative and edu – recreational ES supply, etc.).

5.1.2 Sustainable & COoperative REsort (SCORE)

The second touristic project is named SCORE as an abbreviation of Sustainable & COoperative REsort. This project was funded by the European Union (EU). and was also the first interregional project carried out in Cansiglio. Started in 2011 and finished in 2014. Moreover, Cansiglio was firstly rejected and only in 2013 (more or less) recalled by EU. Project's partners were 7 at the first plan but at the end of the implementation they were 6:

- Veneto Agricoltura (Veneto),
- Regione Veneto – sezione turismo (Veneto),
- Touristic promotion consortium of the Tarvisian area (Tarvisio), Sella Nevea and Passo Pramollo (Fiuli Venezia Giulia),

- Agribusiness marketing association of the Carinthia (Carinthia),
- Romantikhôtel Seefisher am Millstätter See (Carinthia),
- Urban planning Institution – Territory development office (Salzburg),

VA took the role of Lead Partner (LP) in the implementation. The background of this program, was characterised by the need of promoting the rural, craftsmanship and natural specialities. The operators' engagement was based on the creation of work packages: work groups which were instructed by ETIFOR, a spin-off agency of the University of Padua. The aim of ETIFOR is to give an expertise for a more sustainable and aware governance or management; this made ETIFOR as the most appropriate institution to train the operators of the project. Operators such as hotels, holiday farms or restaurants owners participated to formative seminars carried by ETIFOR.

Each Partner was also coming from the experience of a loyalty card program and in turn a considerable experience and updated kind of touristic promotion. In line with statements made by Cerquetti (2007) the tourism's seasonality is increasing and this is a common problem of all the involved partners. Subsequently, a common feature of the partners' touristic business was an increasing demand for a sustainable and quality service.

In summary, the similarities among partners' need were several. Because of this situation aims and objectives were similar too. The general aim was to strengthen the touristic sector of the interested areas. The practical objectives were: the creation of a new cross-border touristic region. Secondary objectives were (a) promoting the exchange of touristic promotions techniques (result of years of experience) among partners, (b) develop and share traditional and innovative tourism touristic services, (c) create new synergies among involved regions and as well as famous touristic areas with less-known ones; (d) engage young people in the creation of the project to create an attractive offer for visitors of the same age; (e) the creation of employment opportunities due to the created bonds among partners as well as the re-exploitation of natural and cultural resources, typical products and tourism; and (f) to internationally publicise this new touristic region all over the European countries.

Integrated Touristic Packages (ITPs) were the operational tool of this touristic offer. The structure of the collaboration was split in 6 Work Packages (WP) where: WP1 had the administrative, finance and scientific-technical management; secondly the WP2's aim was to create the territory's promotion initiatives exploiting natural and cultural resources; WP3 organised and promoted ITPs; WP4 worked to enhance the touristic offer of ITPs; WP5 had to use innovative technologies improving the three phases of the journeys (pre-, post-travel and the actual one). In the end WP6 was tasked of informing about ITPs, promoting systems as well as the projects results (creation of brochures, manifestations, the web page creation, the creation of a video to promote ITPs and taking part in an international fair, etc.). In the whole many of the works took place with the efforts and the resources of all the different partners. Among these: elaboration, implementation phases were carried together, personnel was shared and financing was joint. A cross-border ITPs promotion web was assessed to be the main outcome of the project. Additionally, the SCORE program had the impact of increased visibility and competitiveness of the areas in an international business scale and an increased touristic presence. Concerning the partners, the collaboration with Carinthia's partners was not renovated. Oppositely, the partners of Tarvisio and Salzburg considered successful the project's results and agreed for a second Interreg project which is now ongoing: the Go To Nature project.

Additionally, interviewees explained that over the last 40-50 years opportunities to certify or to change the institutional shape of Cansiglio were many. Firstly, as a national park (comprehensive of Grappa's group and Baldo's mount), the request turned secondly into a Regional Park creation. Few years later in the Alps' proclamation as UNESCO world heritage, Cansiglio was part of the first list to be proclaimed but the final version did not comprehend it. At now Cansiglio is a SPA and SAC site and is recognised by UNESCO in the Man And Biosphere (MAB) program. Along all these changes local municipalities and communities strongly opposed to whatever management not carried by themselves. Interviewees agreed that VA is perceived badly by local people. These do not want to create a cooperative

climate to enhance and use the common resources to reach well-being, economic incomes and a healthy ecosystem.

Concerning the funds for the program implementation the 86% of the costs came from public financing requests. If the total cost of the project was of 1.061.000€ whereas 915.400€ were funded. More precisely, these contributions were provided by FESR funds from the Interreg Program IV Italia-Austria as well as Public-National financing. Considering the only VA investment, 290.000€ were budgeted and completely returned by public funds.

5.1.3 Go To Nature project

GOVERNANCE TOURISM and NATURE's project started the 1st of January 2017. The project is the natural continuation of its predecessor SCORE. In this first (interreg) cross-border collaboration an agreement among partners was signed in order to make the collaboration lasting. The call for contribution was the Interreg V-A Italia-Austria – Bando 2016. Since the nature of the project is very similar to the one of SCORE in the following text the most important similarities and differences will be pointed out.

The first difference was the number of collaborators: first and Leader Partner (LP) of the project was still Veneto Agricoltura (Veneto), the second partner (PP1) was the touristic promotion consortium of the Tarvisian area (Tarvisio), Sella Nevea and Passo Pramollo (Fiuli Venezia Giulia), Regione Veneto – Tourism department (Veneto) was the third (PP2) whereas the fourth and the last one was the urban planning institution – territory development office (Salzburg) (PP5). The administrative regions continued to be 3 but two project partners left the collaboration.

A second divergent point was the context and the difficulties to face according to project's documentation: on the first hand the alpine's areas were and are characterised by the moving of youth to the more appealing big cities of the plain, on the other hand low cost tourism is becoming more and more competitive because of cheapness and visibility. These two features of the

alpine area are moreover confirmed by the statistic system of Veneto Region which state a descent trend in the touristic access of mountain areas and Dolomites in the period from 2008 to 2017 (Regione Veneto, 2018). The way to face these two issues was the change of the tourism shape from the corporate-oriented to a community-oriented one. This last and new form of tourism is in line with the strategic plan for the touristic improvement of Italy (2013) because based on the supply of a high quality and sustainable tourism where communities had the main role of leading the touristic offer and to base their livelihood upon natural and cultural resources. But how will this choice respond to the two problems pointed earlier? Community-oriented tourism is assessed to be inclusive, this will encourage young people to remain within the project area and open businesses firstly based on tourism and secondly on other livelihood linked to it. Concerning the necessity of facing the competitiveness of mass tourism, the institution of a cross-border touristic region is essential. Small towns and communities on their own cannot manage to be as competitive as famous cities and capitals (international market). This is the key point of the collaboration itself, with this collaboration the touristic destination is not the small town only but an entire touristic region.

Other issues considered in the project were gender's equality and discrimination. Go To NATURE indirectly contribute to an equal gender employment since it enlarge the touristic sector where female employees are more common than male. Facing discrimination was another aim of the project, support structures were built and ITPs were chosen in order to give accessibility to physically-challenged people.

Since sustainable development was a main feature, 5 sub-objectives were found: (a) creation of a sustainable tourism (potentially by applying to sustainable certifications), (b) the use of pre-existing artificial resources in order to avoid soil depletion (c) improvement and valuing operation of natural relevance's areas as well as (d) cultural and didactical aspects; (e) the reduction of private transportation by promoting the use of sustainable transports was the last practical aim about sustainable development plan.

Index of work were also agreed from partners to see the actual improvement and outcomes carried by the interreg program. These are shown in **Errore. 'origine riferimento non è stata trovata.** and **Errore. L'origine riferimento non è stata trovata..**

Results indicators	Unit	Baseline	Target Value	Description
Numbers of arrival in the project area	Number	29.158.684	34.380.065	The increment of 5% with standing upon traditional market (e.g. Germany, Holland, Belgium, etc.) and penetration into new business of the nature-holiday sector (e.g. Norway, Sweden, Poland)

Table 1: Indicators of the results of the Go To Nature Project (source: archival data of Veneto Agricoltura).

Output indicator	Unite	Quantity	Description
Number of cultural and natural interest's sites	Number	6	2 sites for involved region were. Those sites will be part of projected and promoted ITPs.
Number of new products for the enhancement of attractiveness of natural and patrimony	Number	6	2 new products for involved region (e.g. active holiday, cycle tourism, wellness, food and wine, craft, landscape, etc.)
Number of enterprises which receive support	Number	0	7 enterprises for region. These sit on the table of the participated planning (WP3) and to the workshop for the improvement of the quality (WP5). Involved agencies will be more since the sources will be shared in the web.
Number of enterprises which receive subsidies	Number	0	
Number of enterprises which receive a non-economic support	Number	21	
Surface of habitats benefitted from supports seeking a better state of conservation	Hectare	0	

Table 2:Output indicators of the Go To Nature project (adapted from Archival data of Veneto Agricoltura)

Similarly to the previous Interreg Program, costs are internalised by both EU FESR funds and National contribution. Since Veneto Agricoltura had the leading role, costs were higher than other partners, reaching the number of 312.456€ in total. Of these, 265.588€ came from FESR and 46.868€ from Italian contribution.

5.1.4 Valmontina shelter restoration

The project started on 7th April 2015 and will last till the 2018. The building was once used by scouts and church groups (e.g. Italian Catholic Action or ACI) for activities linked to human capital development. After few years the building was abandoned. The decision was then to restore it with touristic purposes. Since the project is carried to restore the building only, activities were electric, fundament, heating and water systems rehabilitation.

Concerning the management, to choose the restoring company a tendering procedure was done. SILS company won the notice and started to work. Similarly, the management of the building after the restoration, will be given to the winner of a second tender with a concession contract where the winner must follow the rules agreed with VA.

Funds were completely provided by the Regional Committee Resolution n° 458 (DGRV 458/15) with the amount of 500.000€. The whole fund was split among SILS, project and work direction (Architect Dal Pont and Eng. Bortoluzzi) and administration of VA who earned respectively 307.900, 50.000 and 142.000€.

The post-project section was partially considered since works are still ongoing. The progress of these last is assessed to be at the 60%.

5.1.5 Creation of an equipped area for Camping vans

The realisation of the area started in 2016 and finished at the end of August 2017. The background behind the choice of building this area was characterised by an excessive amount of camping vans which arrived in Cansiglio during weekends. Such a huge number of campers was considered to

be dangerous for environment because of the camping vans' discharges. The target group of the project is composed by motor-home tourists.

The creation of the area was carried by VA's personnel (self-managed then). Now the area is directly managed and controlled. Since VA's personnel is lacking in Cansiglio the area is completely automatized . If the area was not so easily manageable it would have been necessary for VA to give the area in concession to a third enterprise.

Funds were coming from the Regional Committee Resolution n° 2853 of the 30/12/13. The whole amount was of 152.000€ which were secondly split up among design and work direction (Architect Fabbrica) – 23.000€; 48.000€ were allocated for another similar project (creation of a car park) and 20.000€ for the restoration of a building belonging to Veneto Region.

Positive aspects concerning the projects were that VA is now earning little amount of money and the pollutant discharges are fewer than before. Additionally, tourists well-seen of having a wholly furnished area.

5.1.6 Wood lots selling

The timber's selling is a basic activity in CF management. Moreover, felling trees is the only way to manage the forest itself. The target customers are wood enterprises and "ITLAS Legno" company.

There are 9 wood companies working in CF (some of them are nominal companies): Azzarini Oscar, De Luca Elio, De Luca SS, *Fratelli* Carlet SNC, Cao Legnami SNC, Tollot Giovanni SRL, Bortoluzzi Armando SNC, *Fratelli* Rovigo SNC, Pizzol Gastone SNC. In particular, ITLAS Labour Legno plays an important role for the timber market of CF. Since 2009 VA is in contract with ITLAS. According to this contract VA must sell all the beech round wood over the diameter of 35cm (high-standing trees only). The contract is finished on the 30th December 2017 and it will probably renewed. The shape of selling is a tender notice.

No funds have been revealed for this activity.

Results of this activity is the selling of 8000m³/year. In the post-activity analysis the interviewee spoke about three main points: (i) the shape of timber selling as well as the number of competitors in the tender notice are appropriate to create a free competition market, encouraging everyone to be active and to work well. (ii) the forest planning follows the principles of Sustainable Forest Management (SFM) and in turn a management which take into account the forest's multi-disciplinarity. The third point (iii) was that since they are an entity of the Region the bureaucracy for timber selling is simplified. Concerning the operators, the officer said that all the companies respect occupational safety standards, whereas 3-4 of them are giving high importance to this aspect.

The interviewee added by itself two relevant pieces of information: on one hand all of CF is PEFC certified. The standards to apply for this certification were, however, less sustainable than those by which CF was already managed. Correspondingly, the application to the certification was considered easy. On the other hand, it has been explained that due to the high population of deer the forest's renewal is strongly limited in its growth. The interviewee said that the public opinion (which is in favour of deer salvation) had a strong influence upon regional institution which imposed VA not to kill any deer. Due to this lack of knowledge, VA is now working on the public formation and especially to explain that forest unbalances are dangerous for the forest itself. Farmers asked for PSR funds to reintegrate costs of electrified fences (costs due to fauna-flora unbalance).

5.1.7 Cansiglio Summer

At first, Regional funds exceeded those needed. For this reason touristic visits (main activities to engage the community) were for free (as a consequence, externalities were created). The aim of Cansiglio Summer is to internalise this service with a pool of various activities shared in a calendar for the whole high season. Activities touched topics such as geomorphology, story,

nature, venetian's confinement, etc. The target group of customers was made of common visitors coming from other Regions and botanical garden tourists.

The internalisation of the service was carried via the payment of a ticket. Partners of this projects were and are (the project is still ongoing) local promotion consortia as well as 7 associations which practically carry the activities:

- CAI,
- The Cimbri's association (responsible of the Human's Museum in Cansiglio),
- Lorenzoni's association,
- Pygmy and Owl's group,
- Alpaggo-Cansiglio's guides,
- Naturally guides association,
- Friulian foresters.

A key role in the program is played by the Botanical Garden of Cansiglio because of its high touristic turnout. The promotion is based on (i) a newsletter which comprehend more than 700 contacts, (ii) a press office with 10.000 contacts and (iii) the VA's web site (but it is now under plan to create a site for Cansiglio summer on its own). This management was clearly based on the passion and the willingness of volunteering associations without whom there would not have been any activity (interviewees gave examples in the nearby area of similar associations which have stopped their activity because of the lack of incomes). Particularly, the efforts are coming from the Cimbri's association which are motivated by their territorial identification with Cansiglio and Lorenzoni's association which work because they are conscious of the ecology's value and they want first to preserve it and secondly to explain it to visitors (creation of ecological consciousness).

Since funds for this sector are not provided all the activities were once considered as volunteer work carried by the associations. During this period from 6 to 7.000€/year were given to those associations (whereas costs for them

were higher) and 40.000€/year were salaries of VA's staff for maintenance works (even if these employees do not work only for education purposes). From this year, a share of the botanical garden's incomes is due to Lorenzoni's association. This choice has been taken both to internalise the costs they carry out and to make them more interested in the promotion of their activities (more customers more earning).

The introduction of payment for the access to guided visits firstly resulted on a steep decrease in the number of visitors (even though it was predicted). Moreover, the free-ride phenomenon was difficult to face (visitors were listening guided tours without paying any ticket. Also this issue was assessed once the ticket was paid to enter the botanical garden and not just for the guided tours (which were accordingly free). Associations have the feeling of being linked to the buildings where they work. The Cimbri's does internal meetings and activities inside the museum and the Lorenzoni's association work in the botanical garden since 1994. The 80% of the visitors come when the two associations are working and VA is not (during weekends). This shows how much associations have been and are necessary for the tourism of Cansiglio. Associations are moreover promoting with social media their activities which is a modern promotion tool not completely exploited by VA. The dialog with the associations is good and few meetings are done every year to program and make the calendar more and more appealing. A critical point for this touristic shape is that those visitors who do not access to the garden or the museum are not countable for VA (they do not exist) while they are probably the biggest part.

A good index to see if the supply of recreational services in Cansiglio are rising is to see the number of activities carried along time. The number of activities carried in Cansiglio (guided tours or general activities) are showed in Figure 7. Further information has been requested to the ER office responsible about data of 2009, 2015 and 2016. The employee explained that the 2009 datum is missing, the lower number of 2015 was confirmed to be as low as showed in the histogram and that during 2016 the office was in lack of funding

so that a proper brochure with the calendar of all the activities of the season was not done.

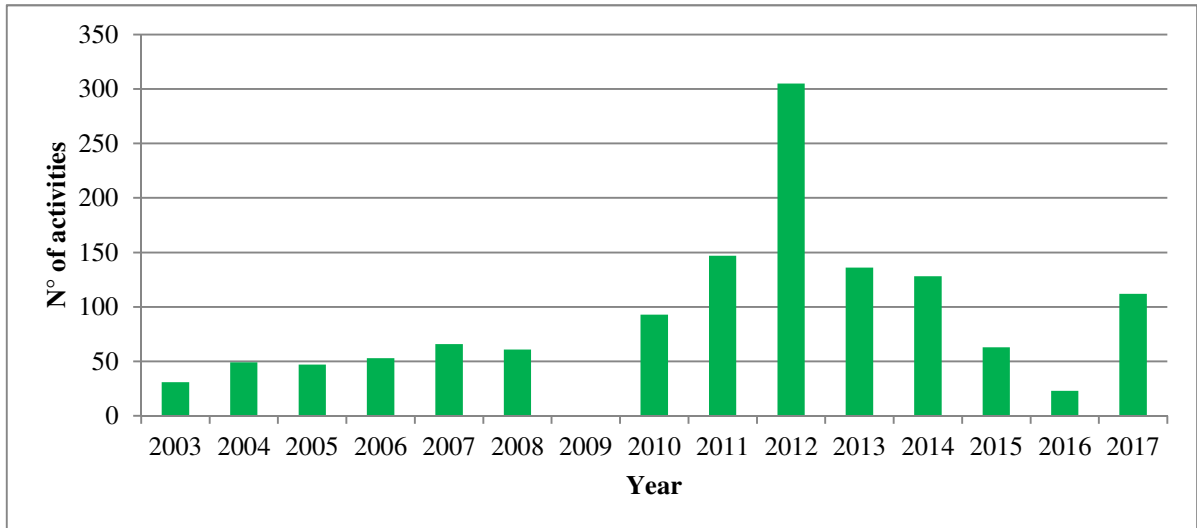


Figure 7: Histogram of the number of counted activities carried in Cansiglio along the years of implementation

5.1.8 Vallorch shelter restoration

Vallorch is an area close to southern entrance of Cansiglio which has been historically populated by Cimbrian people. Now it is one of the attraction for tourists which can see the typical houses of community and even chat with the descendants of the Cimbri's population. The first idea was to create a naturalistic education-centre but this last activity did not give enough economical support to maintain that building. The interviewees (another employee working on the same office took part of the interview) took this topic to explain three more general points which are:

- 1) There were more educational tours. Nowadays the costs for students (from primary school to high school) are rising: the rent for a coach from Conegliano to Cansiglio costs 400€ per day which is on average the 70% of the whole amount for a day trip. Compared to the price of a train ticket to Venice, such costs are not competitive; this situation

strongly affected schools' willingness to propose educational tours in Cansiglio.

Second generations⁷ is also a phenomenon influencing the number of schools' requests. Interviewees estimated that the application of students of not-Italian origin was firstly not as high as students with Italian parents. The causes of this phenomenon are two: lower financial resources of immigrants' families or scarce belonging feeling for the territory and a little interest in discovering it.

A critical point is the lack of a touristic centre. Due to this, VA is perceived by tourists as the authority which took this role. But since VA is not opened when most of the visitors are accessing to Cansiglio, they do not know where to get any information about touristic possibilities.

Aims of this project are both those of entrusting an authority to use the building and provide educational tours and creating an info point beside the S. Osvaldo's bar. Since the creation of an info point is not well seen for agencies the concession contract would clarify that the Vallorch building is given in concession only if the info-point would be created. A special offer could be also to make discovered Cansiglio by night with activities for school. The target group for this are mainly schools and common tourists.

The management was carried until now by the owls group and the concession contract is ending and the new contract will assess the above-mentioned problems.

The project is not started to be planned yet so that interviewees were not able to give information about the financial aspect.

Managers of the buildings carried activities but it has happened that they carried out activities without informing VA. Veneto Agricoltura came to know of those activities only when concluded.

Interviewees also added that farmers consider dairy, meat and goods production as the only possible livelihood. Despite this, the touristic sector is

⁷ Italian children born from foreign parents who immigrated in Italy before the children birth.

rising and reaching more and more recognition. Therefore, farmers are now creating production-recreational markets such as hyppo-tourism linked to meat production chain or forest lots used for both touristic and productive aims.

5.1.9 Past implementation's discussion

This chapter summarises the detailed information which has been pointed in Chapter 5.1 to ameliorate the readability of the results. According to the implemented projects, VA applied to European funded programs in order to improve the promotion technique, create a cross-border touristic region, enhance the tourism sector of the area emphasizing on both environmental resources and the cultural heritage of the area. Concerning European projects, VA has always assumed the role of LP and in the end the main organising member of the collaboration. This is clear index of the efforts given in the touristic sector by VA. Moreover, funds invested in the implementation of the project (and in the end invested in the territory) rose over the three projects. It has also been stated how, after the stopped collaboration with local partners (Cansiglio Card), VA overcame the failure via applying to the IV Interreg program (SCORE project). This is an example of the VA's dedication. The number of activities provided by VA was one of the three unit of analysis taken for this research. As showed in the Figure 7 the number of activities rose over time till 2012 and stabilised around 120 activities/year (despite the 2015's season which was under the average according to the ER office employee).

Of these 7 implementations, 3 were those funded by Regional Committee Resolutions for a total of 652'000€. These 3 projects were interestingly provided for the creation of new buildings (e.g. camper service area) or the restoration of buildings which are given under concession by VA but of property of the Region. A critical point given during the interviews is that the employees confirmed that volunteer associations play the key role in the tourist supply in Cansiglio. Indeed, the 80% of tourists are coming when VA is not opened (weekends). The payment of one seasonal worker by VA would not be possible for the VA's budget and this would anyway replace the supply of only

one activity (e.g. in the botanical garden) but not in all the other touristic attraction. Two important pieces of information collected are those concerning the educational offer for schools. Schools are one of the main channel of the educational offer for Cansiglio. The lack of integration of immigrants' second generation (and in turn a lack in social capitals in the area) as well as the high costs needed to reach Cansiglio's plateau were once compromising the knowledge and the sense of belonging of the territory (loss of human capital). Improving of touristic sector in Cansiglio, is slowly changing the livelihood perception of Cansiglio's farmers. According to employees of the ER office, farmers are now starting to recognise that is possible to earn economic revenues from tourism.

	Cansiglio Card	Score	Go To Nature	Val montina shelter restoration	Camping van area	Wood selling	Cansiglio Summer	Vallorch shelters restoration
Background		Interegional European project asked as good practice a loyalty card program implementation	Natura continuation of the Score project	The shelter was once used by scouts and the Italian catholic association for their activities	Camping vans crowd up Cansiglio every weekend. This brought also problems of wastes' discharges.	Timber production is the only way to manage the forest for years.	A surplus in regional funds is the reason behind the first implementation of touristic activities provided for free to tourists.	It is used as a naturalistic education centre but incomes were not enough to maintain buildings. Lack of an info-point for tourists.
Goals	Territory promotion, spreading of the touristic season,	Creation of a cross-border touristic region; share touristic promotion techniques among partners, engage young people involved in tourism, internationally advertise the touristic region	Face the diaspora phenomenon of youth to cities by creating appealing markets for these last. Face (the cheaper) mass-tourism of big cities by creating a sustainable and high quality touristic offer.	Restore the building to use it for touristic activities.	Regulate the access of Camping vans and their discharges as well as start to earn money from the touristic sector.	Timber production with sustainable forest management	Use the Cansiglio resources and tourism to bring consciousness and knowledge to whom is interested.	Give Vallorch shelter in concession. The concession contract would specify the compulsory creation of a managed info point.
Location	Cansiglio and surrounding towns	Cansiglio, Tarvisio, Salzburg, Carinthia	Cansiglio, Tarvisio, Salzburg	Val Montina	Pian Cansiglio	Cansiglio	Cansiglio	Cansiglio
Involved actors	Municipalities close to Cansiglio,	Veneto Agricoltura, Veneto Region,	Veneto Agricoltura, Veneto Region,	SILS company, Architect	Architect Fabbrica	ITLAS Labour Legno and 9	CAI, Cimbri's association, Lorenzoni's	

	Alpago's touristic promotion consortia, Environmentalist and volunteering associations, Economical operators linked to project's aims	Touristic promotion consortium of Tarvisio, Agribusiness marketing association of Carinthia, Romantikhotel seefisher am Millstatter See, Territory development office of Salzburg.	Touristic promotion consortium of Tarvisio, Territory development office of Salzburg, EUSTAFOR (as third part).	Dal Pont and Eng. Bortoluzzi.		forestry enterprises	association, <i>Gufi e civette's</i> group, Alpago-Cansiglio's guides, Naturally guides association, Friulian foresters.	
Allocated funds	20,500€	290,000€	312,456€	500,000€	23,000€		*see chapter 9.1.7	
- of which EU funds	0%	100%	85%	0%	0%		0%	
Main results	Creation of a loyalty card, spread of the touristic season, increase of tourists arrival.	The extension of the target customers to other countries and cities.	Increase of tourists arrival (5%). 2 new touristic products / services per Region and the integration of 7 businesses for each region into the project design.	Restoration is at the 60% of the progress	Regulation of camping van access without the use of personnel and the discharges control.	Forest sustainable management, biodiversity and forest renovation.	An increased supply of activities. The creation of a rewarding system for the main associations.	Not carried yet.
Post project analysis	The partners who was tasked to receive the leading role avoid this responsibility	The collaboration was successful for most of the partners except from Carinthia's.	Collaboration characterised by experience sharing and high results gained.		Even tourists are well-looking to have a completely	The contract with ITLAS helped to rise the selling price	The dialog with the associations is positive and constructive. They are	School demand had a decrease due to high costs of transports and

	causing the end of project.						furnished area.	of wood.	necessary for the difficult integration of immigrants.	
Interested ESs	Educational- and recreational-services.	Educational- recreational-services improvement.	and	Educational- recreational-services improvement.	and	Indirectly, recreational services	Recreational service and regulating service.	Provisioning, regulating and supporting services.	Educational and recreational-services (part of cultural s.)	Recreational service.

Table 3: Summary of the projects implemented by VA with relative main characteristics (source: own elaboration).

5.2 Current management and possible future changes

In this section prospected possibilities, possible property rights' changes and ESs' supply modality which VA will take according to the opinion of two categories of stakeholders are presented. The two groups of stakeholders are: members of environmentalist associations and VA's employees. Interviews are explained in the study methods chapter and showed in the two Annex 2 and 3. For practical reasons, codes will be used to specify which respondent stated which opinion. Environmentalists are coded with the "E" letter followed by a personal number: E1, E2, E3 etc. while employees are coded with the "I" letter followed by a number too.

5.2.1 Environmentalist and employees' characteristics

Concerning VA's staff interviews, the shape and the questions of the interview are explained in the study methods chapter. I collected a total of 7 interviews from employees who work at a different point of the hierarchical scale. Despite this, two employees (I1, I6) were not asked to reply the whole interview because of time constraints.

The environmentalist's group is represented by people with an average age is of 61 years with a range which goes from 42 to 74 years. Out of the 8 respondents, 7 were men and only 1 woman. The furthest came from Mira in the province of Venice (75 km in a strict line) whereas most of the respondents live in the province of Treviso (50% of them were within a ray of 30 Km).

5.2.2 Priorities and management objectives

Firstly, the interview assessed the importance of the services according to interviewees' point of view. Detail of the replies are showed in the Table 4; the second and third sections are made of the actual responses while the fourth one is composed by the aggregated responses (absolute frequencies). Main

things pointed about this question are that few environmentalists replied the first point (Timber production), E3 and E7 marked few ESs while it has completely fulfilled by two environmentalists only. Frequencies of the answers are showed in the Figure 8.

Goods and services		Environmentalists							Employees							Importance Absolute Frequencies				
		E1	E2	E3	E4	E5	E6	E7	E8	I1	I2	I3	I4	I5	I6	I7	Not applicable	Low	Medium	High
Timber Production			2			3					3	3	3	2		3		0	2	5
Ecosystem Services (CICES)	Fuel-wood production	1	2	3		3			2		3	3	2	2		1		1	4	4
	Pastures and meadows	2	1	3		3			2		2	3	3	3		3		1	3	6
	Hydrologic resources management	3	3		3	3			3	1		3	0	0	0	0	4	1	0	6
	Hydrogeologic protection	3	3		1	3			2	1		3	2	0	1	1	1	4	2	4
	Erosion protection	3	3		1	3				1		3	2	1	1	1		5	1	4
	Extreme event protection	2	3		1	1				1		3	1	1	1	1		7	1	2
	Air ventilation and transpiration	2	3		3	1				1		3	1	3	2	0	1	3	2	4
	Biodiversity	3	3	1	3	3				3		3	3	3	3	3		1	0	10
	Pests control	3	3	1		3				2		3	2	1	3	1		3	2	5
	Recreational activities	2	3		3	1				3		3	2	3	3	3		1	2	7
	Spirituality	2	2		2	1				3		0	1	1	0		2	3	3	1
	Environmental education and science	2	3	2	3	3				1		2	3	3	3	2		1	4	6
	All equally important									3								0	0	1
Other:	Sports												3				0	0	1	
	Wildlife management														2		0	1	0	

Table 4: Aggregated responses of environmentalists and employees with linked absolute frequencies in the fourth section.

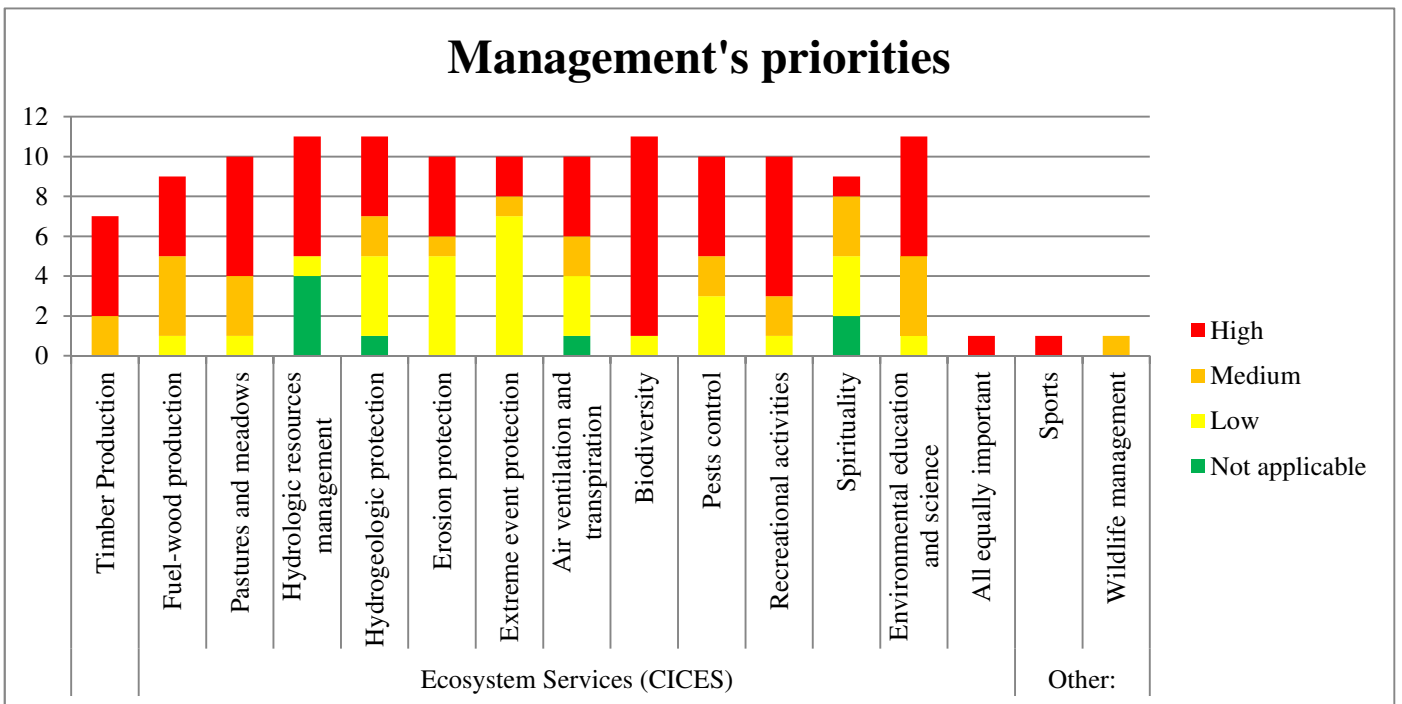


Figure 8: Representation of the aggregated opinions of environmentalists and employees about management priorities for Cansiglio Forest.

The results indicate that management defined by the internal regulation of VA for CF is led with 5 main priorities: timber production, pasture, biodiversity, recreational activities and environmental education.

According to the 80% of VA's staff: log production is one of the most important sector of CF management as defined by regulations. The remaining 20% was of the similar opinion marking it as a medium important objective. As an example of this, most of them explained that CF has been an historical source of timber (see chapter The story). CF has been part of a short chain production for almost 9 years with ITLAS company (TV). This enterprise plays an important role in the forest's economy: ITLAS advertisement campaign is based on the secular history of CF via creating an entire flooring line called "Cansiglio's axes"⁸ (*Assi del Cansiglio*) (ITLAS, 2018). Concerning the firewood and biomass production opinions are divergent: on one side wood for heating systems is a low business but on the other side wood companies have organised themselves very well in providing fuel-wood (which is different from wood chips) especially to pizzerias.

Pastures management is as much important as timber production according to employees (I3, I4, I5, I7) but not for environmentalists who marked it as a mid-important priority. Internal regulation and laws of VA encourage bio-products and attractiveness for tourism (I2, I4). This lead to the enhancement of territory resources such as typical products and landscapes. The five farms of Cansiglio produce dairy products which are sold in the white bar (Pian Cansiglio) exploiting both Km0 and organic products (only four of them).

Water resources management is one of the priorities which better split employees from environmentalists. From the point of view of environmentalists these are of mid high relevance while most of the employees agreed that water resources management was not applicable to CF because of its soil nature. Indeed, in the karst plateau there is not any water grids exception made for rainy days. Under these circumstances two possibilities are

⁸ This is an example of how is it possible to internalise the historical value of Cansiglio, who buy Cansiglio's axes buys also centuries of experience.

that (i) environmentalists' knowledge about Cansiglio's hydrological resources are little or (ii) environmentalists did not understand the meaning of "hydrological resources". Concerning the hydrological protection the opinion of VA's staff is split up. Indeed, only for the "low importance" option two colleagues only agreed. Soil erosion protection resulted one of the less important mansions to be managed in CF. This is again because of the features of the site: Cansiglio is a solid closed basin which do not allow to transport solid particles downstream. They resulted of the same opinion about the protection of extreme events. This is indeed the last priority for the management of CF. This is probably due to the fact that the sustainable forestry carried in CF already do its felling plan considering this aspect.

The air ventilation and transpiration are considered both very important and attractive for tourists: Cansiglio is well linked with the plain and is seen as one of the first mountain sites by citizen of the plain that want to breathe clean air during holidays or one day trips. Contrastingly to this opinion employees also think that there are neither laws nor active management to provide such service since the forest do it itself.

Biodiversity is at the top of the aims of the management according to both employees and environmentalists. For some respondents it was difficult to give a mark to every ES since that forest are managed to provide all the services they can (multifunctionality is the true aim) (I5). Almost the whole surface of CF is SPA according to the directives Birds and Habitat (respectively 79/409 and 92/43 CEE) of the Natura 2000 network. Biodiversity is sought not only because of European directives but also for the internal regulation and aim. One example of active management is the "active cut" of trees implemented by VA. These felling type try to recreate the habitat of a bird species, *Tetrastes bonasia*, which has been dramatically damaged by the high deer population of Cansiglio. Another example given by interviewees is the innovative selling of standing grass. Pastures are usually managed by farmers in Cansiglio; these should cut the grass only after the birth day of new generation of the Corn Crake (*Crex crex*), the 15th July 2017. Instead of giving the concession to these

with the agreement upon the day of grass cutting, VA is now starting to sell the standing grass only after the 15th July. In this way the Corn Crake has time to be born and move.

The pest control split the interviewees into two groups, few are of the opinion that it is not really important according to the laws, other says it is very important. Employees remembered the crucial years among 1989 and 1992 where a beetle of the scolitidae family, the *Cephalcea arvensis*, had a strong and damaging demographic growth which caused the loss of 160ha of forest for a sanitary felling (Annalisa Bessega, 2008). This event brought the alert to pest controls higher for few years but that event was closely linked to an uncommon high temperature condition, now the pest control management is assured by normal forestry practices (I7,I2).

Recreational activities are one of the main sector of activity. Management objectives about the touristic sector are changing quickly over time since the results reached are getting better. The recreational-offer is accordingly earning more and more revenue. Despite incomes from touristic sector are rising, VA is intentionally not creating a business for mass tourism. For Cansiglio, it is of primary importance to attract “nature lovers” and people who want to know and learn about forests and mountains. Tourists accommodation facilities are deliberately not heavily structured for the same reason (contrastingly with other Alpine’s reality like Cortina). An active management of tourist influx is now starting with for example the camper service. VA is moreover creating self-financing point such as a paid parking area.

The spirituality and sacredness topic arises a lot of interest in Cansiglio. The mountain wilderness association strongly affirmed in the past that Cansiglio is an area of strong spiritual value since it has been barely or not-modified by human-being. According to I7 even if the spiritual value of the area is recognised by lot of people there was not the condition to make this become a mountain wilderness site. Employees are mainly divided into two opinions: on one hand there are those who think that the topic is of scarce relevance; on the other hand employees support the idea of enhancing reality around the spiritual

context but they also agreed that there are no regulation or laws speaking about this and in turn there is no management upon this context.

The two groups agreed upon the most important management's priorities: the environmental education and science one. The environmental education is well recognised by internal regulation; there was once an entire section of the administration designed to work with the purpose of supplying this kind of education (I7). Despite the strong recognition and framework supported by laws and internal regulation about environmental education, the science context is formally encouraged but is practically absent. There is the opinion that despite the possibilities offered by Cansiglio for researches, the scientific community shows a lack of interest. None of the employees thought that all the function of the forest has the same relevance.

The interviewees eventually had the possibility to add priorities to the list. Two of them added two different priorities: sports and wildlife management. I4 added sport relevance thinking that it plays an important role in the management of CF because of the high affluence of that kind of tourists. I7 on another way, added wildlife management as an issue of medium relevance. The current legislation does not allow any hunt permission in all the state-owned forests. The issue is that this legislation date back to a period when poaching was spreading and carnivorous species were getting less and less in the Alps. But now the situation is completely changed: predators are coming back and preys are the main cause of unbalances in Cansiglio. Under this old and not adaptable legislation there are two major losses: forest rejuvenation is missing and there is a lack of incomes from a big market. According to the interviewees some European findings showed that incomes from hunting regulation are similar to those of timber production. Such a big source of money could be reinvested for biodiversity aims.

Moreover, most of the employees think that priorities match well with the undertaken land management (I3, I4, I5, I7) for two reasons: the legislative requirements and the internal regulation of VA called "la prassi" (I5, I7). Practical examples are the camper service creation, the restructuration of the

former NATO hangar which will host touristic, recreational and cultural activities and the applied silviculture which follows sustainable approaches. Important notation is that lot of practical acts are carried because of the “prassi” while for legislation they would not be needed. The “prassi” is created according to the sensibility of VA to different themes. Because of the internal regulation, VA is open-minded to set new priorities according to the will and the needs of the public.

Despite the fact that employees approve VA’s management prerogatives, some of them think that some priorities should be different (I2, I7).

It is thought that the spirituality context is strangely seen by society if not correlated to the well-being world. Despite this context is not regulated by the internal regulation, Cansiglio is a destination for a lot of users who do spiritual linked activities. Disables come from plain’s cities to take off stresses in a natural context and young school classes sometimes carry spiritual-forest activities to make them feel in contact with forests.

A second reason why legislation should be changed is that it is too wide and it does not give specific lines of management. As example of this, VA recently received a set of rather general guidelines (coming from Veneto Region) to manage state forests. These guidelines mainly asked to maintain PEFC certification and to fell at least the 60% of the forest increase. The maintenance of FSC certification is something that VA would have done on its own since is the only way to assure a quality product chain. Speaking about legislation and State Forest Management Organisation the I7 think that SFMOs or in the Italian context Regional Agencies for forest management should be an example of high quality management in the territory. This was once declared in the Luzzati Law n°277 of the 1910: the Italian state forest organisation must (i) create a national strategic resource and (ii) to be example of a qualitative forest management.

Employees were afterward asked to give the main objectives or aims of the next 5-10 years. The protection of biodiversity is one of the priorities which

must continue (I2, I3) while habitats monitoring have to be enhanced (I1,I4). As a consequence timber production should keep going with a sustainable management. Concerning the biodiversity enhancement, engaging farmers and upgrade their knowledge about the importance of habitat protection (VINCA's relevance or Natura 2000 Network) will be a possible arrangement (I4). Transform the deer issue into a positive resource will be another important aim for VA. The creation of a proper wildlife management will take back the so called "forestry cynegetic balance" (archaic term coming from the French word *cynégétique* which mean "hunting") (I3, I7).

Secondly, the enhancement of the touristic utilisation of Cansiglio will be a priority. For example it will be provided via the creation of a new multipurpose area in the former NATO hangar for popular and cultural uses, music events and theatre shows. Another project is to create a crown footpath: a structure which allow to walk above the tree's canopy involving big opportunities for tourists education and bird watcher.

5.2.3 Management's results

The second theme of the interview of employees' group focussed on the management results. Employees gave their opinion about which results they have seen and with which extent. Production aims are considered completely reached thanks to the contract with ITLAS and because of the sustainable approach use for the felling plan (I2, I4, I7).

Oppositely, biodiversity objectives have been partially achieved (I3, I4, I7). On one hand objectives about birds' preservation have been reached but on the other hand funds for monitoring the state of habitats are lacking (I4) and objectives for floristic species are missing. Only basic monitoring has been done so far. A big issue is that some parcels were under concession when the area has been declared SPA and SAC: this mean that the contract with concessioners is not modifiable yet and they can manage their granted soil with less restriction compared to those of a Nature 2000 area. External operation such as the botanical garden maintenance, the former NATO base restoration

and the camper service are three examples of successfully undertaken aims in the touristic sector (I2, I3, I5). Despite this, touristic objectives are not completely reached (I2, I3, I4, I5, I7): local administrations see VA as a foreign settler who manages lands once the property of local people (situation similar to the *Serenissima* republic). Confirming this feature, Cantiani (2012) stated that involving communities in a participatory process is frequently a problem in the southern European countries; a certain degree of resistance can be expected especially in rural areas regarding forest management. Since local communities are against the VA's management they do not collaborate. This background brings trade-offs in the tourism sector where both parties (VA and municipalities) could grow much more faster and create great synergies. According to Sturla (2012) co-management forms composed by positive private-public collaborators are possible. Moreover the creation of PES schemes are more frequent where bottom-up processes are enhanced (Gatto, Pettenella and Secco, 2009). Possibilities to enhance such collaboration are clearly stated by Cantiani (2012) who particularly suggests (i) a two-way communication where scientific expertise and local knowledge converge and (ii) the creation of short-term projects where the communities are the first beneficiaries are the base to create a mutual trust climate.

Other objectives which have not been achieved are: the collaboration with the scientific world (I4, I7) and the infrastructure maintenance (I5) which is an operation tasked to VA. This last is also trying to spread the knowledge about the accuracy of its management among the users but this is not completely achieved (I7). The only "not achieved" objective was the cynegenic balance (I7).

Employees were afterwards asked about future planned results and if they agree with them or they think aims should be different. Concerning the timber production it is a common opinion that incomes and felling will rise since the Region imposed a higher levy of wood of the 10% (I4, I5, I7). The tourist recognition is becoming higher and higher and it is likely to become of first

relevance for CF (I2, I7). Despite this, incomes from this sector are really linked to the weather conditions (VA earns more in sunny summers rather than rainy ones) and it is hard to make previsions (I2). Concerning the biodiversity aims the increase of habitat monitoring is planned as soon as funds are found (I4). A more balanced ecosystem will be an important aim carried by the wildlife management (hunting permission or foreign hunting intervention). Regarding the collaboration with local communities new forces will be put to strengthen synergetic collaborations (I2, I5). An important variable for this question has been pointed out by two employees who said that since VA is under organisational reformation, collaborations has not started yet (I3, I5). In the end, the restoration and maintenance of regional buildings will be one of the sought objectives. This will be of difficult realisation with regional funds since Regione Veneto is giving less and less money. Despite this, other sources of incomes such as a paid innovative parking place are under consideration. VA's staff agreed that laid down objective are in line with the main priorities and there is no need for additional objectives.

Regarding the management and CF reality, employees were asked to find main positive and negative aspects about technical issues, logistic and organisational aspects, relation with stakeholders, budget, communication and popular culture (added by an interviewee). Remembering the purpose of the case study only topics related to ecosystem services supply will be reported below and aggregated in the Table 5.

- **Technical issues:** A negative aspect of the forest's multifunctionality is that sometimes the paths used by tourists are the same used by foresters for the log hauling. Harvester easily makes holes in the ground and make the paths inaccessible. Moreover the path network is not always clear because signposting is not always present. Another important issue is that the lack of technical responses to environmental problematics lead space for anyone to give opinions and those technical issues easily become a social media affair. Social media gives a big pressure to political decision maker and these are the main obstacles to

implement technical management (deer hunting's conflict perfectly matches with this situation) (I5). The spending review carried by national policy has strongly influenced the employment and in turn carried the lack of turnover (young generation). Contrastingly, positive aspects are the presence of a passionate and expert Staff team (I6, I7) as well as the fact that forests are managed by forester while forests managed by municipalities are usually handled by common employees who did not had a forestry degree most of the time (I7). Since VA is an entity under regional control the felling plan is made and approved internally which make bureaucracy easier compared to private owners.

- **Logistic:** shortage of personnel is a problem (I4, I6, I3). In some situation this decreases the efficiency of work because each employee has a big amount of skills in many different tasks but he or she is not specified in one or few of them. Work efficiency is accordingly compromised (I3). Bureaucracy is a topic exposed by many employees (remembering that they deal with different amounts of red tape since they are at different point of the hierarchical scale). Few of them (I3,I6) think that is not too hard to deal with such amount of commissions but that it can be used as an excuse not to do or start to work on something. By way of contrast other employees think that red tapes are excessive. Finally, the extension of Cansiglio is both source of a positive and a negative aspect: the negative aspect of managing such a small area is that constant costs are not internalised as much easily as it would be with a bigger area but the positive aspect of the "smallness" of Cansiglio is that it has been easily created a 0 Km business. Among all the pros of organisational framework of Cansiglio, the dislocated branch is of incredible relevance for the management success (I2,I6,I7). The branch is seen as a real presence of VA in the territory, examples of areas managed by VA which are managed from the headquarter clearly confirm the importance of being physically in the territory. Another positive aspect in the organisation of VA is that in the

recreational-offer is easily promoted via the mailing list of VA which is comprehensive of more than 1000 contacts. The last positive aspect of the organisational shape of VA is that Cansiglio is a well located area in term of firewood supply chain when it is not always present a big basin of firewood users.

- **Relation with stakeholders:** difficulties linked to this topic are coming mainly because it is difficult to deal with all the interests of stakeholders in Cansiglio. High pressures come from concessionaires (I1, I3, I4, I5). For example, Cimbri's association farmers seek the property or the modification of the concession contracts. In the touristic sector relation with stakeholders are fundamental: if hotels and touristic accommodations expose the activities of Cansiglio Summer for example the tourism effect bring life to both the parties otherwise there is only a conflict of interest (I2, I4). Accordingly, employees opinion is that a structured consultation table is missing (I7). This table would bring a collaborative climate where relations are more transparent (relation with stakeholders are lacking of transparency so far). The present hostile climate is so similar to the past relationship of the Republic of Venice with Cansiglio's citizens that it is possible to hypothesize that local communities have transmit from generation to generation a closed behaviour in front of whoever is managing Cansiglio forest. Further social studies upon this topic might be interesting. On the contrary, there are some realities of positive collaboration, one among all: the Lorenzoni association. These realities are made of young collaborators with whom they are following a development path. This is essentially because VA is opened to dialogs with those who bear interests.
- **Budget:** the lack of funds from the Region is clear for most of the employees (I1, I3, I4, I5), this effects in the personnel turnover (cited above) and technical issues such as the missing path signage. On the contrary, there is who says that funding are not exactly lacking but it is more a matter of stiffness to new sources of incomes mainly because of

rules or procedures to be implemented or a matter of velocity of applying for fund requests (I6 and I7). The budget lacking background underpinned the improvement of VA's employees skills in finding different economic solutions. In this case the idea of a payment to access to Cansiglio is both a potential source of income and a way for increasing the consciousness about the costs of the ecosystem conservation (awareness about internalisation processes) (I5). The actual organisation of investments is that money gained in Cansiglio are reinvested by the main headquarter in the same area the year after. According to most of the employees this organisation is right and useful (I2, I3, I5, I7). Moreover the investments on Camper service and the hangar restoration is symptom of attention of VA to PES.

- **Communication:** this resulted as a critical point especially for the recreational-offer promotion and results. It is clear for employees that a well promoted activity gathers more recognition and tourists (I2). Despite this, communication strategies are not well carried for I3 and I4. Of the same idea is the I7 who thinks that social networks are partially used compared to the possibility they offer. Also for this reason the lack of turnover might be of major relevance. Positive aspects linked to the communication is that lot of people bear interest to Cansiglio and social media are not different. For this reason the possibility of education and tourism are high (I1). Moreover VA is now creating a new web site with more links to social medias, features that suggest an attempt to improve VA's communications.
- **Popular culture:** a big issue in Italian culture is that tourists are used to be free riders of environmental services (agreed by literature (Gatto *et al.*, 2013)); in other words it is commonly thought that there is no need to pay to visit forests or mountains while managers pay to restore and protect them (I5). On the contrary in France and the U.S. to visit any park you pay entrance and tickets must be book even months before.

A summary of the main points stated by employees are showed in the following table of content (Table 5).

Topic	Problem-Difficulties	Pros-Opportunities
Technical issues	Unclear path network and lack of clear reply to technical issues (e.g. deer conflict)	Expert and passionate staff bring efficiency and quality to service. Little bureaucracy is needed for harvesting operation's approval.
Logistic	High bureaucracy lead slow management. Cansiglio is a small reality full of expert managers (waste of knowledge for the territory).	Support of the head-quarter for printing and divulgation. Cansiglio's branch is crucial for the management. The small area helped to create a KM0 market.
Relation with stakeholders	Relations with local communities are not positive. Lack of structures to share objectives for common development.	Young and motivated collaborators. Good collaborations bring visitors. Good dialog with volunteer associations. ITLAS project. Concessionaires maintain the territory.
Budget	Budgetary shortage is undertaken by Region.	The lack of funds push VA to find win-win solutions. PES are perfect to make tourists aware of forests' management costs. Profits are reinvested.
Communication	The use of social networks are badly managed by VA to engage tourists.	Lot of interests are given to Cansiglio; this bring social media to disclose VA's work and offers. ITLAS advertisement. Newsletters has a high number of contacts.
Popular culture	In Italy we are used to get benefits from ESs without paying for their supply.	

Table 5: Summary of the main difficulties and opportunities linked to technical issues, logistic, relation with stakeholders, budget, communication and popular culture.

Interviewees explained afterwards the organisation that VA have concerning money and revenues from Cansiglio. During the last question it has been

explained that revenues coming from Cansiglio are completely reinvested in the same area. With a sharp outlook they added that basically incomes from Cansiglio are given to the central administration of VA each year. The following year the central administration share all the funds among all the detached offices, they could in turn allocate to Cansiglio less than the amount they receive but this does not happen because of the decision of the central administration.

Concerning the last 10 years, employees were asked to individuate the greatest results obtained and the biggest failure. Among the most important results, the ITLAS agreement earned the highest consideration of employees (I2, I3, I4) while the maintenance of the PEFC certification was important too (I3). While last two results are production-linked, an important result in the tourist offer is the extension of the touristic flow period at the entire year thanks to interregional collaborations as well as their ability to offer activities and services (I2). According to I5 one of the most important results is that they had been able to give maximum expression to all the functions of the forest in once; it is indeed not easy to improve timber production, biodiversity, and tourism all together.

In the meantime failures are: (i) the lack of a positive collaboration with local communities where everyone is more taking care of antipathies (I2,I4), (ii) the loss of few facilities for accommodation use, and (iii) the incapacity of implementing a valid and qualified wildlife management (I5). Despite these opinions, most of the employees believe that calling them “failures” is too much while they are more “not resolved aims” (I2, I3, I5).

The last question of the management results section asked to interviewees how do they see the future of CF in the reality (most likely future) and in their opinion (what they actually hope). The more realistic possibility for employees is that the forest management will not be too different from the nowadays one even if in their opinion, a privatisation process is not unlikely to occur (I3, I4). There is also the possibility that local communities or third party may bear interest in investing money in the territory and in Cansiglio (I5). Concerning

the hopes of employees, I3 would see Cansiglio become a regional reserve (contrastingly with the hopes of local people who want it to become a regional park which is more locally managed) to have a unique management of the area. Of the same opinion is I4 who hopes a unique management of Cansiglio. Other hopes are solving the deer issue and the creation of a more residential touristic accommodation in order to create a direct dialogue between local people and tourists. Other hopes are that public awareness about the costs of environmental conservation would rise and that decision about VA's budget and investments would be more transparent.

5.2.4 Management model

According to employees' statements, so far the decision making model is followed only when decisions has a mid-high importance. Accordingly for less important decisions, the responsibility of decisions goes directly to white collars (for example the date of a touristic event goes to the recreational office and it does not need other confirmations from section directors) (I4, I6). For formal decisions, firstly a meeting with colleagues of the same management area take place; here an agreement upon a choice and a proposal must be dealt. Secondly, the complex unite director who attended the meeting give the proposal to his superior: the section director. All the section directors constitute the management committee, entity which meets weekly and approves or denies proposals (I4, I6).

Concerning proposal, the shape of the decision making chain follows a bottom up structure (proposal starts from lower layers of the hierarchical scale). Despite this, the last decision are usually agreed at a higher layer. In budget decisions proposals start from directors of VA and are examined by VA and approved by the Region; regarding the forest management decisions directors of this section follows the felling plan redacted by the region (*Piano di Assestamento Forestale*) and propose their plans which is checked and approved by VA core management (but it is usually confirmed since directors

of the fells is skilled and has a long experience in the field). Speaking about administrative decisions in Cansiglio for small choices the director of the centre has the last decision, otherwise is the central headquarter who has the power.

Decisions about territory in Veneto Region are particularly hard to be taken since there is a huge media and political movement around this topic. Political parties (or politicians who has a role in administrations) have from medium (I2, I5) to high (I1, I3, I4) influence in the VA's decision making process according to most of the employees. This ability is comparable only with the one of environmentalists (medium for I2, I3, I7 and high for I1 and I4). A low capacity to influence decisions has been estimated for farmers, hunters as well as hunter association, forest's users and the science community.

Half of the employees think that the present management is not sufficiently efficient. For example the I1 takes the view that studies about the corn crake or the grouse (e.g. *Tetrao tetrix*) are not enough (and those are species protected by Birds directive 79/409). Moreover, concerning tourism sector: Veneto is the first Region in Italy and the Regional administration should allocate more funds in this sector to strengthen naturalistic tourism but this form of tourism is probably not recognised in this country yet (I2). Another form of inefficiency is a lack of multifunctional management due to the too strong sectorial organisation (I6). The management of a state owned forest, detached from the territory is pointless and outdated. A model where VA (because of its resources and experience in the forest management), function as a guide of a bigger area (called "big Cansiglio") could be more efficient: a consortium model in Cansiglio could work efficiently (I7). This possibility is supported also from Sturla (2012) who state that the presence of efficient consortia is almost essential for the instauration of a collaboration between private and public owners. In support of this opinion, Costantini *et al.* (2017) think that large and public properties could be advantageous in comparison with small and private ones (main characteristic of the Italian reality).

In the context of money allocation, employees agree that the current model is adequate even if a big issue is that ESs are not internalised yet. Even if forests are public the cost of maintain them is high and to preserve them a payment (in whatever form) is needed (I5, I6). What will be the first source of income is a question which split up the group of environmentalists from that of employees. According to the first group, in a short-term period tourism sector will beat timber production (E1, E2, E3, E4, E5, E7, E8). A detail of the main sources of incomes according to environmentalists are displayed in Figure 9. What environmentalists suppose about future incomes sources is in line with what Cerquetti (2007) says: the culture-base tourism, comprehensive of oenogastronomy and cultural heritage, is increasing.

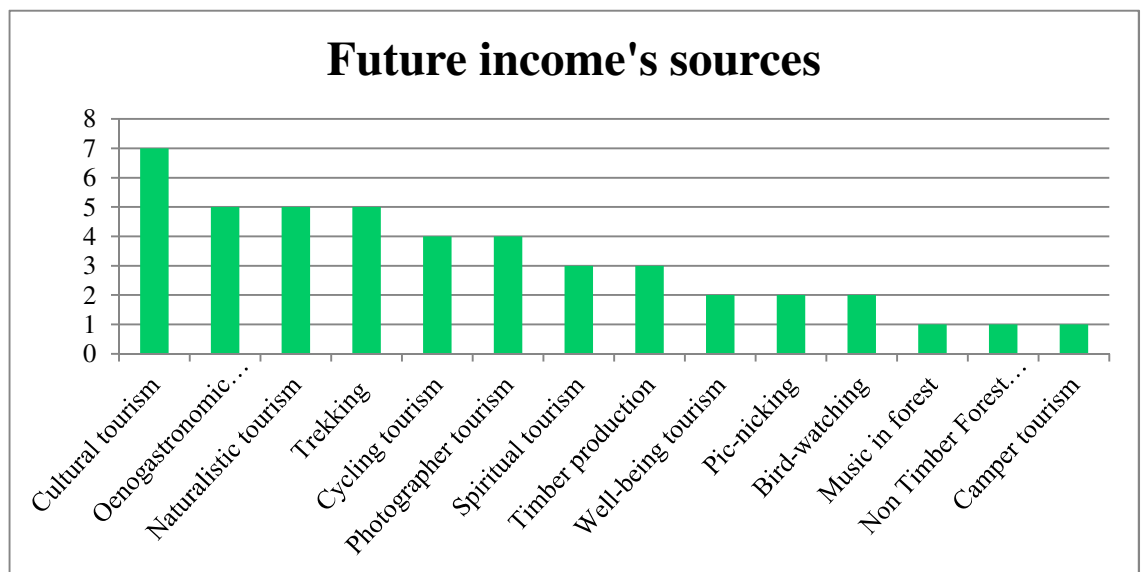


Figure 9: Histogram representing the main source of incomes according to environmentalists opinion.

By way of contrast employees think that in a short-term period will remain the timber sale (I1, I3, I5, I6, I7) while in a long term scale revenues from recreational sector will be the main source (I1, I2, I3, I4, I5) or will equalise revenues from timber production (I6). According to an assessment carried by VA, revenues from parking fees may reach at least 200'000€/year (I7). Similarly, deer venison is estimated to provide to VA between 100'000 and

150'000€/year (I7)⁹. PES are also an opportunity, but this kind of markets is not sought by VA at the moment. Despite all the considerations, the I1 thinks that even if revenues from wood production is higher than tourist incomes, the economic mobility created by tourism is way higher (economic revenues of the area and not of VA only).

Realities and studies where a re-organisation of management model in the forestry sector are not missing (Hall, 1997; White and Martin, 2002; World Bank, 2005; Kant, 2009; Wright and Andersson, 2013). These realities vary according to the features of each case. For example long-term concession in favour of privates is linked with industrial logging (Karsenty *et al.*, 2008) and NGOs are more linked to community-based management in developing countries (Pretty and Ward, 2001). As concern businesses' property rights, these are probably going to change. In a short term period they will probably remain under concession (I1, I2, I3, I6, I7, E5) but in an longer time scale they will remain to public entities for some (I1, I2, I3, I7, E5) and will be privatised for others (I4, I5, I6, E7). Two environmentalists thought that changes are likely to occur for meadows and pastures: these may get privatised indeed (E6, E7). The majority of interviewees think that the current situation is the ideal one. Contrastingly there is who trust also in the consortium shape (I7) and the privatisation of those businesses which do not play any role in the territory's image or that are not harmful for the environment (not pastures or meadows but bars, restaurants etc.).

Literature highlights how much public managers are linked to PES markets (Gatto, Pettenella and Secco, 2009). Moreover, clear property rights are one of the absolute precondition for the implementation of a successful PES market (Wunder, 2005; Sattler and Matzdorf, 2013; Fripp, 2014). I accordingly asked Cansiglio's stakeholders to express their opinion about 4 different management models where public body would play different roles: privatisation, a long term concession in favour of an NGO, long term concession signed by private enterprises and the creation of a company under state control. Interviewees

⁹ Evidences about this assessment are lacking both from VA and from literature. The statements refer to the precise citation of interviewee.

were mainly against forest's privatisation, concession to NGOs, concession to privates, and privatisation of the operation under Regional control. In the hypothesis of a complete privatisation the common opinion was that private enterprises would cut more whenever possible and overexploit the soil; this would lead in turn an impoverishment of the resources (stock undermining) (I1, I3, I5, I6, E1, E7, E8) without bringing any benefit to the local economy (I1, I2, I3 I4, I6, I7, E1, E8) especially in case of foreign enterprises (I5). Stakeholders such as tourists (a big part of the stakeholders) would be expropriated from the possibility to access to the forest. In the case of NGOs' concessions employees and environmentalists were of different opinions. Employees think that a too high protectionism would affect the forest too: forest need to be fell to renew itself. Accordingly, the environment would be possibly disadvantaged. For few respondents of both the groups a concession in favour of an international NGOs would allocate benefits (money) earned from the forest and invested in a different country. The situation for tourists would not change too much since they would have the right to access to forests whereas local people would be probably disappointed (they would see the NGOs as an even worst outlander). I6, based on the past experiences it had with NGOs, is of the opinion that those realities are always looking for funds and this take them off from the possibility of carry a qualitative management of whatever resource despite their high knowledge and passion. Oppositely, most of the environmentalist assumed a slightly favourable situation for the environment, the economic situation and the stakeholders (E2, E4) proposing *Libera* as a possible example (E2). According to all the employees the situation in case of a long-term concession to private entities would not change at all from the privatisation hypothesis. Concerning the assumption of privatising all the operations, few (I7, E1, E2) were well looking to this possibility (if the control would be rigorous) while the other member of the staff were mostly thinking that it would not change that much from the current situation (I3, I6). E8 was of the opinion that consequences would have been the same of the selling to private enterprises since in the Italian context control agencies are always late and the justice system is not working properly so that once an

environmental damage would be done the responsible would be out of charges. To summarise, employees think that any forest management which is carried by any entity who has different life lengths from the forest turn (e.g. concessionaires or common people) is dangerous and the more the manager life is close to the forest's life the more the objectives are sustainable (state entities are the only who can bear such responsibility). Of similar opinion were the environmentalists which stated that the change of property is dangerous (E1, E3, E5, E6) or a predicted failure (E2, E4, E7, E8). Moreover the fragmentation of Cansiglio carried by the privatisation would split the management resulting in mismanagement and fragmented ecosystem. Half of them think that the interests are at the base of the management so that private interests will never apply a sensitive managements to public necessities (E1, E7, E8). A justification in support of the dangerousness of privatisation is that the difference between Cansiglio forest and surrounding forests is tangible. Such difference is due to the fact that Cansiglio come from centuries of public management whereas nearby forests were and are privately owned.

6 Conclusions

As Regional Agency, Veneto Agricoltura is managing the public forest of Cansiglio in order to enhance and produce goods and services for the population. Contrastingly, the multidisciplinary nature of forests as well as the complexity of the agency itself bring uncertainty in the ESs (or public goods) supply chain. Collected information helped to point two main discussion topics: the organisational model and the priorities in ESs production.

Concerning the ESs production, the 5 aimed priorities by VA have been assessed to be: Timber production, pasture management, biodiversity protection, recreational offer and educational-service supply. Accordingly, few questions arose: are these five priorities in line with the undertaken management? Are they related to the real necessities of the population? The undertaken management and planning has brought to CF mainly educational and recreational services supply and timber goods. Contrastingly, management and planning which directly improve habitats state and biodiversity conservation is small if not completely lacking. On a practical way, only few are the examples of a practical and clear management of pastures since these are managed by concessionaires. This is probably due to a not-clear shape of pastures concessions contract which can bring negative trade-off in future if not changed. Concerning the second question arose during the study implementation further studies need to be done. From literature review, VA management is in line with the only activities practiced by visitors of Cansiglio but aims of VA management and willingness to pay of Venetian users are not in line (C-sequestration and recreation).

Concerning the research question, it is clear that VA takes care of the necessities of the average public user during the management planning. Contrastingly, it is important to point that direct management for some things is missing. A key information discovered by this study is that touristic activities are provided by private collaborators during the weekends when VA is closed. Accordingly, the pattern which better represents the case of Cansiglio

is that VA's management is ESs-supply oriented and the additional value (not stated by internal studies) given to ESs in CF is the result of VA's efforts as well as other external stakeholders.

A major problem stated is the communication and the local people (administration) engagement. Past management of VA tried to strengthen relationships with local people via touristic planning meetings without any result. The reason behind the failed relationship might be the conflictive context of the engagement (the tourist promotion). In this case the proposal of collaboration under a consortium shape seems to be even more problematic (lot of interests in the area are brought in the timber production). A suggestion to solve this situation, is the creation of a three components collaboration where an impartial institution take care of the relationship's creation. This third entity may be a university or a social cooperative. Another possibility is the creation of a technical issues desk where local peoples can ask qualified and technical solutions to VA's staff. This could slowly change the common opinion of locals and improve relations for future synergies. Concerning the communication problem, VA's plan for future is strongly facing this issue: the creation of an info-point given in concession with S. Osvaldo bar as well as, the reformation of the VA's web site and more importantly the assignation of the former NATO base as frontal centre for divulgation events are effective communication tools.

Concerning the organisational model, interested stakeholders agreed that a privatisation process for forested lands is unlikely to occur (in line with what found in literature) both in long and short term periods. The creation of a company under state control is similarly not feasible in the case of Cansiglio due to small market-sources on which is based (timber production is too small). However, the creation of a consortium comprehensive of the nearby forested lands with a highly acknowledged and structured body such as VA as well as the creation of PES markets might be a way to solve such problem. Despite this possibility, evidences of co-managements where the private-component is economically detached from public funds has not been found yet. Moreover CF

has historically been public-owned and it will likely remain so. The model of a long-term concession signed by NGOs has been assessed to be out of the context for Cansiglio. Despite the fact of a probable excessive protectionism of the forest (with forestry problem related), the NGOs would probably release the right to access to public users, with relative tourism-based markets and enhanced livelihood production in the area. On the contrary, a long-term concession to private companies seems to be possible from collected data. Signs of this possibility are already present: some of the operation carried in Cansiglio born from long term concession. In this last case, public regulation would be of key-role. Among all the possibilities, evidences stated that the current management (unchanged scenario) is more favourable since all the incomes are reinvested on the territory because VA is not dependent from any of the FC productions.

Finally, few considerations can be argued about the funds sources. With the premise that VA is the operative agency of Regione Veneto and is in turn subsidised by this last: out of the several projects and activities brought to life by VA management in the recreational and educational supply, only one was funded by the Region. After this implementation, projects were (and are) funded by European funds and activities are carried thanks to new form of payment of VA's collaborators. In a nutshell, while VA is able to provide touristic services (just one among all the aimed services), the Regional body is not subsidising for such important form of livelihood.

6.1 Recommendations for further research

The case of Cansiglio forest management is characterised by a high amount of variable which are partially or not considered in this work. For this reason, further studies are suggested. One of these is in line with the study carried by Nordin, Hanson and Alkan Olsson (2017). The aim of this could be doing a qualitative analysis of all the internal documentation of VA for

example via the use of qualitative analysis software such as Nvivo. The number of explicit and implicit citation could be an element to be compared to other SFMO all over the European countries. Another interesting study is a comparison among the organisational structure and efficiency of VA pre-structural reorganisation and after-structural reorganisation.

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* Quanto scritto e riportato nel qui presente lavoro non costituisce la posizione
ufficiale di Veneto Agricoltura.

Annex 1

Titolo del progetto:

.....

1. Disposizioni generali

-Durata: dal /..... /..... al /..... /.....

-Contesto (Background):

.....
.....
.....
.....

-

Obbiettivi:.....
.....
.....
.....
.....

Attività:

.....
.....
.....
.....
.....

Destinatari ultimi del progetto (Target groups):

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.....
.....

2. Gestione

-Partners di progetto e loro compiti:

.....
.....
.....
.....

-Contoterzisti o collaboratori per mansioni specifiche (special tasks):

.....
.....
.....
.....

-Modalità di coinvolgimento di collaboratori esterni:

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.....
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.....

3.Finanza

Fondi o finanziamenti:

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.....
.....

Distribuzione dei costi complessivi sulle categorie di spesa:

Personale:

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.....
.....

Investimenti:

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.....

Servizi acquisti:

.....
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.....

Spese generali:

.....
.....
.....

4.Post-Progetto

Risultati:

.....

.....
.....
.....
.....
.....

Aspetti positivi e negativi legati al progetto (forma, tipo di contratti e accordi, struttura del p.):.....

.....
.....
.....
.....
.....

Aspetti positivi e negativi riguardante il lavoro con i Partners:

.....
.....
.....
.....

Aspetti positivi e negativi legati alla collaborazione con terzi (es. privati) e alla forma di cololaborazione:

.....
.....
.....
.....
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.....

Annex 2

Informazioni generali dell'intervistato: Età:..... Sesso: M F

1) Settore di occupazione: Azienda agricola Impiegato Azienda
boschiva Altro:.....

2) Associazione di appartenenza: Mountain Wilderness WWF Lipu
CAI Legambiente Ecoistituto del Veneto Alex Langer
 Altro..... Nessuna

3) Comune di residenza:.....

Tema: Modelli di gestione

Nella mia tesi vorrei capire come pensate che la Foresta del Cansiglio dovrebbe essere gestita nei prossimi anni e con quali obiettivi. Partiamo da questi.

1. Secondo lei, quale dovrebbe essere l'obiettivo principale della gestione della Foresta del Cansiglio nei prossimi 10 anni? Scegli i tre più importanti in ordine di priorità (1 = il più importante, 3 = il meno importante).

Obiettivi di gestione		Voto	Note: _____
Produzione di legname da opera			_____
Altri Servizi Ecosistemici (dalla classificazione CICES)	Biomassa (legna da ardere)		_____
	Prati e Pascoli		_____
	Gestione delle risorse idriche		_____
	Protezione idrogeologica		_____
	Protezione suolo da erosione		_____
	Protezione da eventi estremi (es. uragani)		_____
	Ventilazione e traspirazione (aria fresca)		_____
	Biodiversità		_____
	Controllo parassiti		_____
	Attività ricreative		_____
	Spiritualità e sacralità		_____
Educazione ambientale e scienza			_____
Sono tutte egualmente importanti			_____
Altro			_____

2. La Foresta del Cansiglio è attualmente di proprietà della Regione Veneto. Secondo lei, vi saranno dei cambiamenti nel tipo di proprietà nei prossimi anni?
- Sì, anche a breve (nei prossimi 5-10 anni) No, non credo
 Sì, ma solo tra parecchio tempo (più di 10 anni) Non so

Se ha risposto sì, quali?

	Foresta	Altri terreni o proprietà	o -
--	---------	---------------------------	--------

		<i>specificare</i> (es. pascoli)
Rimarrà di proprietà della Regione Veneto		
Verranno rilasciate Concessioni a lungo termine ad altri enti pubblici (es. Comuni, Carabinieri Forestali, ...)		
Verranno rilasciate Concessioni a lungo termine a organizzazioni private (es. aziende boschive, ONG)		
Verrà totalmente privatizzata (terreni venduti a privati)		
Altro (specificare)		

Note: _____

3. Se la proprietà della Foresta del Cansiglio fosse diversa, secondo lei cosa cambierebbe per...?

Cambiamento	... l'ambiente	... la situazione economica dell'area	... i portatori di interesse dell'area
Vendita della pubblico ad un'organizzazione privata (specificare: _____)			
Concessioni a lungo termine (es. 30 anni) in favore di:			
-un ente pubblico (specificare: _____)			
- una ONG			
- una impresa privata			
Privatizzazione delle operazioni gestionali, ma sotto stretto controllo della Regione Veneto – Veneto Agricoltura.			

4. Lei crede che un cambiamento nel tipo di proprietà e quindi di gestione sia:

necessario opportuno non saprei

rischioso

sbagliato

Perchè?

5. Se ha risposto che un cambiamento sarebbe “necessario” o “opportuno”, può specificare quale cambiamento sarebbe preferibile secondo lei?

- | | |
|---|---|
| <input type="checkbox"/> Rimarrà di proprietà della regione
venduti a privati) | <input type="checkbox"/> Privatizzazione (terreni |
| <input type="checkbox"/> Concessioni a lungo termine ad altre autorità pubbliche | <input type="checkbox"/> Altro (specificare) |
| <input type="checkbox"/> Concessioni a lungo termine a organizzazioni private | <input type="checkbox"/> Non so |

6. Un'ultima domanda: quale pensa che sarà nei prossimi 5 – 10 anni la maggiore fonte di entrate per la gestione della Foresta del Cansiglio?

- | | |
|---|---------------------------------------|
| <input type="checkbox"/> Prodotti forestali non legnosi (es. funghi, mirtilli ecc.)
Vendita di legname | <input type="checkbox"/> |
| <input type="checkbox"/> Turismo culturale (museo dei cimbri, giardino botanico, ecc)
enogastronomico | <input type="checkbox"/> Turismo |
| <input type="checkbox"/> Turismo naturalistico e spirituale | <input type="checkbox"/> Cicloturismo |
| <input type="checkbox"/> Birdwatching
fotografico | <input type="checkbox"/> Turismo |
| <input type="checkbox"/> Turismo legato al benessere/well-being (yoga, ecc.) | <input type="checkbox"/> Pic-nicking |
| <input type="checkbox"/> Turismo legato alla musica (concerti in bosco e non) | <input type="checkbox"/> Trekking |
| <input type="checkbox"/> Altro:..... | |

Grazie mille per la collaborazione al nostro studio. La conoscenza aiuta la scelta.

Annex 3

Questionario per Veneto Agricoltura (VA) e Foresta Cansiglio (FC)

Nome dell'intervistato	
Qualifica/posizione professionale	
Esperienza lavorativa in VA o FC (da quanto tempo lavora in FC o VA?)	
Data e luogo dell'intervista	

Tema: Priorità e obiettivi di gestione

Scopo principale di questa sezione è identificare gli attuali obiettivi di gestione della FC e definire le prospettive future.

1. Allo stato attuale delle sue conoscenze, quali sono le priorità principali dell'attuale gestione forestale in Cansiglio come definite da leggi e regolamenti? *Spiegare la risposta.*

Dia un giudizio da 0 a 3 (0 – non applicabile, 1 – poco importante, 2 – importante, 3 – molto importante) riguardo ai seguenti obiettivi

Obiettivi di gestione		Voto
Produzione di legname da opera		
Altri Servizi Ecosistemici (dalla classificazione CICES)	Biomassa (legna da ardere)	
	Prati e Pascoli	
	Gestione delle risorse idriche	
	Protezione idrogeologica	
	Protezione suolo da erosione	
	Protezione da eventi estremi (es. uragani)	
	Ventilazione e traspirazione (aria fresca)	
	Biodiversità	
	Controllo parassiti	
	Attività ricreative	
	Spiritualità e sacralità	
	Educazione ambientale e scienza	
Sono tutte egualmente importanti		
Altro		

1.1 Secondo lei, queste priorità si riflettono nelle modalità con cui FC agisce nella realtà dei fatti? (cioè: sono definite da leggi e regolamenti sulla carta, ma anche davvero perseguite con la pratica delle modalità gestionali?)

2. Lei pensa che le priorità di gestione dovrebbero essere diverse da quelle

Yes No I do not know

definite attualmente dalla legge?

Se sì, quali dovrebbero essere secondo la sua opinione?

3. Sulla base delle sue conoscenze attuali, quali sono gli obiettivi prefissati e da raggiungere (nei prossimi 5-10 anni)?

Tema: Risultati della gestione

Scopo di questa sezione è rilevare i reali risultati ottenuti dalla gestione della FC e capire come tali risultati siano correlati con gli obiettivi gestionali preposti.

4. Quali sono i risultati attesi dalle attuali iniziative di gestione della FC? Secondo lei, fino a che punto tali obiettivi sono stati raggiunti?

Risultati	Raggiunto	Raggiunto parzialmente	Non raggiunto	Non saprei
4.1				
4.2				
4.3				
4.4				
4.5				

5. Quali sono i risultati gestionali attesi e programmati per i prossimi 5 – 10 anni?
Spiegare in dettaglio.

5.1 Secondo la sua opinione, tali risultati sono adeguati o dovrebbero invece essere diversi? *Spiegare cosa dovrebbe cambiare (quali risultati si dovrebbero definire al posto di quelli attualmente previsti).*

6. Secondo lei, quali sono gli aspetti positivi e le opportunità, e quali invece quelli negativi e le difficoltà nel modo con cui la foresta è gestita in merito a...

		Problemi/difficoltà	Aspetti positivi/opportunità
6.1	...questioni tecniche		
6.2	... aspetti logistici/organizzativi		
6.3	...relazioni con portatori di interessi (stakeholder)		
6.4	...budget		
6.5	...comunicazione		
6.6	altro		

7. Come vengono usate, attualmente, le entrate che derivano dall'area forestale produttiva del Cansiglio? *Spiegare la risposta*

Le entrate vengono destinate alle casse statali/VA budget	
Le entrate sono reinvestite nella gestione della foresta	
Le entrate sono utilizzate per il mantenimento e il miglioramento della produzione di servizi ecosistemici (es. gestione delle acque, protezione del suolo, salubrità dell'aria, ecc.)	
Altro	

7.1 Secondo le sue conoscenze attuali, le entrate ottenute dall'area di bosco produttivo

Yes No I do not know

cambieranno nei prossimi 5 – 10 anni? Se sì, come? (maggiori, minori, stabili)

8. Quale pensa che sia il maggiore successo ottenuto negli ultimi 5 – 10 anni di gestione della Foresta del Cansiglio?

9. Quale pensi che sia il maggior fallimento ottenuto negli ultimi 5 – 10 anni di gestione della Foresta del Cansiglio?

10. Come vede il futuro della FC? Nel mondo reale (come pensa che si evolverà realisticamente) e in un mondo perfetto (cosa sogna/spera che accada)?

Tema: Modelli di gestione

Con l'aiuto di questa sezione vorremmo capire come la FC è gestita da un punto di vista organizzativo. Questo aiuterà a confrontare FC e VA con alcune delle diverse modalità di gestione delle Aziende Forestali Statali in altri paesi europei.

11. Può descrivere brevemente l'attuale processo decisionale riguardo alla gestione della FC? (chi decide cosa, chi viene consultato e quando, come sono i flussi decisionali, ecc.)

11.1 Chi prende l'ultima decisione su...?

	...budget della FC	... gestione forestale della FC	... questioni amministrative della FC
Governo			
Regione Veneto			
Veneto Agricoltura			
Amministrazione della FC			
Altro			

11.2 Quali portatori di interesse hanno influenza sulle decisioni prese riguardo la gestione della FC? Può indicare fino a che punto gli stakeholder elencati possono influenzare le decisioni di tale gestione? (0 – non applicabile/nessuna capacità, 1 – bassa capacità, 2 – capacità media, 3 – elevata capacità)

Partiti politici (specificare)		Ambientalisti (specificare)	
Associazioni di Categoria: CIA, Coldiretti, Confagricoltura		Residenti del Cansiglio (es. comune di Tambre) Residenti delle aree limitrofe (es. comune di Belluno o comunque di Vittorio Veneto e altri di pianura)	
Agricoltori e allevatori (come singoli)		Fruitori della foresta (es. visitatori, associazioni sortive,...)	
Associazioni di caccia (specificare)		Mondo accademico/scientifico (ricercatori)	
Cacciatori (come singoli)		Altro	

12 Pensa che l'attuale modello organizzativo sia efficiente rispetto ai risultati pianificati?

Yes No I do not know

Se sì, qual è il fattore chiave di tale successo?

Se no, cosa può essere migliorato o cambiato? Come?

13 Attualmente la FC è parzialmente sovvenzionata dallo stato e ha qualche entrata derivante dalla vendita di legname che è reinvestito per le necessità della FC. Lei è soddisfatto/a di questo modello organizzativo?

Yes No

Se sì, quali sono le ragioni per cui lo è (soddisfatto)?

Se no, cosa vorrebbe cambiare? E come?

13.1 Quale pensa che sarà nei prossimi 5 – 10 anni la maggiore fonte di entrate per la gestione di FC? E nei prossimi 50 anni?

14 La FC è di proprietà dello stato. Secondo lei, vi saranno dei cambiamenti nelle forme di proprietà della FC nei prossimi anni? *Spiegare la risposta.*

	Breve periodo (5-10 anni)		Medio periodo (10-30 anni)		Lungo periodo (più di 30 anni)	
	Foresta	Attività Commerciali	Foresta	Attività Commerciali	Foresta	Attività Commerciali
Rimarrà di proprietà dello stato						
Concessioni a lungo termine ad altre autorità pubbliche						
Concessioni lungo termine a organizzazioni private						
Privatizzazione (terreni venduti ai privati)						
Altro (specificare)						
Non so						

14.1 La FC è di proprietà dello stato. Secondo lei, quale cambiamento dovrebbe essere apportato nei prossimi anni al regime di priorità della Foresta del Consiglio? *Spiegare la risposta.*

	Breve periodo (5-10 anni)		Medio periodo (10-30 anni)		Lungo periodo (più di 30 anni)	
	Foresta	Attività Commerciali	Foresta	Attività Commerciali	Foresta	Attività Commerciali
Rimarrà di proprietà dello stato						
Concessioni a lungo termine ad altre autorità pubbliche						
Concessioni lungo termine a organizzazioni private						
Privatizzazione (terreni venduti a privati)						
Altro (specificare)						
Non so						

15 Se la proprietà della FC fosse diversa, cosa cambierebbe per...?

	... la foresta	... l'ambiente	... la situazione economica dell'area	... i portatori di interesse dell'area
Vendita del suolo pubblico ad un'organizzazione privata				
Concessioni a lungo termine in favore di ONG				
Concessioni a lungo termine del bosco in favore di una impresa privata				
Privatizzazione di tutte le operazioni gestionali, con la creazione di: una impresa sotto controllo parziale dello stato				

Una impresa sotto controllo totale dello stato				
Una organizzazione no-profit sotto il controllo totale dello stato				

16. Si aspetta qualche cambiamento nella gestione della FC in conseguenza alla riforma amministrativa in corso di Veneto Agricoltura? Cortesemente, spiega la tua risposta

Yes No I do not know
