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Mariagiulia Mariani

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UNIVERSITÀ
degli STUDI
di CATANIA

THÈSE

Pour obtenir le grade de
Docteur

Délivré par **Université Paul-Valéry Montpellier III**,
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développement dans l'agriculture et l'alimentation**

Spécialité : **Géographie et aménagement de l'espace**

Présentée par **Mariagiulia MARIANI**

**The Contested Borders of Cultural
Biodiversity: Exploring Knowledge and
Practices in Origin Food Schemes.
Evidence from Mediterranean Origin Cheeses**

Soutenue le 13 décembre 2018 devant le jury composé de

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Now, here, you see, it takes all the running you can do, to keep in the same place, if you want to get somewhere else, you must run at least twice as fast as that!

L. Carroll

Utopia lies at the horizon. When I draw nearer by two steps, it retreats two steps. If I proceed ten steps forward, it swiftly slips ten steps ahead. No matter how far I go, I can never reach it. What, then, is the purpose of utopia? It is to cause us to advance.

E. Galeano

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Table of Contents

Acknowledgments	5
Table of Contents	7
List of Tables, Figures, Maps, and Pictures	11
Tables	11
Figures	11
Maps	12
Pictures	12
List of Abbreviations	13
Abstracts	15
Abstract	15
Résumé	16
Sommarío	17
CHAPTER 1	19
Introduction	20
1.1. Problem statement	20
1.2. Societal context: an emerging concern about cultural biodiversity in OFS	24
1.2.1. The worldwide emergence of OFS	24
1.2.2. The prevalence of GIs and Presidia	27
1.2.3. The turn toward sustainability of rural policies	32
1.2.4. Renewed importance of local knowledge in sustainable development	36
1.3. Theoretical framework	38
1.3.1. Origin food and <i>terroir</i> : a shared field for anthropology of food and geography	39
1.3.2. (Re)localising food in rural studies: AFN vs LAFS	43
1.3.3. Knowledge dynamics: an anthropological perspective	46
1.3.4. Linking anthropology and geography in rural studies	50
1.4. Objectives and research questions	52
1.5. Thesis outline	53
CHAPTER 2	55
Methodology	56
2.1. Design	56
2.2.1. Methodological foundations	56
2.1.2. Justification of the case studies	58
2.1.3. Data collection	61
2.2.4. Data analysis	66
2.2. Overview of the case studies	67
2.2.1. National contexts for the quality food initiatives	67
2.2.2. Case study 1: Piacentinu Ennese	74
2.2.3. Case study 2: Ossau-Iraty	79
2.2.4. Case study 3: Béarn mountain cheese	84
2.2.5. Case study 4: Chefchaouen goat cheese	89

CHAPTER 3	97
Cultural biodiversity unfolded, (un)matching discourse and practice	98
3.1. Introduction	98
3.2. Biodiversity as a political discourse	100
3.2.1. Biodiversity in the public arena: which ontology of nature?	100
3.3. The cultural biodiversity of origin cheeses: an invisible heritage	102
3.4. Methods	104
3.5. Institutional discourses on cheese microbiodiversity in Origin Food Schemes	105
3.5.1. An emerging concern about cheese microbiodiversity	105
3.5.2. Contrasting GIs and Presidia discourses on microbiodiversity	106
3.6. Cultural biodiversity in action	109
3.6.1. Confronting practices of the invisible	109
3.6.2. Processing tools	111
3.6.3. Milk heating treatment	111
3.6.4. Bacterial cultures (starters)	112
3.6.5. Rennet	114
3.7. A discursive analysis beyond the market / aethical devide	114
3.8. Concluding remarks	117
CHAPTER 4	119
The paradox of reducing diversity to defend it	120
4.1. Introduction	120
4.2. Specifications between power and knowledge	122
4.3. Methods: four case studies of origin cheese	123
4.4. The emergence of specifications: stakeholders, motivations, and governance	125
4.4.1. Chefchaouen goat cheese or the top down invention of a cheese	125
4.4.2. Piacentinu Ennese, from oblivion to the best tables	126
4.4.3. Béarn mountain cheese, or the real Ossau-Iraty?	127
4.5. At the heart of the code: fixing (traditional) practices	128
4.5.1. Product	129
4.5.2. Place	130
4.5.3. Process	132
4.6. Undesired effects of specifications on food diversity	134
4.7. Discussion: (de)limiting diversity	136
4.7.1. Process (de)limitation	137
4.7.2. Local knowledge (de)limitation	137
4.7.3. Power (de)limitation	138
4.7.4. Place (de)limitation	138
4.7.5. Social (de)limitation	138
4.7.6. Taste (de)limitation	139
4.8. Concluding remarks	139
CHAPTER 5	141
Knowledge on the move: learning and changing practices in origin food communities	142
5.1. Introduction	142
5.2. Knowing in practice	143
5.2.1. Roots and legacy of Communities of Practice	143
5.2.2. CoPs in OFS: an analytical perspective on contested knowledge	145

5.3. Methods and introduction to the case studies	145
5.3.2. Béarn mountain cheese Slow Food Presidium: old practices on the stage	148
5.3.3. Chefchaouen goat cheese GI: spreading innovation of practices	149
5.4. Community bonding: co-producing practices and belonging	150
5.4.1. Beyond specifications: tacit knowledge and places	150
5.4.2. Fluid practices across borders	152
5.4.3. Engaging consumers in practices	153
5.5. Discontinuities of codified and tacit knowledge	154
5.5.1. Specifications change following market or cultural streams	155
5.5.2. Becoming part of a CoP: challenging the peripheries	157
5.5.3. Changes in practices: status and tacit knowledge	158
5.6. Discussion	160
5.7. Concluding remarks	163
CHAPTER 6	165
Synthesis and conclusions	166
6.1. Introduction: the aim of the study	166
6.2. Main Findings	167
6.3. Conceptualising the effects of OFS on cultural biodiversity	171
6.3.1. Contrasting the GI system and the Slow Food Presidia model	171
6.3.2. Knowledge dynamics and status of local knowledge	175
6.3.3. Conditions to maintain cultural biodiversity	179
6.3.4. Underpinning power relations	181
6.4. Methodological implications (and limits)	182
6.5. Practical implications for policies and OFS management	184
6.6. Suggestions for future research	185
6.7. Perspectives and conclusions	186
FRENCH AND ITALIAN SUMMARIES	189
Résumé détaillé de la thèse	190
1. Introduction	190
2. Méthodologie	192
3. La biodiversité culturelle expliquée, (non) correspondance de discours et pratique	192
4. Le paradoxe de la réduction de la diversité pour la défendre	194
5. Savoir en mouvement : apprentissage et changements de pratiques	195
6. Synthèse et conclusion	197
Riassunto	199
1. Introduzione	199
2. Metodologia	200
3. La biodiversità culturale spiegata, (non) corrispondenza tra discorso e pratica	201
4. Il paradosso di ridurre la diversità per difenderla	202
5. Conoscenza in movimento: apprendimento e cambiamenti di pratiche	204
6. Sintesi e conclusione	205
REFERENCES	209
APPENDICES	233

List of Tables, Figures, Maps, and Pictures

Tables

Table 1.1: Various definitions of Traditional Knowledge	46
Table 1.2: Forms of knowledge in OFS	49
Table 2.1: GI institutional frame in Italy	68
Table 2.2: Livestock and dairy PDOs and Slow Food (SF) Presidia in Sicily	70
Table 2.3: GI institutional framework in France	71
Table 2.4: GI institutional framework in Morocco	73
Table 2.5: Piacentinu Ennese PDO and Presidium operators	79
Table 2.6: PDO Ossau-Iraty operators	83
Table 2.7: Béarn mountain cheese Presidium operators	89
Table 2.8: Chefchaouen goat cheese GI operators	95
Table 3.1: Microbiodiversity in the specifications of three OFS cheeses	110
Table 4.1: Case studies and their specifications	124
Table 4.2: Specifications are defined through negotiations among a variety of actors and motivations	128
Table 5.1: Three case studies for a broad spectrum of experiences	146
Table 6.1: Discursive elements referring to origin cheese microbiodiversity	167
Table 6.2: GIs and Presidia institutional features	172
Table 6.3: GIs and Presidia main motives and values	173

Figures

Figure 1.1: The general topic	23
Figure 1.2: Multiple concerns and scopes related to the development of OFS	25
Figure 1.3: Number of registered Food GIs in EU since 1996	28
Figure 1.4: Worldwide number of Presidia since 2000	30
Figure 1.5: Theoretical framework	51
Figure 1.6: The demonstration of the Thesis	52
Figure 1.7: The structure of the Thesis	54
Figure 2.1: Old and new setting for OFS	58
Figure 2.2: Interviews performed in the four case studies	64
Figure 2.3: The multilevel management of Italian Presidia	69
Figure 2.4: The management of French Presidia	72
Figure 3.1: Evolution in the political and scientific consideration of biodiversity	101
Figure 4.1: Traditional practices in specifications with differing requirements	129
Figure 5.1: The three pillars of CoPs: domain, community and practice	144
Figure 5.2: Discontinuities between tacit and codified knowledge	154

Maps

Map 1: Worldwide diffusion of GIs	31
Map 2: Worldwide diffusion of Presidia	31
Map 3: Location of the four case studies	61
Map 4: Location of the Piacentinu Ennese case study	75
Map 5: Location of the Ossau-Iraty case study	81
Map 6: Location of the Béarn Mountain cheese case study	85
Map 7: Location of the Chefchaouen goat cheese case study	90

Pictures

Picture 2.1: Sicilian breeds: Comisana sheep and Girgentana goat (Enna)	76
Picture 2.2: Shepherd (Enna)	76
Picture 2.3, 2.4, 2.5, 2.6: Production of Piacentinu Ennese (Calascibetta, Enna)	78
Picture 2.7: Basco-Béarnais sheep (Ossau Valley, Béarn)	82
Picture 2.8: Onfarm Ossau-Iraty (Aspe Valley, Béarn)	82
Picture 2.9. Mountain huts (Aspe Valley, Béarn)	86
Picture 2.10: Communication from mountain huts (Aspe Valley, Béarn).	86
Picture 2.11: Whey reuse (Ossau Valley, Béarn)	87
Picture 2.12: Milking of a Pyrenees goat (Ossau Valley, Béarn).	87
Picture 2.13: Shepherd who delivers milk to Ajbane Chefchaouen (Ras el Ma, Chefchaouen)	91
Picture 2.14: Shepherd in the outskirts of the city (Ras el Ma, Chefchaouen)	91
Picture 2.15, 2.16, 2.17: Industrial and artisan tasks at the Ajbane Chefchaouen (Chefchaouen)	93
Picture 2.18: Sale of traditional fresh cheese (<i>jben</i>) in the market (Fez)	94
Picture 2.19: Traditional cow milk cheese wrapped in palm leaves (Tanger)	94
Picture 2.20: A Jbala woman is selling traditional cheese at the market (Tanger)	94
Pictures 3.1: Milk containers are kept in cold water overnight (Béarn)	113
Pictures 3.2 and 3.3: The <i>tina</i> , the wooden vat, and its use in a dairy (Enna)	113
Picture 4.1 and 4.2: Cleaning procedures with nettle (Béarn, Ossau Valley)	131
Picture 4.3 and 4.4: Traditional rush baskets used for Piacentinu Ennese and ricotta (Enna)	131
Picture 5.1: Goat herder with cross-breed Alpine goats (Ksar el Kbir, Larrache)	151
Picture 5.2: Manual milking in the high-mountains (Aspe Valley, Béarn)	151

List of Abbreviations

AET3V	Association des Eleveurs Transhumants des 3 Vallées, 3 Valleys Transhumant Breeders Association
ANOC	Association Nationale Ovine et Caprine, National Association for Sheep and Goat Breeders
CAP	Common Agriculture Policy
CB	Cultural Biodiversity
CIRAD	Centre International de Recherche Agronomique pour le Développement, French Agricultural Research Centre for International Development
CorFiLac	Consorzio Ricerca Filiera Lattiero-Casearia, Dairy Research Consortium
EC	European Commission
FAO	Food and Agriculture Organization of the United Nations
GMP	Green Morocco Plan
GI	Geographical Indication
INAO	Institut National de Qualité et de l'Origine, National Institute for quality and origin
PDO	Protected Designation of Origin
PGI	Protected Geographical Indication
OFS	Origin Food Scheme
OMPIC	Office Marocain de la Propriété Industrielle et Commerciale, Moroccan Office of Industrial and Commercial Property
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UNESCO	United Nations Educational, Scientific and Cultural Organization

Abstracts

Abstract

Origin food qualification has emerged as a new institutional tendency from the 80s, becoming a relevant asset in the European model of agriculture with the Geographical Indication (GI) system. Place-based labelling led by non-governmental organisations are also multiplying, such as the Presidia projects developed by the Slow Food movement. These public or private initiatives, referred as Origin Food Schemes (OFS), generate significant environmental, social, and cultural outputs, besides producing market value. For these reasons, OFS are also becoming economically and politically relevant in the Global South.

In particular, policy makers and social movements have increasingly looked at the effects of OFS on biodiversity, referred to here as cultural biodiversity to underline the relevance given to practices and local knowledge. Considering the gap in knowledge regarding the bio-cultural outcomes of different OFS, this Thesis asks which are the gaps between discourses, understood as policies, systems of knowledge, and communication tools, and both explicit and implicit practices conveyed by OFS as for cultural biodiversity. The Thesis presents the following sub-research questions: Which are the institutions and logics that determine the definition and practices related to cultural biodiversity? How are knowledge and practices codified and, then, are rules applied? To what extent are codified and tacit knowledge and practices modified and re-created within OFS?

Four origin cheeses recognised as a GI and/or a Presidium and located in France, Italy and Morocco were selected as case studies and addressed with 24 month-multisite ethnographic enquiries, privileging participant observation and apprenticeship as a research tool to study the embodied and experientially grounded practices.

The example of the management of cheese microbiodiversity shows that Slow Food and GI promoters have integrated cultural biodiversity into their institutional discourses in different times and to different extents. Despite limitations due to the prominent role of the market, a mediatized institutional narrative on cultural biodiversity can amplify the political voice of local actors by fostering community and social relationships.

The analysis of specifications – privileged places to study the effects of OFS – demonstrates that OFS differently take into account traditional practices of production, following stakeholders' negotiations that oppose motives, strategies, and forms of knowledge. Although specifications directly preserve some genetic resources, taste, and know-how, paradoxically their codification always results in adapting and reducing existing diversity, including in the OFS that are more oriented to localise practices and promote diversity of tastes.

Nevertheless, food knowledge and practices are dynamic. OFS stakeholders interact in a learning process, using codified and tacit knowledge as tools to shape communities of practice. This learning process surpasses the border of the OFS governing body and encompasses also consumers and producers who do not belong to the scheme into joint practices. The gap between what is codified and what is done leads to a dynamic redefinition of both practices and communities.

Résumé

Depuis les années 80, la qualification des produits d'origine est devenue un élément important dans le modèle agricole européen avec le système des indications géographiques (IG), auquel s'ajoutent des systèmes promus par des organisations non gouvernementales, comme les projets Sentinelles de Slow Food. Ces initiatives publiques ou privées, ici appelées Systèmes de Valorisation de l'Origine (SVO), génèrent d'importants résultats environnementaux, sociaux et culturels, en plus d'une valeur marchande.

Les décideurs politiques et la société civile s'intéressent de plus en plus aux effets des SVO sur la biodiversité, qualifiée ici de biodiversité culturelle pour souligner la pertinence accordée aux pratiques et aux connaissances locales. Or, ces effets sont encore mal connus. Cette thèse entend y contribuer en explorant l'écart entre les discours, c'est-à-dire les objectifs politiques, les connaissances systématisées et les narratives qui sous-tendent le développement des SVO, et les pratiques locales (explicites et implicites). Elle traite donc les questions de recherche suivantes : quelles sont les institutions et les logiques qui inspirent la définition et la pratique de la biodiversité culturelle ? Comment la codification des connaissances et des pratiques est-elle réalisée et comment les règles sont-elles appliquées ? Dans quelle mesure les savoirs sont-ils modifiés et re-crés ?

L'analyse repose sur quatre études de cas représentées par quatre fromages de montagne sous appellation (IG) et/ou objet d'une Sentinelle Slow Food, en France (fromage d'estive du Béarn et Ossau-Iraty), en Italie (Piacentinu Ennese) et au Maroc (fromage de chèvre de Chefchaouen). La démarche de recherche a privilégié l'analyse des discours institutionnels et des cahiers des charges, des enquêtes ethnographiques multi-sites sur 24 mois, l'observation participante et « l'apprentissage » pour décrypter les pratiques locales.

L'analyse des discours institutionnels sur la microbiodiversité fromagère montre que les promoteurs des SVO ont intégré la biodiversité culturelle dans leurs stratégies à différents moments et degrés. En dépit des limitations dues au rôle prépondérant du marché, la médiatisation d'un discours sur la biodiversité culturelle peut amplifier la voix politique des acteurs locaux et favoriser les relations communautaires.

Résultat de négociations entre les parties prenantes qui présentent des différentes motivations et formes de connaissance, les cahiers des charges sont des objets privilégiés pour étudier les effets des SVO. Les cahiers des charges étudiés préservent certaines ressources génétiques, goûts et savoirs-faire, comme la production quotidienne de fromage en montage, dans la Sentinelle béarnaise. Mais néanmoins, le processus de codification aboutit à l'adaptation et à la réduction de la diversité existante, y compris au sein des SVO les plus orientés vers la localisation des pratiques et la promotion de la diversité des goûts, comme observé au sujet de la réduction des temps d'affinage dans le Piacentinu Ennese.

Cependant, les connaissances et les pratiques relatives à la biodiversité culturelle sont dynamiques. Les parties prenantes des SVO interagissent dans un processus d'apprentissage, en utilisant des connaissances codifiées et tacites pour façonner une communauté. Cet apprentissage dépasse les frontières du SVO et englobe également les consommateurs et les producteurs qui n'y appartiennent pas, dans le cadre de pratiques partagées. Le cas marocain, par exemple, montre la recréation de pratiques engendrées par une IG qui limite particulièrement la tradition. Le décalage entre ce qui est codifié et ce qui est fait conduit à une redéfinition dynamique des pratiques et des communautés.

Sommario

La qualificazione dei cibi tipici è diventata una nuova tendenza istituzionale fin dagli anni '80, una risorsa strategica nel modello agricolo europeo formalizzatasi con il sistema delle Indicazioni geografiche (IG). Ad essa si aggiungono sistemi volontari di etichettatura dell'origine promossi da organizzazioni non governative, come il progetto dei Presidi di Slow Food. Tali iniziative pubbliche o private, qui denominate Sistemi di Valorizzazione dell'Origine (SVO), generano rilevanti risultati ambientali, sociali e culturali, con una considerevole ricaduta sul valore di mercato.

In particolare, i decisori politici e la società civile mostrano un crescente interesse verso gli effetti dei SVO sulla biodiversità, qui indicata come biodiversità culturale per enfatizzare la rilevanza di pratiche e saperi locali. I risultati bioculturali di diversi tipi di SVO sono ancora poco conosciuti. Quindi, l'obiettivo di questa tesi è di colmare tali lacune esplorando il divario tra il “discorso”, inteso come l'insieme degli obiettivi politici, conoscenze sistematizzate e narrative che sottendono allo sviluppo di SVO, e le “pratiche locali”, esplicite e implicite.

La tesi affronta i seguenti quesiti di ricerca: quali sono le istituzioni e logiche che determinano la definizione e la pratica della biodiversità culturale? Come vengono codificati saperi e pratiche, e in che modo vengono poi applicate le regole? In che misura le conoscenze e le pratiche sono modificate e ri-create nei SVO?

Quattro formaggi tipici riconosciuti come IG e/o Presidio, prodotti in zone di montagna di Francia, Italia e Marocco, sono stati selezionati come casi di studio e trattati con indagini etnografiche multi-sito della durata di 24 mesi, privilegiando l'osservazione partecipante e l'“apprendistato” come strumento di ricerca per studiare le pratiche situate e incorporate.

Un'analisi dei discorsi istituzionali sulla microbiodiversità dei formaggi mostra che la biodiversità culturale è stata integrata nella strategie di Slow Food e del sistema delle IG in tempi e modi diversi. Nonostante i limiti dovuti al ruolo dominante del mercato, un discorso istituzionale mediatizzato sulla biodiversità culturale può amplificare la voce politica degli attori locali promuovendo le relazioni tra gli attori rurali.

L'analisi dei disciplinari di produzione dei quattro SVO—luoghi privilegiati per lo studio degli effetti sulla biodiversità culturale—mostra che i SVO includono pratiche tradizionali di produzione come risultato di negoziati con le parti interessate che presentano divergenti motivazioni, strategie e forme di conoscenza. Sebbene i disciplinari preservino direttamente determinate risorse genetiche, gusti e pratiche, paradossalmente il processo di codificazione porta sempre all'adattamento e alla riduzione della diversità esistente, anche nell'ambito dei SVO più orientati verso la localizzazione delle pratiche e la promozione della diversità gustativa.

Tuttavia, le conoscenze e le pratiche relative alla biodiversità culturale sono dinamiche. Gli stakeholder dei SVO interagiscono infatti in un processo di apprendimento, usando la conoscenza codificata e tacita come strumenti per formare una comunità. Questo processo di apprendimento va oltre i confini dell'organismo di gestione e include anche consumatori e produttori non-SVO in pratiche condivise. Il divario tra ciò che è codificato e ciò che viene realizzato porta pertanto a una ridefinizione dinamica di pratiche e comunità.

CHAPTER 1

Introduction

Chapter 1

Introduction

1.1. Problem statement

Narratives and defining labels have emerged as a way to localise food in direct opposition of the globalisation of the food system, often referred to by scholars as Mc Donaldisation of food (Ritzer 1993; Fischler 1999; Schlosser 2002). Food that has no origin is matched against food with a meaningful origin because ‘food markets are becoming more differentiated on the basis of a range of socially-constructed food quality criteria’ (Mardsen 1998:107).

Although ‘naming food after places’ is a worldwide practice with a long history, product differentiation based on origin is addressing growing market niches in industrialised nations using organised qualification strategies (Callon et al. 2002; Tregear et al. 2007). Origin food qualification has emerged as a new institutional tendency from the 80s, becoming a relevant asset in the European model of agriculture (Fonte 2010), whereas it is highly controversial in the US and, consequently, within the World Trade Organisation (WTO) (Josling 2006; Bowen 2010). In addition to such governmental strategic effort, ‘new forms of (semi-)private regulation of these markets’ are emerging, led by non-governmental organisations (NGOs) through the implementation of voluntary labelling schemes, that address the decreasing state direct regulation of agricultural markets (Renard and Loconto 2013). Also in the private sector, own brands¹ and supermarket chains adopt customised ‘source of origin’ branding to differentiate high quality products.

The phenomenon of collective place-based narratives and labels is exemplified by Geographical Indications (GIs) and by Slow Food Presidia. The former refers to a separate type of intellectual property (IP) that entitles groups of producers to the exclusive right to refer to a geographical place while marketing their products whose reputation and quality are directly attributable to such cultural and geographical origin. The latter, i.e. the Slow Food Presidia, are projects implemented by the international, non-profit, grassroots organisation Slow Food with the aim of protecting endangered local food. Both GIs and Slow Food Presidia, although originating from two Southern European countries, i.e. France (GIs) and Italy (Slow Food), are also becoming economically and politically relevant in the Global South.

In this Thesis, we will refer to GIs² and Slow Food Presidia as Origin Food Schemes (OFS), i.e. public or private initiatives which recognise and valorise origin food based on

¹ A brand is a logo or name attached to a product and owned by one legal structure. It can be used by a firm, or if collective by several firms.

² GIs include both Protected Geographical Indications (PGI) and the Protected Designation of Origin (PDO).

the assumption that the unique quality of a product is determined by its geographical origin, with specific reference to the local biological resources, history and know-how, and could not be produced anywhere else on earth. For the purpose of this Thesis, OFS are simultaneously considered as multifunctional social constructs addressing a diversity of environmental, marketing, social and cultural scopes (Rangnekar 2011), and as complex systems in which environment, food products, people and their institutions, know-how, food habits, and social relationships combine within a territory (Muchnick 2009). This definition of OFS, thus, brings together an interest in both legal and marketing aspects, and people practices, collective representations, and local governance.

Box 1. For a definition of Origin Food Scheme

The expression of Origin Food Scheme recalls that of Quality Scheme that enjoyed widespread political use from the 1992 reform of CAP, shifting the focus of the EU from price support to rural development, and refers to policies on geographical indications, traditional food recipes, organic production (Becker and Staus 2009). This Thesis focuses only on the schemes making reference to the geographical environment of the place of origin, where the geographical environment is understood to include inherent natural and human factors, such as climate, soil quality, and local know-how. We refer to both legal and marketing tools designed by the EU (GIs), and to initiatives that are framed by civil society (Slow Food Presidia) aiming at recognising and promoting origin food. The adopted territorial multi-stakeholder notion of OFS reminds one of the definition of food systems that, in turn, has been widely addressed by the scientific literature (FAO 2013:3; Rastoin and Gherzi 2010:19; Muchnick 2009).

OFS have multiple functions and outcomes, attracting increasing worldwide attention. Primarily, OFS produce market value for origin foods by mobilising consumers' trust in the *uniqueness* and authenticity of local food. Moreover, OFS contribute to the fair trade of foods protecting consumers and producers from the potentially misleading marketing of conventional foods.

In addition, OFS generate significant environmental, social, and cultural outputs (Belletti and Marescotti 2006; Bowen 2010; Vandecandelaere et al. 2009). OFS aim to link food with a territory and a community. In other words, such initiatives tend to 're-localise' and 're-embed' (Polanyi 1957) food into social, cultural, and environmental relations. A collective process of setting-up and governance, 'the creation of historical and cultural ties', and 'the promotion of sustainable practices' (Bowen 2010) shape a multidimensional link of OFS to the territory. This aspect of OFS suggests that they may provide a significant contribution to food security and the maintenance of local foodways (Belletti and Marescotti 2006), influence the economic development of a specific area and be used as tools for local development (Delfosse 2010; Siniscalchi 2013a; Thévenod-Mottet 2010). Furthermore they may transform local cultural and biological resources in collective heritage, i.e. a common good with an economic value (van Caenegem and Cleary 2017; Belletti and al. 2015; Grasseni 2016; Brunori 2007), be used as a 'remarkable opportunity to resist the erasure of place and participate in social movements of place', by protecting community assets (Rangnekar 2011).

In particular, the last decades are characterised by the erosion of agricultural biodiversity³ and loss of local food specificities. In such general context, policy makers, social movements, and scholars have increasingly looked at the impact of OFS on biodiversity, that will be further referred to as cultural biodiversity (CB) to underline the relevance given to practices and local knowledge in relation to biodiversity in OFS (Bérard and Marchenay 2006; King and Eyzaguirre 1999). Promoters of OFS in general, and GIs and Presidia in particular, claim that they enhance CB while encouraging sustainable development, and thus consider them among heterogeneous legal, political, and economic responses to the erosion of CB with a special concern in countries of the Global South (King and Eyzaguirre 1999; Blakeney 2013). The general assumption is that OFS give market and cultural recognition of specific local resources and practices, and CB is thereby defended, as we will further develop in 1.2.4.

Box 2. For a definition of Cultural Biodiversity

There is wide consent in recognising the ‘inextricable link’ between biological and cultural diversity, referring to language, cultural values, traditional knowledge and practices (Maffi 2007). This is especially true in regards to agricultural, domesticated biodiversity, defined as ‘the variety and variability of living organisms that contribute to food and agriculture in the broadest sense, and the knowledge associated with them’ (Qualset and Shands 2005, quoted in Montenegro de Wit 2016). Agricultural biodiversity ‘is essentially a product of the intervention of man in the ecosystems’ through ‘the cultural processes, the knowledge, practices, and agricultural innovations’ that farmers developed (Santilli 2011). As recognised by Santilli (2011), agricultural biodiversity ‘cannot be treated as disassociated from the contexts, processes, and socio-economic and cultural practices that determine and condition it’. All agricultural practices, that can be innovative or traditional, are key components of agricultural biodiversity. Authors have named such biological diversity framed and nurtured by human practices in different ways: agro-biodiversity, ethno-biodiversity, biocultural diversity.

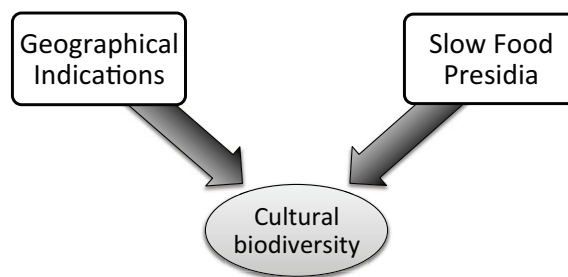
In the case of origin food, the preservation of cultural systems is as important as the conservation of the associated biological resources (King and Pablo and Eyzaguirre 1999). Origin food are the result of the ‘co-evolution of plants, animals and people connected through a culture of techniques and know-how embedded in agronomic and agro-industrial practices [...] constructing the agro-food cultural heritage of a territory (Sanz-Cañada and Muchnik 2016). Such knowledge and practices are essential to the identity, reputation, marketing, and (re)production of origin food. Specific habits of consumption, taste preference, memories, imageries, and social organisation also contribute to construct such CB. This consideration leads us to qualify biodiversity differently and use the term of cultural biodiversity to underline the relevance given to the practices and local knowledge in origin food initiatives (Bérard and Marchenay 2006).

Despite the environmental and cultural claims attached to OFS, authors are increasingly questioning their effectiveness for the purpose of defending CB. Some authors, for instance, suggest that GIs may have a doubtful impact on CB when specialty food, in

³ Agricultural biodiversity is addressed by the Convention on Biological Diversity (CBD) as ‘a broad term that includes all components of biological diversity of relevance to food and agriculture, and all components of biological diversity that constitute the agricultural ecosystems, also named agro-ecosystems: the variety and variability of animals, plants and micro-organisms, at the genetic, species and ecosystem levels, which are necessary to sustain key functions of the agro-ecosystem, its structure and processes’ (CBD 2000)

particular from the Global South, become global commodities and local farmers risk losing control of their local resources and food sovereignty to the advantage of private interests, representing a threat to local skills and genetic resources (Bowen and Zapata 2009; Dutfield 2000; van de Kop et al. 2006). Other authors have pointed out the contradictory discourse and practice of the Slow Food movement revealing hidden implications of consumer action with respect to environmental and cultural crisis (Laudan 2004; Leicht 2003; Siniscalchi 2013a; West and Domingos 2012; Hall 2012). Indeed, it seems that a certain distance, or gap, exists between what these labels display, and the outcomes and practices they motivate (Bowen 2010). As de Sardan (2016)⁴ sums up, '[j]ust as the discourses are far from reflecting practices, the real practices are far bearing any similarity to the prescribed practices.' These gaps in relation to the impact of OFS on CB still need to be fully unfolded.

Figure 1.1: The general topic



Given the increasing importance of OFS as tools for protecting cultural biodiversity and traditional knowledge in the long term, especially in marginalised rural areas and in the Global South, further research needs to address these complex systems as for the gap between their institutional discourse and local practice on cultural biodiversity. This would contribute to the scientific and institutional debates on the outputs of OFS, shedding light on bio-cultural outputs, against a unifying approach of institutional discourses and (explicit and implicit) practices.

This Thesis aims at filling such gaps in the literature based on two premises. First, it presupposes that cultural biodiversity is influenced by the agri-food system, and in particular by the OFS governance. Then, this Thesis considers that local knowledge and practices are locally rooted and built, and not inherited or transmitted. Therefore, by

⁴ Anthropologist de Sardan (2016) recently dedicated the paper ‘For an Anthropology of Gaps, Discrepancies and Contradictions’ to call on anthropology (and other social sciences) to overcome the underestimation of ‘the discrepancy between the rules of the social game and the real practices of actors’, bringing a new scientific interest to ‘the deviations from the rules or the strategies adopted by actors to circumvent these norms’. He distinguished on one hand, the inevitable discrepancy between the policy as it is formulated and as it is implemented in reality, due to the variety of stakeholders following their own logics and interests (‘implementation gap’), and, on the other hand, the noncompliance of the everyday behaviour of actors in relation to regulations (‘behavioural gap’).

looking at local communities involved in different OFS (namely GIs and Slow Food Presidia), this research attempts to unfold institutional discourses and local knowledge dynamics, in a context where institutionalised OFS have a long history (Southern Europe, namely France and Italy) and where they represent a contemporary societal challenge (namely Morocco). In an attempt to qualify their conditions of emergence and impacts, this Thesis thus questions if OFS *always* have a positive impact on the cultural biodiversity of origin food or if this occurs only under certain conditions. In other words, is the impact of OFS the one they aspire to have? Which are the factors that could enhance or, conversely, potentially crystallise these experiences of food localisation towards the conservation of diversity?

In addition, with reference to literature on food decommodification and alternative food networks (Sonnino and Marsden 2006; duPuis and Goodman 2005; Guthman 2007), the central questions of this Thesis reflect a general interest in assessing the potential of OFS to drive a real change towards a more diverse, alternative food system. It is significant to ask if OFS are a real alternative to conventional agriculture and consumption as they claim to or, on the contrary, if their destiny is to be a *niche*, produced by marginalised small producers for a *niche* of consumers (Fonte 2010).

The following part of the introduction is structured as follows: first, the institutional and social concerns of origin food schemes in relation to biodiversity and traditional knowledge are outlined to justify the scientific and societal interest of this work; then, the theoretical framework of the research is outlined, in which the interest of geography and anthropology of food, and rural studies converge to explore knowledge dynamics in origin-food; thereafter, the objectives and research questions are defined; and finally the outline of the Thesis is presented.

1.2. Societal context: an emerging concern about cultural biodiversity in OFS

This Thesis puts OFS in a broad societal context that justifies the relevance of studying them: (1) the emergence of OFS in different geographical contexts; (2) the prevalence of two OFS, namely GIs and Slow Food Presidia; (3) the increasing relevance of OFS in recent rural policies towards sustainable development, in particular in marginal areas; and (4) the growing role of traditional knowledge in the debate on sustainable development.

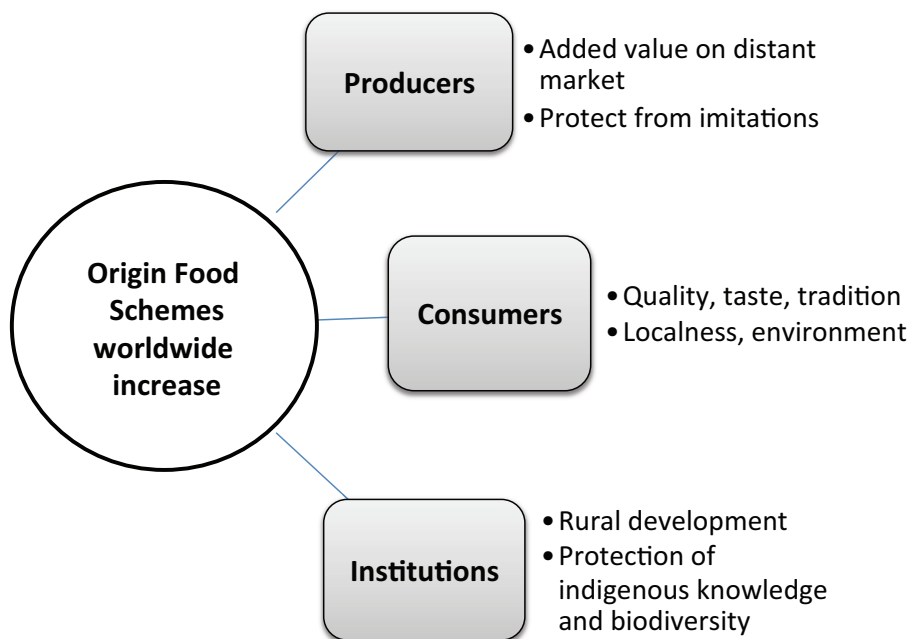
1.2.1. The worldwide emergence of OFS⁵

Attributing the name of a place to a food or craft that presents specific features is and has been a common practice in many historical periods and spaces and not, as we might think, a prerogative of Mediterranean Europe, where the concept of geographical denomination

⁵ Excerpts of this chapter are extrapolated from Chabrol D., Mariani M., and Sautier D. (2017) Establishing geographical indications without state involvement? Learning from case studies in Central and West Africa, published in Q1 Journal *World Development* 98 (Appendix 1). I completed the literature review that framed this article exploring the controversial role of GIs in Africa.

was institutionalised (Sautier et al. 2011). According to Allaire et al. (2005), naming a food after a place was an old marketing practice allowing buyers to recognise the product on the market. Progressively, throughout the XIX and XXth centuries, states and public policies have devoted specific policies to origin food, establishing an institutional link between quality standards and methods of production. In the last decades, numerous agri-food policies, schemes, and less formal practices have addressed origin food to cope with contemporary challenges (Fonte 2010).

Figure 1.2: Multiple concerns and scopes related to the development of OFS



Producers' concerns

Origin food producers increasingly look at the various potential of OFS. Firstly, OFS allow producers to link their production practices and/or the characteristics of their product to a particular name or label through a qualification process (Tregear et al. 2007). Such 'claims to quality' emerge as tools of economic competitiveness between groups of food producers and the conventional industrial food system for selling specialty products, which are locally sourced and identified, available in relatively small quantities and at premium prices (Marsden 2004). Indeed, competition based on quality differentiation and the notion of 'quality chains' (Harvey et al. 2004) is a strategic tool which is also widely available to small producers (Carrà et al. *forthcoming*).

Such alternative food producers demonstrate how their products differ from conventional commodities by defining voluntary, proactive standards that justify an added value when their products access distant markets (Guthman 2007). On local markets, alternative food producers use OFS to create 'short food supply chains' which are characterised by new rural development practices based on a reduced physical or symbolic distance between

producer and consumer (notably in farmers' markets) (Marsden 2004). Furthermore, OFS, in particular GIs as an enforceable IP right, offer protection against risks of unfair competition and name usurpation on the part of producers outside the area enjoying the reputation of or not conforming to the authentic modes of production.

Consumers' concerns

OFS also attract the attention of both local and distant consumers, and social movements, matching increasing popular interests on the impact of food system on the planet, on local economies, and on food diversity, within the so-called 'conscious or sustainable consumption' trend (Webster 1975; Hall 2012; Murdoch et al. 2000). On one side, people are actively searching for locality and uniqueness. Consumers in Europe are increasingly searching for locality when buying their food: they don't want just *any* food, but *meaningful* food that contribute to building their identities while nourishing their bodies (Pratt 2007). Contrary to what we might think, consumers in the Global South also research local products and give importance to their cultural and geographical origin, as the appeal of local traditional food for African urban dwellers shows (Chabrol et al. 2017).

On the other hand, the ideas of locality, origin, and *terroir* shape new collective practices of food production and consumption, tending to re-embed the moment of consumption into the social process that has generated it (Polanyi 1957; Granovetter 1985; Callon 1998). Social movements are shaping alternative ways of consumption based on locality, e.g. the Locavore, to counteract the effect of economic and cultural globalisation, with uncertain effects (Raynolds 2000; Ilbery et al. 2005; Goodman 2003; Wilk 2006). In this context, thus, local food movements, such as Slow Food, and their supporters increasingly address OFS as a way to decommodify, protect, and favour the access to traditional products.

Institutional concerns

OFS, while addressing at the same time marketing and socio-cultural-environmental concerns, are increasingly the object of public policies. The most notable example of origin food policy is the GI system established on the international level under the impetus of the European policy and legal system. Allaire et al. (2005) consider that OFS have been the object of policies because of four main justifications that are intertwined: (i) market regulation and competition, (ii) agri-food supply management, (iii) territorial development, (iv) conservation of natural and cultural resources. Rural policies on origin-food, thus, attempt to conserve such natural and cultural resources and generate local dynamics of development by means of the legal protection and market valorisation.

The institutional relevance of OFS is recognised in the European Union (EU), where the promotion of quality schemes is meant to correct the information asymmetry and provide consistent information (EC 2008a). In the predominantly rural economies of the Global South, the development of OFS takes on strategic importance because agricultural products are a main resource. Scholars and experts from the Food and Agriculture Organisation of the United Nations (FAO) consider OFS as an appropriate tool that enables agricultural development to be both environmentally sustainable and based on codified traditional knowledge minimising the risks linked to globalisation (Barham 2003; Bowen 2009, 2010; Vandecandelaere et al. 2009).

1.2.2. The prevalence of GIs and Presidia

Two examples of the increasing importance of OFS are the Geographical Indications (GIs) and the Slow Food Presidia. Both contribute to differentiating and qualifying food according to its origin, and to develop alternative food markets and networks. Both GIs and Presidia are based on voluntary norms (included in the so-called product specifications or code of practice) that aim to transfer understandings/perceptions of quality linked to tradition/authenticity and environmental friendly practices to consumers. But beyond these several similarities, the genesis and implications of GIs and Presidia differ greatly.

Geographical Indications

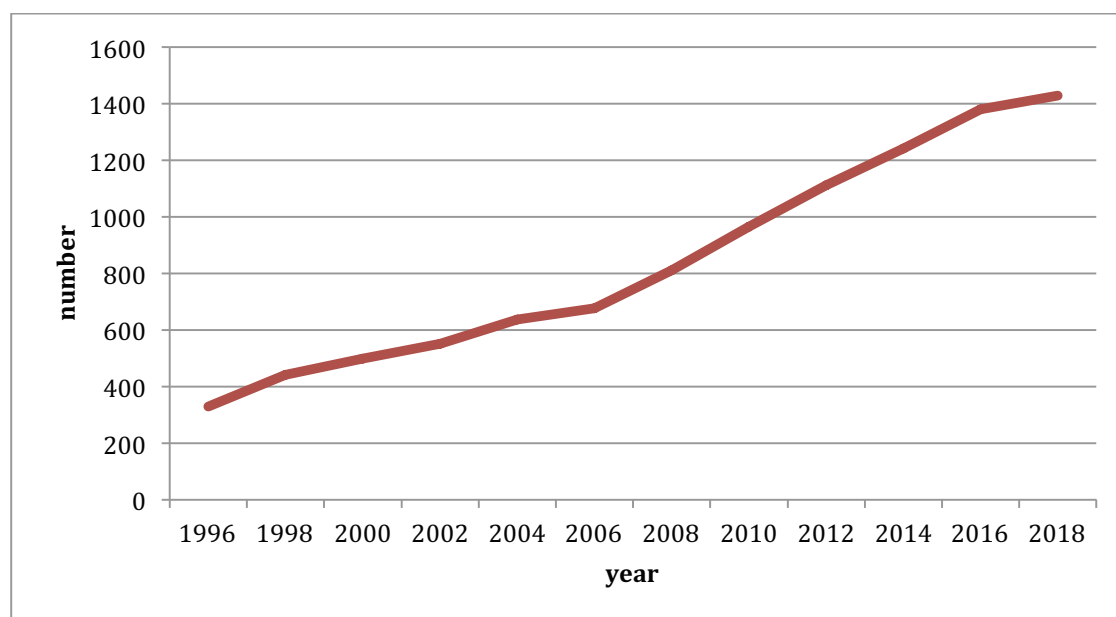
GIs are a highly institutional OFS that refer to a separate type of IP, introduced by means of the Paris Convention 1883, to be later incorporated into the agreement on TRIPS (Trade-Related Aspects of Intellectual Property Rights) in 1994, resulting from controversial debates over agricultural trade within the WTO. According to article 22(1) of the TRIPS agreement, GIs are defined as ‘indications, which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographic origin’ (Grote 2009). GIs are constituted as unlimited (in time) and inalienable intellectual collective rights on a product (Boisvert and Caron 2010). They are authored by producers who ask their state, through a complex process of recognition, to be entitled to the exclusive right to use a place-name to market their products.

The GI system was first outlined in the EU. Several member states have developed GI and quality food systems for decades, inspired by the French national regulation, and, in 1992, the EU harmonised its member state regulations. The 2003 reform of the Common Agriculture Policy (CAP) intensively promoted GIs (Joseling 2006) because of their potential ‘to protect local (food) cultures, offer a stronger quality guarantee to consumers, and provide opportunities for value-added agriculture’ (Bowen 2010). As of April 2018, there are 3,333 GIs registered in the EU, of which 1428 are for food, of which 235 for cheese (Qualivita 2017; EC DOOR)⁶. The EC Regulations 509/2006 and 510/2006 clarify the use of the GI tool and distinguish between protected designations of origin (PDOs), protected geographical indications (PGIs) and traditional specialty guaranteed (TSG), according to the decreasing degree of ‘connectedness’ to the origin (EC 2006 and 2008). For PDOs, the strictest type of GI, all the production phases must occur in the area of production and have to embody the link between the quality or a specific feature of the product and the geographical environment. The current EU Regulation 1151/2012 on quality schemes for agricultural products and foodstuffs determine the rules framing the product specifications of applying GIs. Production rules comprised into specifications must be justified by the ‘quality link’, the link between a certain feature and its geographical origin. Specifications must include, therefore, the description of the production process, including methods of production, qualified as ‘authentic and unvarying local methods,’ and the proof of the unique causal link between the geographical area and the product quality,

⁶ For a complete list of agricultural products and foodstuffs registered GI, see the EC’s DOOR database at <http://ec.europa.eu/agriculture/quality/door/list.html>

produced by human and natural factors. Moreover, any direct correspondence between breed and variety and a GI is forbidden to prevent misleading consumers.

Figure 1.3: Number of registered Food GIs in EU since 1996



Author's creation – Source: European Union – Data on April 25 2018

In the wake of the TRIPS agreement that demands that every country establish their own tailored national legal protection system, a large number of countries have progressively established specific legal frameworks at both national and regional levels, including in the Global South (Bramley et al. 2013; Audier 2008; Giovannucci et al. 2009; Marie-Vivien 2010, 2012; Xiaobing and Kireeva 2007). The French-European model has greatly inspired the institutional framework adopted by countries in Latin America, Africa and Asia (WIPO 2004) that is often applied with a top-down approach to implement ready-made models of development (Barham 2003). GIs are considered in these areas as a political and economic mechanism to reap market benefits from cultural identities in a globalising world that attach increasing importance to these attributes (Ilbert and Petit 2009). For instance, Morocco, exposed to the successful French policy on origin food (*produits de terroir*), has been promoting the GI system as a governmental strategy to pursue rural development based on promoting gastronomic heritage and fostering local entrepreneurship (Koop et al 2010; Donner 2016). However, in Morocco as in other Global Southern countries, the effect of GIs seems particularly controversial and scientific literature is increasingly devoted to assess the legal set up and assessing their cost/benefits (Barham and Sylvander 2011; Giovannucci et al. 2009; Joseling 2006; Suh and MacPherson 2007).

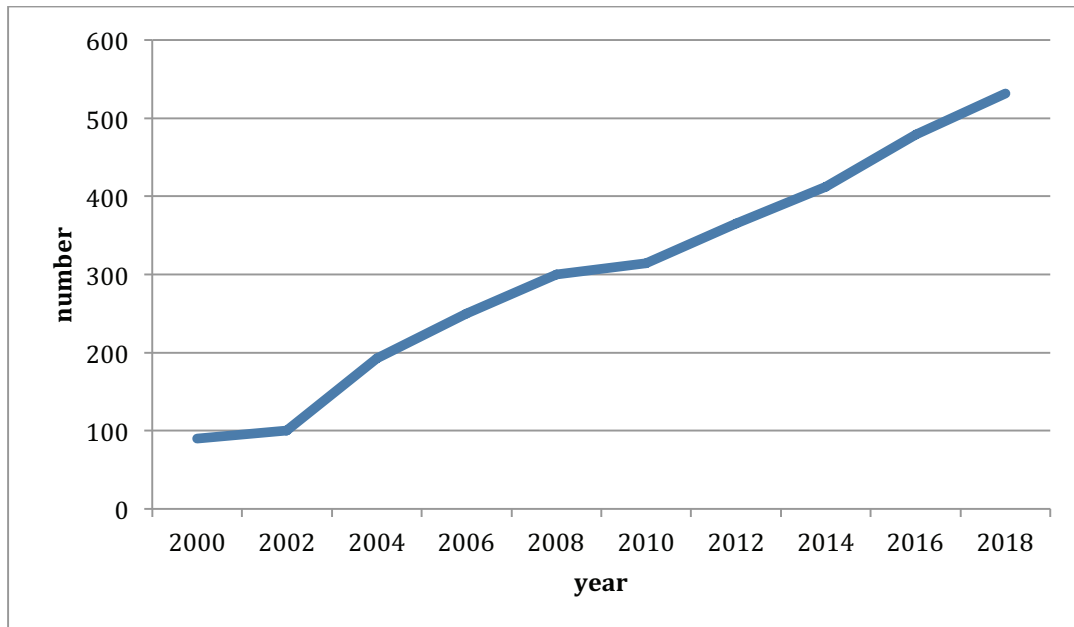
Slow Food Presidia

Slow Food Presidia, first launched in 1999, are the main projects developed by the international Slow Food movement in the field of the defence of biodiversity. Slow Food

was born in Italy in 1986 as a reaction to homogenisation of culture and taste, with a media campaign against the installation of a McDonalds restaurant near the Spanish Steps in Rome. Local and regional food and Italian *osterie* (defined by Slow Food as ‘typical restaurants’, ‘traditional places to eat’) were seen as under threat and in need of an army of consumers unwilling to give away their gastronomic habits. Slow Food organised these consumers and led their collective action, counting on a patriotic desire for local food and conviviality. With its logo, representing a snail, Slow Food entered the public debate on food with a Manifesto on the politics and pleasures of the ‘slow-ness’ versus the ‘fast life’ (Slow Food Manifesto). The Slow Food founders considered it was time to reverse the values expressed by the Marinetti’s Futurist Manifesto: the rejection of the past, and a celebration of speed and machines. Slow Food reaction against the symbols of modern, homogeneous, industrialised food, has led some researchers to charge Slow Food of culinary luddism or culinary elitism (Lauder 1999; Leitch 2003; West and Domingos 2012). From this very first discourse of the movement, the notion of quality is intrinsically bound with diversity.

Slow Food has progressively defined its notion of quality, broadened its vocabulary and its field of action (Siniscalchi 2013a). Over time, the movement roused interest in food’s journey from the field to the table, questioning the production process and deepening its orientation towards the environment. Hence, from the 90s, one of the keywords of Slow Food was biodiversity, and in 2003 the Slow Food Foundation for Biodiversity (SFFB) was created to manage this field of activity, and Presidia in particular. In 2005, a new manifesto of quality according to Slow Food was launched. The book ‘Good, Clean and Fair’, by Slow Food founder Petrini, enlarged the understanding of quality food, adding to notions of good taste and environmental sustainability, also the notion of social and economic sustainability. According to the ‘Good, Clean and Fair’ goal, quality food must be ethically produced and traded. Along the years, Slow Food has shown a capacity for scaling up by engaging with political and cultural actors, including the Terra Madre network. Through such calls for a stronger alliance between all the food chain actors, Slow Food achieved the status of a political body (Siniscalchi 2013b).

As of June 2018, 532 Presidia had been created around the world, involving over 13,000 small-scale farmers (SFFB 2018). Each Presidium supports a quality product with a strong link to the history and culture of a specific area, and that safeguards native breeds and local plant varieties, and recovers traditional agricultural and/or processing methods, also wild species, rural landscapes and ecosystems (Slow Food 2010). Whereas in Northern countries, cultural and symbolic goals prevail in the launch of a Presidium, in the Global South, Presidia predominantly focus on economic goals, aiming at building successful small scale models of rural development and increase Slow Food media and institutional presence (Siniscalchi 2013a). In the North and in the South, several interacting criteria have to be considered in order to launch a Presidium (Peano and Sottile 2012): taste; history, culture, and place; small scale of production; risk of extinction; environmental sustainability; social sustainability. Evidence, including oral ones, must document the link to a particular place.

Figure 1.4: Worldwide number of Presidia since 2000

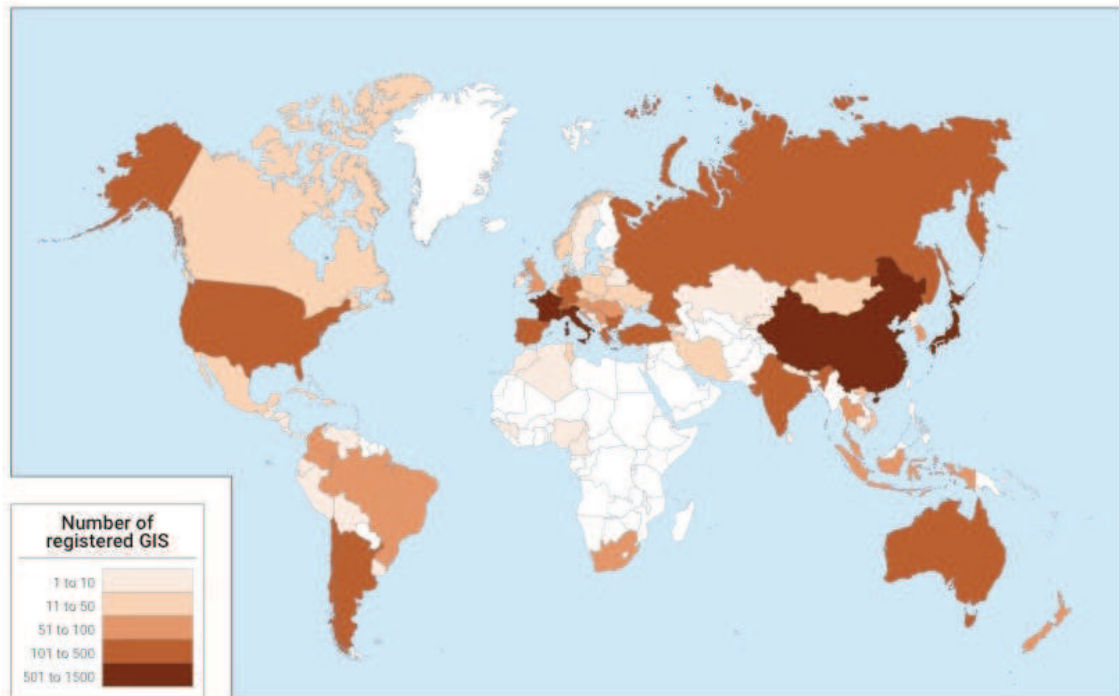
Author's creation – Source: SFFB – Data on June 25 2018

Presidia are constituted as on-going projects framed by the SFFB and are based on a dynamic and participatory relationship between producers, consumers, cooks, and experts (Siniscalchi 2013a; Peano and Sottile 2012). Local institutions are important sponsors and partners of Presidia. Core actions of Presidia projects are the following: (i) strengthening producer organisation, (ii) preserving traditional methods and knowledge, (iii) supporting sustainable practices, (iv) promoting the local area, (v) linking producers with consumers (SFFB 2018). Although Presidia are generally informal and fluctuant, in Italy and Switzerland Presidia has been a registered brand since 2008, with a graphic logo which Slow Food allows producers to use only after they subscribe to guidelines and pay a fee.

The geographical development of OFS: a Mediterranean affair?

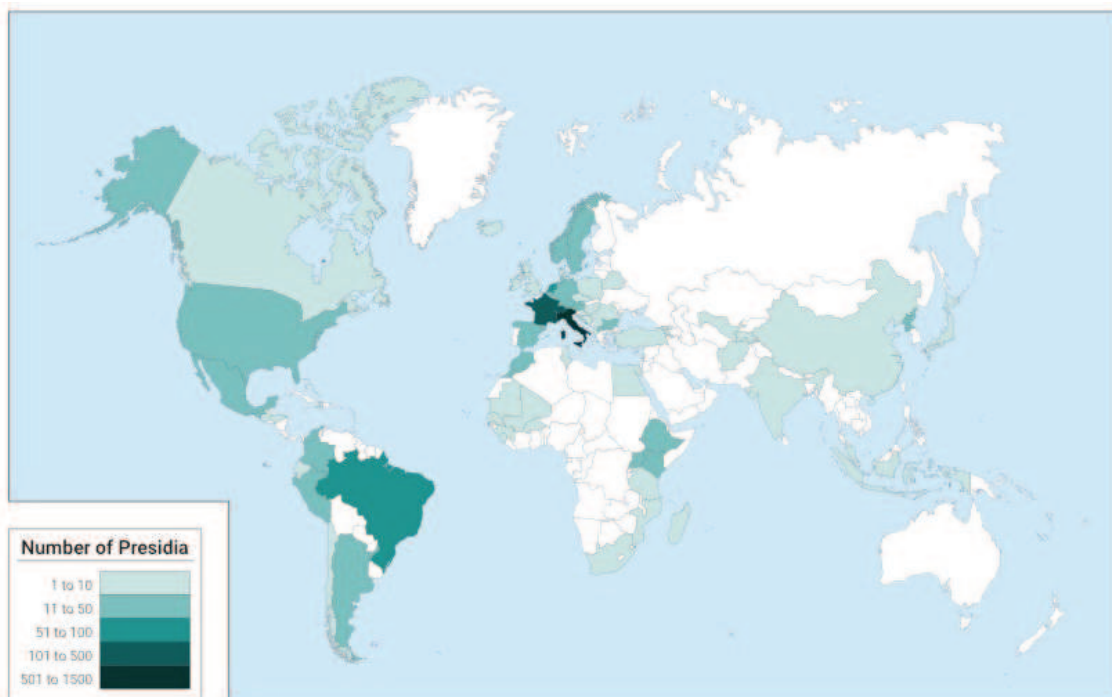
The development of OFS is highly uneven across space. Nowadays GIs are widely used in Southern Europe, especially in Italy and France, which have the longest history in registering GIs and hold the record for number of registered products. For instance, 95% of European PDO cheeses are located in France, Italy, Spain, and Portugal (Hirczak 2007). In Northern Europe, however, OFS are less developed. Outside Europe, and in particular in Latin America and Asia, GIs are developing at a notable rate. For example, 'the European Union has registered more than 14 GIs from emerging third countries (China, Colombia, India, Vietnam) and has received applications for nine more (India, Morocco, Thailand, Turkey) (European Union 2014), whereas India alone has registered more than 200 GIs since 2003' (Chabrol et al. 2017). In Africa, the initiation of GIs is weaker and more recent, and particularly located in countries that are historically connected to France. For instance, Morocco has developed 48 GIs between 2009 and June 2018.

Map 1: Worldwide diffusion of GIS



Author and Boada, J.'s elaboration – Source: OriGin (2018)

Map 2: Worldwide diffusion of Presidia



Author and Boada, J.'s elaboration – Source: SFFB (2018)

Regarding Presidia, the vast majority of Presidia (291) are located in Italy, where Slow Food originates and has a wider appeal with the general public and policy-makers, followed by Switzerland (22) and France (21). However, Presidia are currently becoming a relevant quality system in the Global South, attracting consumers on a national level and fostering more lucrative trade on the international level. For instance, a network of coffee Presidia links coffee producers from Americas (e.g. Guatemala) and Africa (e.g. Ethiopia) with European roasters to increase awareness of coffee culture and fair trade. Brazil, with its 11 Presidia, is the non-EU country where Slow Food launched the most Presidia. Presidia are developed in the countries where a stronger network of supporters exists, with Slow Food activists as ‘ambassadors’ of Presidia (Chabrol 2005). However, despite the fact that the US is the second country after Italy in terms of membership, the development of Presidia is very weak there, suggesting the lack of interest towards such projects compared to Southern Europe.

Such predominance of OFS in Southern Europe can be explained because France and Italy, and more generally the Mediterranean region, are areas of surviving quality production systems. Fonte (2008) argued that an *origin-of-food* approach is widespread in Mediterranean Europe because a later and not complete industrialisation of the food system has determined the survival of pre-industrial food and techniques that are nowadays the assets on which a new development models is built. On the contrary, Northern European countries have a weaker ‘association among *terroir*, tradition, and quality’ (Morgan et al. 2008) and have become ‘placeless foodscapes’ as a result of the deep industrialisation jeopardising their food traditions. Thus, Northern European local producers and institutions hardly see an interest in developing OFS (Ilbery and Kneafesey 2000).

1.2.3. *The turn toward sustainability of rural policies*

The growing interest in the environmental effects of food production and consumption corresponds to an increase in the OFS number, types, and relevance. This turn toward sustainability is mirrored also within different OFS, which are increasingly transformed into models and tools of food production and consumption that could lead to the desired shift towards sustainable development (Allaire et al. 2005). In Europe, from the end of the 80s, growing concerns on agrobiodiversity are integrating the EU policy within a general ‘greening’ trend of progressive integration of environmental goals into agricultural policies (Deverre and de Sainte Marie 2008)⁷. For instance, the 1992 CAP firstly introduced the Natura 2000 sites aiming to protect vulnerable species and ecosystems in which man plays a central role. Since 2007, a more proactive promotion of practices with a positive effect on biodiversity conservation is implemented, such as the Agro-Environmental Grassland Payment requiring farms to devote 10% of their area to biodiversity, integrating wild elements and areas within the farming space, and considering the implementation of

⁷ ‘[I]n order to ensure *in situ* conservation and the sustainable use of plant genetic resources, landraces and varieties which are naturally adapted to local and regional conditions and threatened by genetic erosion (conservation varieties) should be grown and marketed even where they do not comply with the general requirements as regards the acceptance of varieties and the marketing of seed and seed potatoes.’ (Directive 2008/62/EC)

greening measures as a mandatory requirement for farmers to receive part of their direct subsidies.⁸

The new 2013 CAP particularly focuses on the support of a green economy transition, through the promotion of low-input systems in certain areas, ‘extensive systems with high associated natural and cultural values’, although considering the priority of food security and intensive production in the other areas (Westhoek et al. 2012). This makes biodiversity a major strategic pillar and suggests new logics of intervention, based on an effective use of the diversity of European agriculture and on the economic importance of preserving biodiversity. For instance, the Rural Development Programmes (RDPs) provide financial support to farmers that contribute to *in situ* genetic resource conservation by farming local breeds and crops. Moreover, in order to meet the EU's biodiversity targets for 2020, in April 2017 the Commission published an ‘Action Plan for nature, people and the economy’ identifying four priorities: (i) improving guidance and knowledge and ensuring better coherence with broader socioeconomic objectives; (ii) building political ownership and strengthening compliance; (iii) strengthening investment in Natura 2000 and improving synergies with EU funding instruments; (iv) better communication and outreach, engaging citizens, stakeholders and communities. However, the European Commission itself is currently revising such greening policies because they have not fulfilled expectations with regards to the contribution of agriculture to maintaining and enhancing biodiversity (mid-term review of the Biodiversity Strategy 2015, European Commission’s Environmental Implementation Review 2017). Despite this general greening trend, the CAP does not extensively address OFS as a tool to reach such goals.

Sustainability in GIs

The European legal framework of GIs does not mention an environmental requirement (Thévenod-Mottet 2010). However, the EU is increasingly questioning fostering GIs as a tool for the conservation of biodiversity. For instance, in 2009 the Regions Committee⁹ blamed agriculture intensification as a cause of erosion of biodiversity and suggested, among 79 propositions, to review the defining criteria of GIs in order to integrate the goal of biodiversity into the related cultural practices of production. Consequently, the first regulation on GIs (EEC regulation 2081/1992) has been progressively modified until the EU Regulation 1151/2012 that, without using the word biodiversity, considers that the diversity of agricultural production, traditions (in constant link with the evolution of new methods and new production materials), natural resources and landscape are common assets that GIs can strengthen. This regulation on GIs tackling biodiversity is coupled only indirectly with the EU’s efforts on managing agricultural genetic resources, with a

⁸ This shift in the implementation of policies of sustainable development corresponds to a shift of meaning of the notion of sustainable development, based in turn on different concepts of nature. As suggested by Blandin (2007) the strategies of conservation of nature correspond to two different concepts of nature: an aesthetic and a utilitarian one. According to the aesthetic concept of nature, nature has to be safeguarded by men’s activities, through the creation of natural parks for instance. Differently, the utilitarian concept of nature considers that nature provides satisfaction of human needs, and a correct strategy of conservation of nature would allow this to occur on the long term.

⁹ Regions Committee of 22 June 2009 on ‘Un nouvel élan pour enrayer la perte de biodiversité’.

regulation on marketing of varieties and breeds.¹⁰ For instance, the Directive 2008/62/EC considers that derogations to the general requirements marketing seeds should be provided ‘to ensure *in situ* conservation and the sustainable use of plant genetic resources, landraces and varieties which are naturally adapted to local and regional conditions and threatened by genetic erosion (conservation varieties).’

Although the EU (and EU countries) regulation does not directly address biodiversity and environmental issues of GIs, it is possible to include—explicitly or implicitly—practices favouring CB in the GI specifications if the link between the quality of the product and its place of origin is proved (Bérard et al. 2005). On the ground, GIs increasingly acknowledge goals of preservation of CB on a voluntary basis and integrate practices such as the use of specific varieties or landraces and specifications about the origin and composition of animal feed, e.g. the prohibition of silage (Isla and Wallet 2010; Hirczak 2007). For instance, in Italy, local landraces, including one breed under conservation, are increasingly included into specifications of Italian PDO cheese, also as a result of research programs of genetic and feed management improvement (Zjalic et al. 2012). In France, the potential of GIs in this field has been debated in 2006 within the Grenelle de l’environnement (Caron and Boisvert 2010) and, more recently, in 2013, the National Assembly debated if including socio and environmental conditions as one of the items of GI specifications, without finally making compulsory the inclusion of environmental standards (Chabrol and Marie Vivien 2014). From an analysis of the content of French specifications, Isla and Wallet (2010) argued that the integration of such practices into the specifications is often not explicit, although several specifications acknowledge goals of preservation of the biological resources and cultural know how. For instance, a growing interest in grassland as the basis of animal feed is exemplified by the fact that more than 80% of the French PDO cheeses prescribe a grass-based feed, fixing a minimum amount in the daily feed or a minimum length of grazing. Moreover, 60% of specifications of French PDO cheeses include a ‘breed’ criterion, comprising 19 autochthonous breeds, 4 rare breeds (*à petit effectif*) and two very rare breeds (*à très petit effectif*). However, only two PDOs require the exclusive use of landraces historically rooted into the territory as a clear strategy of using the PDO scheme to defend such genetic resources¹¹. Nevertheless, when explicit rules are not included in the specifications, practices defending biodiversity are adopted on an individual basis according to personal or collective strategies and values.

Sustainability in Slow Food Presidia

Presidia, 13 years after the creation of the movement, have marked the shift from concerns and projects focused on the gustative diversity of traditional food, such as the revival of *osterie* or taste education programs, to concerns and projects focusing the environmental side of production. According to the movement, the growing globalisation of production and consumption is leading to the destruction of rainforests, loss and impoverishment of agricultural land, and water pollution. At the same time, globalisation is also threatening the ‘Earth's last custodians’: small-scale farmers, herders, and fishermen. It is ‘the sixth mass extinction’ that, differently from the previous ones, human beings are responsible for

¹⁰ See Directive 2008/62/EC, Directive 2009/145/EC, and Directive 2010/60/EU.

¹¹ For Comté, Montbéliarde and French Simmental cow only. For Ossau-Iraty, basco-béarnaise, manech tête noire and manech tête rousse sheep only (INAO/CNAOL 2017).

and are obligated to stop and reverse it (Slow Food 2018). For these reasons, Slow Food made the defence of biodiversity a pillar of its narrative and activity, and has attempted to design an organic program that aims at creating virtuous synergies and effective economic models. The symbols of the panda and the forests were replaced with that of the Ark of Taste, meant as an instrument to ‘save the planet of flavours from the flood of industrial uniformity’ (Manifesto Arca 1997). The army of consumers looking for tastes joined with the aim of building the Ark of Taste, a worldwide catalogue of plants, animal breeds, processed products, cheeses, traditional dishes meant to draw attention to the risk of their extinction. Moreover, the Presidia project was launched to defend endangered food and support the ‘Earth's last custodians’, by promoting their food products on the market.

Over the years, the Presidia project has become one of the most effective tools for putting Slow Food’s agriculture and biodiversity policies into practice, as a successful model for re-designing local food systems (SFFB 2016). Italian regional governments, such as the Tuscan Region that hosts the legal headquarters of the SFFB, have funded the growth of such project, illustrating their political interest in designing and experimenting sustainable models of food production based on local gastronomic heritage. Also outside Italy, local governments or International Governmental Organizations, such the FAO, have supported the development of the Presidia project with funds, communication campaigns, or providing trained technicians, due to the potential of Presidia of driving a transition towards an environmental and economic sustainable food sector (Peano et al. 2014).

Origin food initiatives in mountain areas

The institutional interest in the sustainability of origin food systems is particularly relevant in mountain areas, where OFS have been recognised as suitable tools to address sustainability, facing the progressive abandonment of the mountains and relative cultural and environmental loss (Bowen 2010). Since mountains are not suitable for highly intensive and industrial food systems, OFS may be used to market price and labour-demanding local products because they are able to add value with the distinctive qualities linked to their environmentally and culturally unique—albeit marginal—place of production. By doing so, OFS may have a greater impact in the less-favoured areas in terms of productivity (Barham 2003). In addition, labels and certification schemes can contribute to correctly communicate the specific qualities and benefits of mountain products to consumers in search of healthy and natural foods (Martin and Ferreira 2017).

Examples of implementation of different OFS in mountain areas are various and worldwide. In Morocco, for instance, the second pillar of the 2008 national agricultural plan promote GIs as tools for endogenous sustainable development in mountainous marginal areas (e.g. Rif and Atlas) that cannot compete in terms of productivity with food production on the agricultural plains (Akesbi 2012). In 2012, the EU introduced the optional quality term 'mountain product' to its quality schemes (Art. 31 of EC Reg. 1151/2012; EC Reg. 665/2014). This term has already been adopted at the national level by countries like France and Italy. Slow Food is also working to support mountain products, such as honey, wine, grains, and in particular cheeses, with the Presidia project and thematic public events that bring the attention to the need of repopulating mountains on one hand and designing less strict hygiene rules on the other hand (e.g. Cheese 2015). In addition, in 2016, Slow Food launched the Mountain Product Initiative with FAO as a

part of the Mountain Partnership, with the goal of ‘improving the lives of mountain peoples and protecting mountain environments around the world’, also through the labelling and marketing of mountain products (FAO 2018).

1.2.4. Renewed importance of local knowledge in sustainable development

Knowledge dynamics are a crucial factor in this general shift of rural policies related to origin-food towards sustainable development and biodiversity. With an economic concern, knowledge management is key to achieve competitive societies, which are also potentially more democratic and place fewer burdens on the environment and natural resources (Bruckmeier and Tovey 2009). Although knowledge is an important resource for development, rural areas are often seen as lacking in knowledge (Fonte 2010). Indeed, ‘[w]hile rural areas are often seen as rich in natural resources for societal development, they are also often seen as with deficits in capacities and knowledge’ (Bruckmeier and Tovey 2009:3). For decades, an expert-dominated discourse has been leading rural development, also under the banner of ‘sustainable development’ and technical goals, e.g. reducing emissions or developing green technologies, have guided agricultural policies (Fonte 2010). As a result of such technical and reductive definition of sustainable rural development, local actors have been excluded and local knowledge has been undervalued (Van der Ploeg 1986). Scientific knowledge has not always proven to be effective in rural areas mainly because farmers and rural people and their knowledge have been excluded from the policy-making process (Fonte 2010).

Today it is widely believed that traditional or local knowledge—that in this Thesis refers to ‘a practical, situated activity, constituted by a past, but changing, history of practices’ (Hobart 1993:17, quoted in Escobar 1998)—can make a significant contribution to sustainable development. Food activists celebrate the role of local knowledge and cooperation as a way to resist ‘anomic and contradictory capitalist forces’ (Goodman et al. 2011:11). Policy-makers also increasingly acknowledge that sustainable rural development also includes the social and cultural wellbeing of the population, and this cannot overcome their strategic visions based on the knowledge ‘developed from experience gained over the centuries and adapted to the local culture and environment’ (CBD 1992). Thus, we are witnessing the emergence of a rural knowledge society, starting from the concern about the ecological transition, based on the assumption that rural areas are a ‘reservoir of resources and potential for further development’ in the post agri-food era (Bruckmeier and Tovey 2009:5).

The value of traditional or local knowledge is therefore at stake, sparking a movement to protect it against the erosion generated by the Green Revolution and the neglect that it engenders. An active debate has progressively emerged in fora of the United Nations, such as the World Intellectual Property Organization (WIPO) and the World Trade Organization (WTO), and non-governmental organisations. The main point acknowledged is that States should defend traditional knowledge, in particular indigenous, from private interests and corporate appropriation. For instance, Chapter 26 of Agenda 21, the most significant document produced by the 1992 Earth Summit in Rio de Janeiro, recognises that the vital role of indigenous peoples in development and environmental management is due to their traditional knowledge and practices. Moreover, in 2010, the Convention on Biological

Diversity (CBD) approved in Rio has been further implemented by the Nagoya Protocol and the Tkarihwaí:ri Code of Ethical Conduct to emphasise the importance of local communities and knowledge in relation to biodiversity. The former, the Nagoya Protocol, recognises the right of local and indigenous communities to share the benefits deriving from the use of their TK and biodiversity. The latter, the Tkarihwaí:ri Code, affirms that traditional knowledge can cooperate with scientific knowledge in the conservation of biodiversity.

OFS are today identified as a suitable mechanism to attend this double goal: preserving biodiversity and traditional knowledge (*in situ* conservation) and give it a market value within a strategy of rural development. Scientists and policy makers increasingly consider that agricultural traditional knowledge ‘fosters diversity and contributes to the preservation of natural resources’ and that ‘[a]ppropriate policies should serve the purposes of both supporting niche products, and by doing so, also of supporting biological diversity and thus food security’ (Panizzon 2006). In fact, origin foods are fundamentally linked with local resources, biological or cultural, traditional races and varieties, natural ecosystems (as mountain pastures), local know-how, practices, tastes, and symbolic values. This link to a specific community and know-how collectively developed over centuries in a particular place is what make them special, unique, differentiated on the marketplace. Hence the preservation of those resources, starting from traditional knowledge and practices, means the preservation of the products themselves. In order to preserve this uniqueness, then, GIs and Presidia rely on specifications ‘that define and protect the cultural practices, farmer knowledge, and local environmental resources that have interacted in the evolution of the product’ (Fonte 2010).

For these reasons, in the last two decades, GIs—as an IP right system—have been promoted as a means to protect traditional knowledge and practices associated with agricultural biodiversity, as suggested by the legal literature on GIs and Traditional Knowledge (TK) (Posey and Dutfield 1996; Downes 1997, 2000; Downes and Laird 1999; Dutfield 2000). In particular, we witness an increasing interest of developing countries to develop GIs to protect their TK and exclude third parties from appropriation by empowering farming communities against multinationals because the GI system corresponds to collective rights over the knowledge information embedded in the product (Blakeney 2009; Rangnekar 2004). As noticed by Bérard et al. (2005), GIs might be considered as a way to apply Article 8 (j)¹² of the CBD, concerning the necessity of implementing policies of defence of natural resources coupled with traditional knowledge. If CBD signatory states must recognise the ‘knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles’ (CBD), GIs are a type of IP available to protect local knowledge and practical know-how contributing to maintenance of genetic resources (Curci 2010). However, this is not without controversy

¹² Article 8 (j) of the CBD states that ‘Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the knowledge, innovations and practices and encourage the equitable sharing of the benefits holders of such arising from the utilisation of such knowledge, innovations and practices.’ (CBD 1992)

and states have to deal with risks of sanctions due to protectionism (Boisvert and Caron 2010).

For their part, Presidia are meant to protect—more than traditional crops, food, and landscapes—the knowledge of the community that has grown and processed food and its collective memory, that must be identified and protected for the good of future generations (Slow Food 2018; Shiva 1993). With a dynamic approach, Slow Food supports the need to reassess traditions in local food systems, through the ‘recovery, reinvention and re-functionalization’ of traditional knowledge (Slow Food, Food Policies and Sustainability). The institutional interest in the potential of Slow Food Presidia to foster development based on traditional local knowledge is illustrated, for example, by the EU funded research undertaken to evaluate the sociocultural, agri-environmental and economic sustainability of 47 European Presidia (17% of the total) after 12 years from the launch of the project (Sottile and Peano 2012). The three dimensions of sustainability have been examined through over 50 indicators in relation to the understanding of quality designed by Slow Food (i.e. the Good, Clean and Fair quality dimensions), including, for instance, the value and transmission of traditional local knowledge. The research explored the positive impact that Presidia can have, especially on the sociocultural sustainability, although the questionnaire used to collect data in this research does not allow for estimating the reduction of practices and tastes produced by the Presidia implementation.

1.3. Theoretical framework

In light of the renewed relevance of traditional local knowledge in rural development, this research focused on it as a key, often neglected, component of (cultural) biodiversity in relation to OFS. We considered it relevant to investigate several gaps related to cultural biodiversity in relation to OFS. First, although the central role of rural actors and their community knowledge has been widely recognised, institutional discourse is still intertwined with scientific, technical, managerial knowledge, illustrating discontinuities poorly addressed by literature (Bruckmeier and Tovey 2009; Fonte 2010). Moreover, although the link between OFS and cultural biodiversity have been critically underlined by a few authors in relation to the expansion of the model of GIs in the Global South (Boisvert 2006; Bowen and Zapata 2009), the controversial effects of GIs and Presidia on traditional knowledge and practices have not been extensively studied. Furthermore, there is a lack of studies on how the different social, legal and political mechanisms underpinning OFS operate and producers’ and consumers’ daily experience of such circumstances. In particular, little attention has been paid to the production and transmission of the knowledge related to origin food within the local community, including for instance producers, consumers, public actors. Therefore, within the origin food domain, innovative study objects are the discontinuities between tacit and implicit practices of production and the process of codification of such knowledge and practices, the articulation between local knowledge and experts’ knowledge, the concern about consumers’ expertise, and the transmission of knowledge through the marketing process... briefly: the dynamic life cycle of knowledge and practices in OFS.

In order to fill this gap in the literature, the research question underpinning this Thesis emerges thus from a scientific domain focused on the relationships between economy, territory, and culture, that can be referred to as the multidisciplinary area of inquiry of Food Studies. In particular, this study was built upon the work of a multidisciplinary international research team that is involved in several research programs, promoted by the EU since 2000, and whose aim is to assess the emergence of GIs across the world and the related innovation in agricultural development (SINER-GI, BIODIVALLOC, Femise/IG). These research teams' authors are currently studying the diffusion of the GI concept in emerging countries, helping to outline a suitable legal framework to recognise them and use them as a tool against poverty (Durand and Fournier 2017; Fournier 2008; Cerdan et al. 2009; Marie-Vivien 2010; Chabrol et al. 2016; Lactimed 2013; Carrà and Peri 2011).

In our approach, the analysis of the OFS phenomenon and the underlying knowledge dynamics are inherently multidisciplinary, but, nevertheless, they are very central to the debate of contemporary geography that is inclined to address the relationship between societies and their space also in their cultural and economic dimensions. The different interdependent components of OFS (e.g. public policies and independent private policies, regional study of agri-food production systems, the socio-cultural-cognitive components) may be understood only by referring to different interpretative models mobilised within the geographic, anthropological, and socio-economic theoretical frames. In particular, this work was thus nourished by the body of literature of the geography and anthropology of food, researching the socio-cultural implications of origin food, the literature on rural studies and Alternative Food Networks where knowledge dynamics among rural stakeholders are crucial, and above all, knowledge studies. The research question was hence investigated by referring to those disciplinary domains in order to provide diverse and complementary insights, in a multidisciplinary approach.

In this section, I will outline the general theoretical framework of the Thesis, providing insights of the main scientific debates that nourished my work. In addition, a specific theoretical framework will be outlined in Chapter 3, 4, 5 to further develop the angle of analysis utilised in each chapter.

1.3.1. Origin food and terroir: a shared field for anthropology of food and geography

Anthropology of food and geography have brought interest in the cultural link between origin food, and the community and territory where origin food is anchored, synthetised in the French expression *produits de terroir*. Scholars from these two disciplines investigate how OFS recognise and valorise what French often refer to as *terroir*, or the 'taste of place' (Trubek 2008), conveying the idea that 'the special quality of an agricultural product is determined by the character of the place from which it comes' (Gade 2004:849). Notions such as typical food, local food practices, and territorial development are central to these theoretical reflections, marking a convergence of interests among the two disciplines, i.e. the relation between societies and local biocultural resources. Those reflections contribute to the theoretical framework of this Thesis.

Several anthropologists show that 'origin' refers simultaneously to a geographic place and to historical, cultural, and collective dimensions, i.e. to a community sharing a specific

territory, a story, and know-how. Such a link between origin food products and their origin is associated with high quality, valued know-how, and shared collective practices (de Sainte Marie and Bérard 2005; Bérard et al. 2005; Bérard and Marchenay 1996, 2000, 2004). As summarised by Bérard and Marchenay (2000:160), '[p]hysical factors alone do not explain what creates the specificity of a product. It is human intervention, through technical knowledge and savoir-faire, social organisation and representation which makes sense of this notion of *lien au lieu* (link to a place), allowing these physical factors to explain themselves.' The core issue of *terroir*, thus, lies in a geographical concern, a spatial delimitation: crossing spatial and pedoclimatic elements with the historical and shared reputation of a product.

Beyond this (mainly French) body of literature, other anthropologists have explored the linkages between food, place, and quality, pointing to the controversial relationship between authenticity and markets, locality and global trade, and thus the role of labelling initiatives (Wilk 1995; Tregear 2003; Pratt 2007; Grasseni 2003, 2016; Amilien 2005; Papa 2000). Pratt (2007), for instance, analyses the constructed meaning of the term 'authenticity', so often displayed in the discourses developed within food initiatives and movements aiming at establishing connections between products, quality, and place. Pratt (2007) argues that labels allow reifying such vague concepts and the knowledge system underpinning it, and authenticity hence

signifies that some feature of the production process is known, we know where it comes from, what it is made of, who made it. We know its origin, and have conversations about it. [...] In addition to the conversations we have labels, which are essential in providing consumers with information about the production process when direct contact with the producer is missing. Only the label can authenticate the foodstuff as organic, fair-trade or a regional speciality, and it is central in a whole apparatus of knowledge and connoisseurship.

Pratt (2007) also provides an insightful analysis of how different alternative food movements differently use 'local' as a polysemantic concept¹³. Under the same 'local' umbrella, very different discourses and projects coexist. These reflections, thus, bring light to the ambiguity and richness of several concepts mobilised to explore origin food initiatives.

Another notion mobilised by food anthropologists in the field of origin food that becomes relevant in the questioning of this Thesis is the notion of 'heritage'. Authors refer to 'heritage making' as the process of identification, mobilisation, and valorisation of the resources representing the territorial capital and common goods (Bérard and Marchenay 2001). The notion of 'heritage' is used to make the bridge between the market value of origin foods, in particular when protected by a label, and their cultural rootedness or anchorage into a territory and a community (Papa 2000; Grasseni 2017). Anthropological literature addresses two main dimensions of heritage: (i) the cultural-political one, and (ii)

¹³ According to Pratt (2007), different uses of 'local' match quite distant objectives: (i) environmental reasons ('buying local', 'food-miles'); (ii) construct local economies outside the capitalist system (social justice); (iii) to reach food sovereignty (alternative global movements of small farmers like Via Campesina); (iv) 'Food system localization', benefiting producers by cutting off middlemen and giving added-value to consumers (farmers' markets, box schemes); (v) connection between locality and quality.

the economic one, and suggested that these different dimensions of heritage can be either exclusive or complementary and all of them characterize knowledge dynamics underpinning origin food.

(i) Several authors suggest that heritage making corresponds to a political wish and cultural logic to recover cultural elements in the process of disappearing because they are considered an expression of identity. Such notion has gained a central role in Food Studies, to the point of identifying the recent growing attention to the linkages between food and identity in the global food system as ‘heritage turn’ (Geyzen 2014). In this respect, the aspect of the heritage making that influences most our thinking is the underpinning collective, and sometimes conflictive, process of negotiation. As suggested, for instance, by Grasseni (2017), the mobilisation of heritage implies a multi-stakeholder negotiation, within an ‘arena’ of different visions, creating benefits and drawbacks, winners and losers. Such negotiation has also the cognitive and strategic goal of increasing the ‘collective appropriation’ of the initiative (Troskie and Bienabe 2013). Heritage, thus, is essentially linked to notions of power and governability (May 2013; Bendix et al. 2012)

(ii) Conversely, literature also points to the market appropriation that turns heritage into a commodity, an object of consumption. In this sense, the notion of heritage is also helpful to think about the reconfiguration of the link between tradition and modernity occurring within origin food initiatives (Faure 2000). Origin foods emerge, thus, from a tension between tradition and innovation, and re-invention of practices, between institutional regulation and international trade. For instance, Tregear (2003) suggests that UK specialty products, e.g. the Aberdeen Angus cattle, are not survivors from the past but are modern products, or commodities, resulting from the interaction of tradition and innovation for market purpose. Similarly, in her ethnography of the Taleggio cheese in the Italian Alps, Grasseni (2003) shows how the marketing of this traditional cheese is tied into the sale of a whole landscape. Romantic images of mountains and wooden tools are used to sell the cheese, and also to sell the farming practices and landscapes that are necessary for its production.

The economic anthropologist Wilk (1995) provides further insight, nurturing our approach to the knowledge dynamics underlying OFS, bridging market and a search for identity within a globalising context. Wilk challenges the basic oppositions of ‘indigenous and imported, authentic and false, local and global’. Based on his fieldwork in Belize, Wilk (1995) introduced the concept of ‘global structures of common difference’ to explain that models and values circulate and compete from local to global dimensions. His research shows that Belizeans have been absorbed into international markets, but they reacted building their distinctiveness and diversity apart from other nations. The notion of ‘global structures of common difference’ is thus particularly helpful to explore the controversial effects of origin food on diversity of practices, tastes and knowledge without clear-cut interpretations.

Beyond this contemporary body of anthropological literature, origin food and *produits de terroir* have also been addressed by geographers concerned with food and agriculture, and in particular with the geography of local agri-food systems. In France, historically, cultural geography was first interested in origin food as the result of the adaptation of man in a

geographical context¹⁴, and after World War II as a survival phenomenon marginalised by the industrialisation of agriculture (Bérard et al 2004). In recent decades, however, the approach to origin food changed within geography, and in particular in the fields of rural and economic geography, based on the interpretation of origin food as quality products, within a renovated revival. Spatial concepts underpinning origin food, such as ‘local’, ‘community’, ‘food-shed’¹⁵, and ‘place’ have attracted new research interests (Feagan 2007). For instance, while articulating and representing relationships between people and their environment, origin food becomes a relevant place to study the innovative articulation between countryside and cities, and the construction of rural landscape (Laurens 1997; Benoît et al. 2006).

The construction and the promotion of ‘typicity’ and ‘locality’ are also of primary importance in the work of food geographers, where the concept of *terroir* is often coupled with the social construction of quality (Pitte 2009; Fumay 2010; Parrot et al. 2002; Hirczak 2011) and with an interest in territorial development (Delfosse 1996, 2007; Bessière 1998, 2017; Laurens 1999). For instance, Delfosse (2007), in her geographical history of French cheeses, underlines the regional identity dimension of cheese *terroirs* and the interest that national and local institutions have in their development. In a more recent analysis, Delfosse (2010) argues that GIs are models of governance for *terroirs* that have effectively linked local producers with institutions for decades. In this function of governing *terroirs*, she suggests that GIs are nowadays coupled with alternative forms of governance of *terroirs* such as the Slow Food Presidia. Laurens (1999) analyses the Aveyron region with an entry point on the territory rather than on a specific product. She underlines how local institutions use the notion of *terroir* to develop a unified development strategy, including a touristic offer, based on a common identity among local stakeholders and their different products, such as the PDO cheese Laguiole or the knife with the same origin name. The notion of a socially constructed territory underpinning origin food recalls power relations and political goals, as well as identity issues. Such understanding of territory contributes greatly to nourish the questioning of this Thesis.

Recently, French economic geography looking at OFS goes further in this direction and focuses on the notion of quality and its market implications in relation to origin food, in a progressive shift from the notion of *terroir* to the more dynamic one of ‘territory’ (Frayssignes 2005; Hirczak 2007). Authors appropriated the concept of ‘territorial resource’ originating from rural economy to understand the process of selection and activation of territorial resources (including savoir-faire and knowledge that are specific to one territory) operated by OFS and their potential for rural development (Gumuchian and Pecqueur 2007; Pecqueur and Colettis 2004; Mollard 2001). Similar to the concept of ‘heritage making’, (mainly) used by food anthropologists, Requier-Desjardins (2009) refers to such a process as ‘territorial anchorage’, i.e. the transformation of local resources into assets upon which to create market value. Such approach suggests that a region has specific, non-transferable assets, e.g. collective organisation, know-how and reputation, that are only potential, virtual, and become ‘resources’ only if activated by a voluntary

¹⁴ See Paul Vidal de La Blache’s ‘possibilism’ theory (1926).

¹⁵ The concept of ‘food-shed’ refers to ‘a socio-geographic space: human activity embedded in the natural integument of a particular place’ (Kloppenborg et al. 1996:37).

collective process of local rural development, or, in other words, if and when local stakeholders appropriate and mobilise them. From such multidimensional definition of territorial resources crossing geographical and economical approaches, a ‘territory’ is what emerges from a construction process based on social interpretations, mediations, and appropriation of the space from local actors, as well as on natural and economic resources (Di Méo 1998). Through the lens of a qualification process based on territorial resources, thus, cultural biodiversity becomes an output of OFS, but also and foremost a resource in the construction of the origin food itself that makes marginal rural areas competitive on a global market.

1.3.2. (Re)localising food in rural studies: AFN vs LAFS

The previous section shows that we are witnessing a scientific trend in origin food studies that integrates economic concerns into anthropological and geographical debates. Meanwhile, a trend towards the relocalisation or regionalisation of economics is emerging in the field of food systems, where territory and locality are intertwined with social and economic dynamics. Social scientists, including numerous geographers, analyse thus the declining effects of modernisation on rural tradition and a simultaneous search for authenticity and quality underpinning ‘cultural economies’ (Ilbery and Kneafsey 1998; Kneafsey et al. 2001) and the ‘alternative geography of food’ corresponding to the ‘quality turn’ in food production and consumption (Whatmore and Thorne 1997). A growing body of literature is devoted to the collective initiatives aiming at localising food, under the umbrellas of Local Agri-food Systems (LAFS, also known with the French acronym SYAL) and Alternative Food Networks (AFN).

On one hand, the (mainly) French literature on LAFS defines LAFS as ‘production and service organisations (agricultural and agri-food production units, marketing, services and gastronomic enterprises, etc.) linked by their characteristics and operational ways to a specific territory. The environment, products, people and their institutions, know-how, feeding behaviour and relationship networks get together within a territory to produce a type of agricultural and food organisation in a given spatial scale’ (Muchnik 2009; Muchnik and Sautier 1998). This concept refers to number of diversified territorial innovation processes, mainly originating in the Global South, especially Latin America, that aim at generating added value for local food products facing the pressure of global market (Muchnik 2009). Such literature provides us with a framework to think about the importance of differentiating products based on the uniqueness of specific resources that are rooted in a territory and cannot be transferred. Moreover, LAFS literature allows us to consider consumers demand and dynamics of distribution of food based on proximity.

On the other hand, in the Anglo-Saxon world, the re-localisation and re-socialisation of the food system is approached by the literature that points to the emergence of ‘alternative’ food initiatives (Marsden et al. 2000). According to the AFN approach, the conventional, industrialised, and globalised food system, where producers and consumers have dramatically lost a direct relationship and food is an anonymous commodity. Conversely, there is an emerging food economy based on another paradigm, questioning the economic primacy of food and challenging systems of trade that move food as a commodity between anonymous producers and consumers. In such an ‘alternative’ paradigm, the concept of

‘embeddedness’ (Polanyi 1957) reveals that social, environmental, and health issues are integrated into the economic model (Renting et al. 2003; Sonnino 2007; Hinrichs 2000; Ploeg et al. 2000; Goodman 1999).

OFS have a specific place in the analysis of AFN. GIs and Slow Food Presidia are explored as potential tools to develop alternative food markets and networks that reconnect people with the geographical and social dimension of their food because they reveal the food origin and production process (Ilbery and Kneafsey 2000; Ilbery et al. 2001; Brunori 2007). Thus, GIs and Presidia create a community based on a reduced physical or symbolic distance between producer and consumer sharing a place, knowledge, trust, and also rural development practices (Marsden 2004). In particular, works of Tregear (2011) and Brunori (2007) bring attention to the role of origin food consumers in shaping the food system. It is the ‘quality turn’ pointing to the consumers’ demand for transparency and guarantees of quality (Murdoch et al. 2000; Goodman 2004). Notions such as ‘trust’ and ‘geographical proximity’ become critically relevant.

This short presentation of LAFS and AFN literatures shows their converging interests, but also different approaches and implications. Bowen and Mutersbaugh (2010) provide a rich attempt to confront the scholarly tradition of the AFN with that of LAFS/SYAL. In particular, they underline that:

First, while AFN scholars tend to understand the “local” in terms of positionality, in a distributionist sense (*vis-à-vis* one’s relation to sites of food production or consumption or along commodity chains), SYAL studies frame local food systems as anchored within particular territories. Second, SYAL research places significant emphasis on collectivity, both in terms of collective institutions and shared forms of knowledge and identity. Third, although both perspectives are framed in opposition of the industrialization of the global food system, AFN scholars focus more on alternative distribution schemes (e.g., organic, fair trade, and direct marketing schemes), while SYAL researchers favor territorially anchored structures (e.g., geographical indications).

This Thesis is particularly inspired by the wide range of phenomena referred to as AFN and the vibrant debate that has also recently addressed their emergence in developing countries (Bellante 2016; Si et al. 2015; Friedberg and Golstein 2010). Authors from different disciplines and schools of thought theorise such diversity of AFN in distinctive ways. For instance, the anthropologist Pratt (2007) outlines the various ways in which AFN may attempt at a reconnection between production and consumption. Some initiatives are ‘organizational’ and aim at reorganizing market relations towards embeddedness, such as with self-provisioning, ‘direct’ or ‘fair’ trade. Then, other initiatives are more ‘discursive’ and build on ‘the conversations about how and where the food was produced, elaborating knowledge and expertise which may be based on direct experience, or crucially on labels’. The author also suggests that very heterogeneous realities emerge when looking at AFN from the point of view of production, consumers, or distribution.

Whereas some authors (Grey 2000) consider the AFN as completely diverging from the conventional system, some other authors point out that there is no dichotomy, and that concerns of economic competitiveness are central also to AFN, including OFS (Murdoch and Miele 1999; Higgins et al. 2008; Sonnino and Marsden 2006). According to this second approach, AFN are market networks that answer thus a growing niche markets

segments' search for high quality, healthy, sustainable, and authentic products (Marsden et al. 2000; Holloway 2007; Brunori 2006; Ilbery and Kneafsey 2000).

In particular, Maye et al. (2007) theorise two approaches to AFN: (i) the *process and place*, aiming at embedding food processes, i.e. production and consumption, into specific local places; and (ii) *product and place*, aiming at embedding products into places by giving information to consumers, although not necessarily local consumers. The first approach corresponds to a radical opposition against the conventional system; the second approach—that is the approach used to address OFS—corresponds instead to a neoliberal strategy to find a niche or reformist policy to steer rural development, for instance with GIs. Within this second approach, labelling strategies like OFS are considered 'enclosures' (Guthman 2007) on the basis of a defensive economic strategy.

Goodman (2003) makes a geographical distinction between North American and European ways to approach AFN and suggests that the first body of literature is more focused in economic and environmental justice on a global level, whereas the second, that could include also the LAFS, is more focused in supporting a rural development agenda, also through the support to OFS. Goodman (2003) also recognises a more radical (in US) *versus* a more reformist (in Europe) approach and explains such divergence suggesting that, in Europe, scholars of the agri-food are more involved into the political sphere, as it is for OFS and EU rural policies.

Other authors bring more complexity to the study of OFS within the AFN framework and contend that OFS cannot be labelled as simply 'reformist' or a 'market niche tool'. For instance, Fonte (2008) contends that both approaches suggested by Goodman (2003) co-exist in Europe. Moreover, Fonte (2010) considers GI systems more complex than labels because, by looking at the process of production, GIs establish a strong link between the *process and place* and generate more outcomes than competitiveness. The link between 'product and place' derives precisely from such a specific process of production, from local knowledge and a local culture embodying knowledge of how such a food might be produced and consumed.

In her work, Fonte instead outlines an opposition between a *reconnecting* and an *origin-to-food* perspective, on the basis of the different place occupied by food culture and food production. According to the two perspectives, origin or local food takes on different meanings. 'Local food' refers in the first case to *socio-spatial proximity*, where consumers and producers of the same place reconnect to each other. In the second case, 'local food' refers to the particular territory where production happens.

To sum up, authors mainly differ in approaching the empirical meaning of 'embeddedness' and in evaluating its effects *against* or *within* globalisation. And an open question also frames this research: are AFN, and in particular OFS, a product of neoliberalism, and just for a niche, through commodification of nature and cultural resources? Moreover, this debate is relevant to this research for several other reasons. Firstly, it helps to think relationally and brings attention to consumers as a fundamental part of the food system, as well as giving distributors and cooks the role of transferring the 'alternativeness' and the values that are associated (Ilbery and Kneafsey 2000). Then, such debate brings attention to the conditions of production and place-knowledge as key elements in the 'quality turn'

framing the current trend of endogenous rural economic development. Finally, such debate provides a framework to contrast the two studied OFS and position them in relation to the conventional system, to understand which are the mechanisms used to reconnect food with its origin.

1.3.3. Knowledge dynamics: an anthropological perspective

Being that rural knowledge and practices are a core part of cultural biodiversity, the research question of this Thesis demands a critical exploration of the forms of knowledge operating in food systems. This section aims to justify the choice of vocabulary made in this Thesis and the theoretical approach adopted to deal with knowledge issues. Firstly, we aim to clarify the meaning of traditional knowledge in the current scientific (and political) debate, and the choice to refer rather to local knowledge. Then, a framework to understand traditional and local knowledge in relation to other types of knowledge is provided. Finally, we elaborate on how the anthropological literature on the ‘ways of knowing’ influences the approach of this Thesis.

Different authors made conceptual and vocabulary choices within the debate on the relocalisation of food in terms of knowledge. The diversity of terms used to refer to different aspects (e.g. ‘traditional’, ‘local’, ‘ecological’, ‘typical’, ‘specific’, ‘authentic’, ‘collective’, ‘tacit’, ‘codified’, ‘explicit’, ‘lay’) points to the difficulty of characterising and assessing knowledge and practices underpinning OFS. A preliminary distinction is between tacit knowledge and codified or explicit knowledge. Tacit knowledge refers to pre-discursive knowledge, defined by Polanyi (1966) as ‘we know more than what we tell’. Similarly, building on Wittgenstein’s (2009), Grasseni (2008:165) defines tacit knowledge as ‘the capacity to perform skills without being able to explain how.’

More complex are instead the definition and implication of the concepts of traditional knowledge (TK), traditional ecological knowledge (TEK), and local knowledge. The concept of TK emerges from cultural ecology and is increasingly integrated into soft law as a result of a concern on fairly remunerating it (Panizzon 2006). The general focus is shifting from indigenous people to rural communities, considering that TK plays a role in ‘resource management (pruning of plants and domestication of animals to increase production) and environmental manipulation (irrigation, encouraging growth by burning tracts of land, etc.) [...] which the holders have discovered and identified as resourceful for the livelihood of contemporary and future generations’ (Panizzon 2006).

Table 1.1: Various definitions of Traditional Knowledge

<p>‘content or substance of knowledge resulting from intellectual activity in a traditional context, [including] the know-how, skills, innovations, practices and learning that form part of traditional knowledge systems, and knowledge embodying traditional lifestyles of indigenous and local communities, or contained in codified knowledge systems passed between generations.’ (WIPO 2010)</p>

<p>‘knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity.’ (Article 8 (j) of the Convention on Biological Diversity (CBD 1992)</p>

‘associated with pre-industrial practices of production and transmitted from generation to generation of farmers.’
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(Fonte 2010:20)

‘historical tradition’ in which knowledge ‘becomes encoded in rituals, in religious observations, and in the cultural practices of the everyday life.’
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(Redclift 1992:402 quoted in Murdoch and Clark 1994)
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However, this research prefers to qualify knowledge as ‘local’ rather than ‘traditional’, for multiple reasons. First, TK is recognised by scholars as a polysemous and particularly debated term, as Table 1.1 shows, despite widespread use by international institutions (Panizzon 2006; Escobar 1998; Rocha 2005). We prefer to refer to local knowledge in order to bypass the bias of considering TK and TEK as a prerogative of indigenous people. In addition, referring to local knowledge aims at bringing attention to the place and context in which knowledge dynamics develop. In this sense, [l]ocal is not only identified with a geographic location and a particular community but also constituted through ‘its methods of producing situated knowledge’ (Jasanoff and Martello 2004:14) (Fonte 2010:5). Differently, when this Thesis qualifies knowledge as ‘traditional’, it is to emphasise the historical dimension of certain practices and their transmission from generation to generation.

This conceptual choice follows the work of other scholars who have explored articulation of forms of knowledge (in relation to food) in different geographical rural contexts, as I will briefly recall (Morgan and Murdoch 2000; Fonte and Papadopoulos 2010; Bruckmeier and Tovey 2009; Van der Ploeg 1993; Dargan and Harris 2009).

In the UK, Morgan and Murdoch’s (2000) study on the knowledge dynamics in the current segmented food system explains the decaying role of rural local knowledge in conventional agriculture. Farmers’ local knowledge that depends on the geographical context and is shared in practice, in the 50s was replaced by scientific, standardised, top down knowledge that aims to create a reproducible system. Building upon previous local knowledge became unsuccessful in the new scientific paradigm, although is becoming a contemporary challenge in organic agriculture. Conversely, in the Isle of Skye, Scotland, Dargan and Harris (2009) emphasise the ‘located’ and ‘situated’ aspects of local knowledge in its current process of re-construction. There, local actors have merged scientific knowledge with knowledge of local places and have contributed to the re-creation and appropriation of local knowledge on food production by the local community. Similarly, Van der Ploeg’s (1993) work on Andean potato farmers distinguishes between local or tacit knowledge that is variable and embedded in a specific context, as an *art de la localité*, and scientific knowledge that is, by contrast, not context dependent but standardised. Van der Ploeg (1993:202) argues that local knowledge is more useful than scientific knowledge to cope with farmers’ daily problems because the ‘variability’ of local knowledge, which scientific discourses refer to as ‘inaccuracy’ or ‘vagueness’, is what allows farmers the ‘active process of interpretation and change’ of the environmental changes that farmers are not willing to standardise.

A further line of attack on food knowledge is provided by the work of geographer Storper (1997) who is interested in the economic relationship between knowledge and institutions in the current relocation of food. Storper (1997:16) sheds light on ‘non-codified traditions and ways of doing things’ as key for the connectedness and competitiveness of firms located in the same region, explained in terms of proximity, and argues that a geography of economic activities mirrors a geography of knowledge. Different ‘Worlds of production’ are based on different conventions and economic logics¹⁶. Commercialism, efficiency, and branding prevail in the Industrial World whereas trust, local renown, and spatial embeddedness are more relevant in the Interpersonal World of the specialty goods that this study specifically addresses. Such work underlines the relevance of exploring the link between forms of knowledge, market, and power in a knowledge society.

Considering this diversity of angles to explore food-related knowledge, the classification and approach outlined by Fonte and Papadopoulos (2010) and by Bruckmeier and Tovey (2009) is particularly relevant to the goals of this Thesis because it focuses on the relationship between knowledge and social relations. Fonte (2010) contrasts ‘expert’ knowledge with ‘local’ knowledge, this latter including ‘tacit’ and ‘lay’ knowledge. According to Fonte,

[t]acit knowledge is [...] a form of knowledge transmitted pre-discursively in a community through its social norms and habits. [...] Lay knowledge is instead [...] a technical form of knowledge acquired through particular experiential circumstances and transmitted by specific ‘local experts’ in informal situations of learning. It differs from ‘scientific’ knowledge in that it is neither standardised nor formal. Its variability (linked to specific places and cultures) has earned it an inferior status in relation to ‘scientific’ knowledge.

The difference between forms of knowledge is mainly related to the way it is created and transmitted, as Table 1.2 details. According to Fonte (2010:24), although ‘for certain types of production traditional lay knowledge may have the reputation of being static or outdated’, in reality the process of relocation of food generates new reconfigurations and dynamics. In rural areas, ‘[p]rocesses of recovery and valorisation of traditional lay knowledge [...] result not only in interaction and dialogue, but also in confrontation, with other forms of knowledge and other actors, experts and managers.’

¹⁶ According to Storper (1997), codified knowledge and standards underpin industrial production undermining localised innovation. On the other hand, conventions and practices based on local, tacit, personalised sets of relations underpin the differentiated small-scale production. This standardised/specialised divide is further distinguished by different market orientations. Generic goods easily identified are directed to mass markets, whereas differentiated goods are aimed at a dedicated market that can recognise their specific qualities. These double sets of distinction allow Storper to identify four productive worlds: (i) the Industrial World combining standardised knowledge and processes for mass market e.g. McDonald’s; (ii) the World of Intellectual Resources combining specialised production processes for mass market goods, e.g. the genetically modified soya; (iii) the Market World bringing standardised knowledge and processes into a specialised market, e.g. food based on the cook-chill technology; (iv) the Interpersonal World bringing specialised production processes to dedicated consumers, e.g. Slow Food Presidia.

Table 1.2: Forms of knowledge in OFS

Scientific knowledge	
<i>Production</i>	by researchers
<i>Transmission</i>	public and controlled/certified education and training
<i>Criteria</i>	specialised, discipline-bound or interdisciplinary, methodologically guided, documented/written, public and published, neutral with regard to people
Managerial knowledge	
<i>Production</i>	in resource/project management and decision-making
<i>Transmission</i>	mainly in public and controlled/certified education and training
<i>Criteria</i>	specialised; more clearly and explicitly bound to power and decision-making and norms; not always public and published; often about procedures; can also be informal and based on individual experience
Local knowledge	
<i>Production</i>	from local cultural traditions and practices
<i>Transmission</i>	learned in informal and private contexts of family and face-to-face interaction, in neighbourhoods; intergenerational transmission; often orally transmitted print and other media may be of increasing importance in local knowledge use and transmission
<i>Criteria</i>	locally and culturally specific, context-and actor specific or situated, person-bound, experience-bound or more experiential; not neutral with regard to people; bound to production and resource use in agriculture.
<i>Subcategories</i>	Tacit transmitted pre-discursively in a community through its social norms and habits
	Lay technical, acquired through particular experiential circumstances and transmitted by 'local experts' in informal learning situations <ul style="list-style-type: none"> • Ecological – from the interaction with the environment • Traditional – transmitted from generations

Compiled from Fonte (2010:15-20), Bruckemeier (2004), Bruckemeier and Tovey (2009)

Our approach to deal with such above-mentioned definitions is fluid, dynamic, and not oppositional. This research, in fact, opted for considering knowledge as always changing and emergent, something that undertakes a complex and constant process of appropriation and reformulation¹⁷. This approach is supported by recent anthropological works that have considered local knowledge as situated, based on practice, and not context-free knowledge or something taking place inside the heads of individuals. Thus, local agricultural knowledge can be seen as 'embodied capacities in the performance of tasks in social contexts shaped by particular cultural logics' (Escobar 1998).

This performative, 'practice-oriented' view of local knowledge, rooted in Heidegger, Bourdieu, and Giddens's theoretical reflections (Escobar 1998), has inspired a rich body of literature. In the field of education and management, Lave and Wenger (1991) provide a

¹⁷ Anthropological literature has brought complexity to the study of practices, their meanings, change, and persistence, and have underlined the political implications of referring to 'transfer', 'exchange', or 'circulation' of knowledge in rural areas, in particular when exposed to development policies and projects (Moity-Maïzi 2011).

relevant elaboration with the concept of ‘situated learning’, that consider how learning processes are shaped by social interaction within a particular context (i.e. a particular place and moment). Further elaboration is outlined by Ingold (1993, 1995, 1996, 2000) who emphasises that knowledge is the result of a process of ‘enskillment’ in a specific environment as local knowledge is inherently ‘embodied’. Within an ecological perspective, the author understands skill not simply and mechanically as ‘a technique of the body’, as done by Mauss (1973:104), but as generated through a practical, sensory, and ‘embodied’ engagement of people with their environment (2000:351). Ingold’s (1993) ‘taskscape’ concept helps understanding the space as socially shaped by human activity. This approach is particularly insightful here as it allows making the bridge between the natural environment and human activities and practices, considering skills and practices as the result of both ecological and intersubjective relations.

Other recent anthropological works consider learning processes as situated and entangled with the world around us (as for Lave and Wenger) and also influenced by cognitive dynamics (inspired by the phenomenological and/or cognitive perspective of Merleau-Ponty and Wittgenstein) (Harris 2007; Vaittinen 2014). For instance, Bloch (2005) looked at cultural transmission as a recreation process and not as unidirectional transfer of a coherent knowledge system, as earlier literature suggested, since every ‘neurophysical individual’ receives knowledge in a unique creative way. Other studies have introduced the concept of ‘ways of knowing’, and of these studies, ethnographies by Marchand (2007) and Grasseni (2007) are particularly relevant in this Thesis. On one hand, Marchand (2007) explores how apprentice masons develop a practical know-how through interactions with the ‘masters’ in different geographical contexts (Yemen, Mali, and the United Kingdom). On the other hand, Grasseni (2007) investigates the development of ‘skilled vision’ in the Italian Alps breeding communities, bringing renewed attention to tacit forms of knowing and revealing the importance of the mediation of the senses.

To sum up, our approach to knowledge and practices emphasises the context, practical experience, tacit knowledge, and practitioner perspective. Such approach provides a broader framework to which discussions on the effects of practices of cultural biodiversity conservation can be referred. Moreover, the implication is that the processes of knowing origin food as conceptualised in this study is methodological, as further detailed (2.2.1.).

1.3.4. Linking anthropology and geography in rural studies

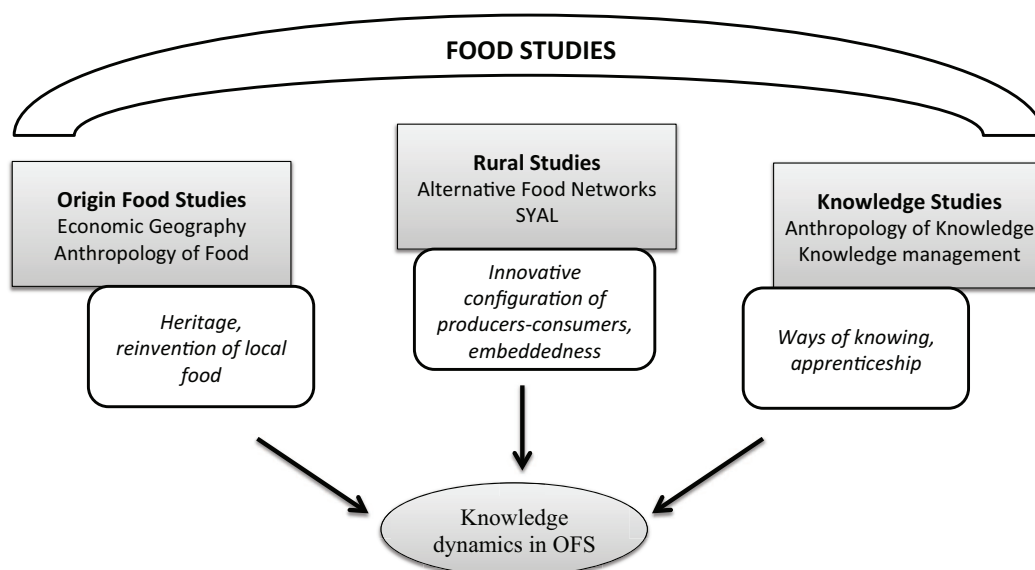
The reference to the three different scientific domains is motivated by the cultural, economic, and political challenges inherent to OFS. OFS have a double value, as pointed out by Papa (2000). On one hand, they have a market, utilitarian value, that allows trading origin food on a global market and justifying their added value. On the other hand, they have a cultural patrimonial value that links them with the specific territory and community from which they come. Thus, we consider that for understanding the process of creation and development of OFS and related practices of production both aspects are inseparable and one discipline alone cannot shed enough light on such complex process.

Hence, to answer this Thesis research question we mobilised concepts that are relevant in the Food Studies and underpin the contemporary scientific debate in anthropology of food,

economic geography, and institutional economy. Moreover, it is worth noting that disciplinary distinctions are increasingly blurred in this field. In particular, anthropology and geography might overlap greatly when exploring origin food initiatives in terms of both their research questions and methods (based on fieldwork) (Bérard et al. 2004). Bérard et al. (2004) argued that what mainly distinguishes a geographical and anthropological study of origin food is a different point of view, *regard*, during fieldwork because anthropological fieldwork is based on a long, detailed observation of representations and tacit knowledge in constant and changing interaction with the environment (Bérard et al. 2004). Within the limits of multisite ethnography, this Thesis has attempted to utilise the anthropological perspective throughout the research by listening intently to discourses and observation of know-how in order to point out gaps between what people say and do and ‘find the seeds of new knowledge practices in rural development’ (Bruckmeir and Tovey 2009).

However, the main terms used in the title and scope of this Thesis may be understood in their link between space and society and reveal how this Thesis could contribute to the debate on the ‘alternative geographies of food’. As we have seen, cultural biodiversity refers to the diversity of landscapes and genetic resources adapted to environments by effects of collective and historical cultural practices of farming, processing, and consuming. Then, origin food emerges in a geographic place from the mutual relationships between pedo-climatic and human factors, and such relationships are so essential that their trading names are taken from the place of origin (and from that, the need to protect the correct use of such place name). Furthermore, with the term ‘scheme’, we refer to initiatives addressing the spatial and social reconfigurations of actors in the food chain. Moreover, the idea of borders brings to mind a spatial and political issue, one of delimitation and definition of a territory or culturally built region. Finally, the term of ‘gap’ recalls the idea of a spatial and cultural distance applied to practices and understandings of local actors. The combination of the three academic debates, explored through an anthropological ‘regard’ makes this Thesis approach to OFS original.

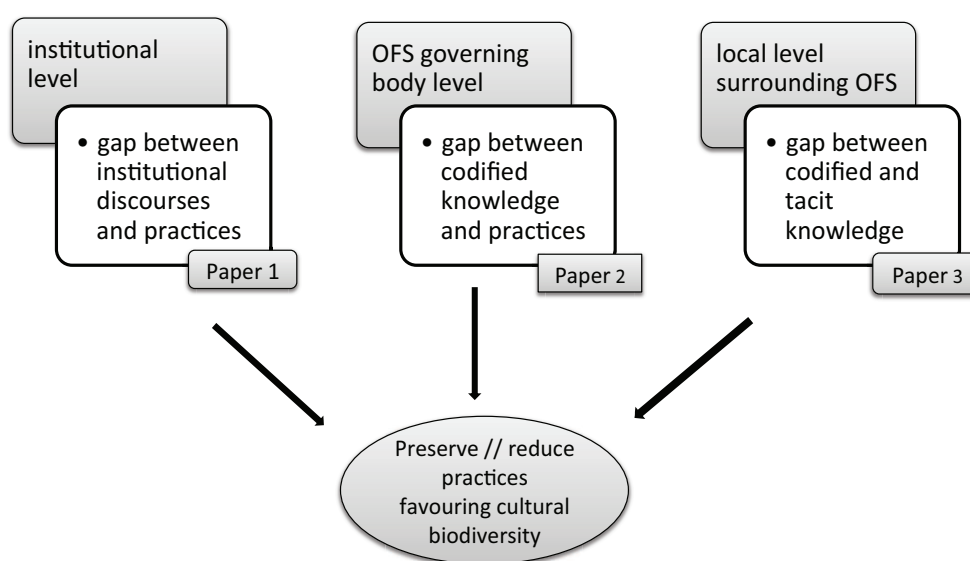
Figure 1.5: Theoretical framework



1.4. Objectives and research questions

This Thesis' overarching objective is to identify and explain the gap between the discourse about cultural biodiversity and the related knowledge and practices in OFS. This question is explored through three different entry points that correspond to three units of analysis (i.e. three main levels of gaps). They are developed in the three central chapters of the Thesis.

Figure 1.6: The demonstration of the Thesis



First, taking the institutional level as an entry point, we address the gap between institutional discourse and practices, based on evidence from the French and Italian case studies. Second, looking at the collective body of OFS, we address the gap between collective discourse that is co-constructed in specifications and tacit knowledge, within the origin scheme club, mobilising evidence from the four case studies. Finally, again on a local but more comprehensive level, we explore the gap between collective discourses and tacit knowledge surrounding the origin scheme club, using evidence from case studies in France and Morocco. Associated with these units of analysis are three further objectives. The first objective is to further characterise the GI system and the Slow Food Presidia model in relation to their effects on CB. The second objective is to explore the dynamics of knowledge associated with the production practices and to understand the status of local knowledge in the development of origin food schemes. The third objective is to assess major conditions of maintenance of CB.

The main research question of this Thesis is formulated as follows:

Which is the gap between discourse and practice about cultural biodiversity conveyed by OFS?

Sub-research questions are the following:

1. Which are the institutions and logics that determine the definition and practice of cultural biodiversity in OFS? (*Chapter 3*)
2. How is the codification of knowledge and practices realised and how are rules applied? (*Chapter 4*)
3. To what extent are tacit knowledge and practices modified and created within OFS? (*Chapter 5*)

In order to answer these questions, another aspect is simultaneously addressed, i.e. the exploration of power relations underlying the initiation, development, and effects of an OFS. Hence, all the chapters raise questions about the political role of OFS, which is the governance underpinning OFS, and which power relations emerge between stakeholders including the ones that are not OFS producers (e.g. consumers).

With an anthropological perspective, this Thesis is meant to answer to these questions by bringing together attention to individual (cognitive) and system dynamics. Such approach to the research questions is explained in Chapter 2 concerning the methodology.

1.5. Thesis outline

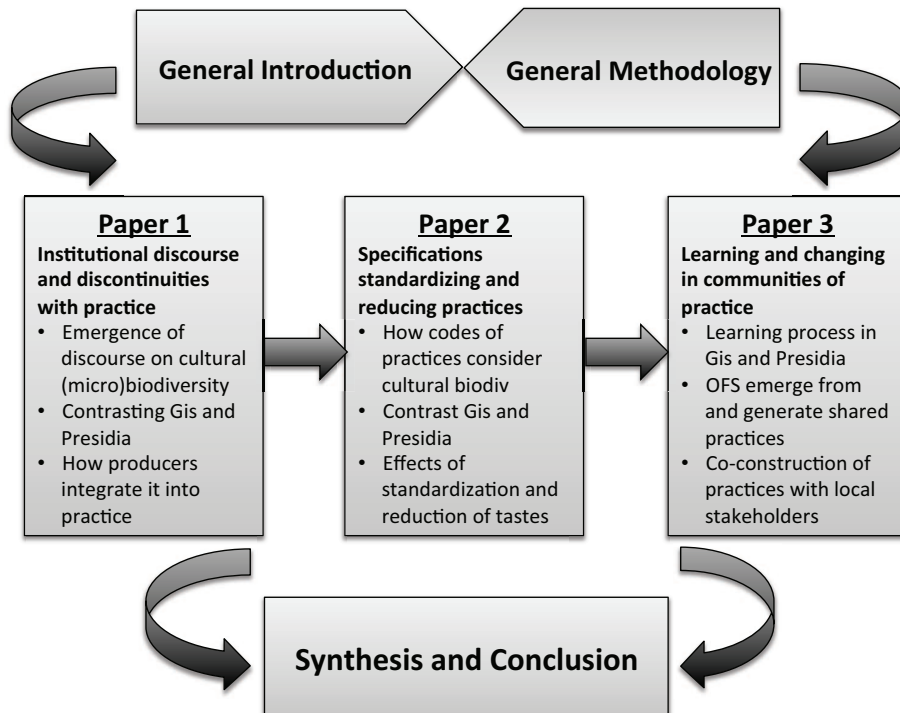
The rest of the Thesis is structured as follows. Chapter 2 introduces the general methodological approach used in this Thesis. Primarily, the methodological foundations and justification of the case studies selection are provided. The second part of this chapter summarises the overall methodological framework we used to collect and analyse the data and present the results. Then, an overview of the case studies in general is presented. This comprises the geographical location, the description of the origin food and emergence of the origin scheme, and a description of the main stakeholders and governance system. Further details required by the following chapters will be provided in the appropriate chapter.

Chapter 3-5 present the results and discussions of the Thesis, which are separated into three studies (Study I-II-III).

- Study I (Chapter 3), presents the gap between institutional discourses and specific projects. It analyses the institutions and logics that underpin the definition of cultural biodiversity in OFS through a discursive perspective, and confront with specific projects.
- Study II (Chapter 4), looks at the collective governing bodies of OFS as an entry point to assess the process of codification of knowledge and practices. On the other hand, it investigates the application of rules and their effects on practices and knowledge.
- Study III (Chapter 5), presents another collective dimension of OFS, surpassing the governing body and including other actors. It explores what happens thereafter to the club of OFS and the codified practices, asking to what extent tacit knowledge and practices are modified and re-created, as a result of an OFS.

Finally, Chapter 6 presents the synthesis of the findings and concluding remarks. This chapter summarises the main findings and discussions of the three studies (Study I-Study II-Study III) and contributions to the research. Further implications to policy and development and recommendations for further research are also presented.

Figure 1.7: The structure of the Thesis



CHAPTER 2

Methodology

Chapter 2

Methodology

2.1. Design

The previous chapter emphasised the broad interest in studying OFS in general and, specifically, an interest in their relation to and effects on cultural biodiversity and traditional practices. The present study builds on this scientific and societal need with the scope of analysing the OFS stakeholders' understanding, narratives, and daily practices of cultural biodiversity.

This chapter aims to explore the research methodology adopted for capturing and illustrating the above-mentioned core interest of the Thesis. Considering the interdisciplinarity of the theoretical references, the complexity of the scope and phenomena that bridge production, transformation, and market aspects to the territorial dynamics and the actors' appropriation, we consider it worthwhile to apply a multi-methodological approach based on qualitative methods to address four main case studies of OFS on origin cheese recognised as GI and/or Slow Food Presidia. The very core of this study was based on anthropological enquiries and consisted of 24 months of ethnographic multi-site fieldwork, in France, Italy, and Morocco. An important aim here is to advocate for the value of ethnographic participant observation, and especially for the use of apprenticeship as a research tool to study the embodied and experientially grounded practices.

The first part of the chapter will outline the methodological foundations of this research (2.2.1), the scientific reasons for selecting the four case studies (2.1.1), how research was conducted before and during fieldwork (2.1.2), and how the analyses on the collected data were performed (2.1.3). Next, the chapter will provide an overview of the selected case studies (2.2).

2.2.1. Methodological foundations

This section is particularly concerned with introducing and situating the methodological choices made in this Thesis. The analysed scientific literature supported the choice of a multi-methodological approach consisting of defining case studies to be investigated through different qualitative methods. Applying a quantitative analysis approach or relying on statistical representativeness based on the definition of quotas for each category of actors would not have answered the research question. As suggested by de Sardan (2016), quantitative analysis based on questionnaires would have failed in the aim of analysing gaps and discrepancies between discourses and practices because it would have solely addressed 'declarative data' (excluding actual practices) collected in an artificial and interrogative situation that tends to produce production of 'agreed or stereotypical answers'.

A main methodological choice relates to the case study method. If the origin of the case study method lies in anthropology, such method is also widely used in other social sciences; e.g. sociology, psychology, and interdisciplinary studies, because it is considered to be the methodology ‘expected to capture the complexity of a single case’ (Johansson 2003). Here we adopted an inclusive definition of ‘case study’ understood as ‘defined by interest in individual cases’ (Stake 1995). The ‘case’, i.e. object of study of case study researchers (Yin 1994; Merriam 1994; Stake 1995; Miles and Huberman 1994) is synthesised by Johansson (2003) as to:

- ‘be a complex functioning unit,
- be investigated in its natural context with a multitude of methods, and
- be contemporary.’

The case studies addressed by this research are OFS intended thus as social units, and have been purposely selected as explained below (2.1.2). The research tools we apply are keys to the ethnographic enquiries, which are the ethnographic methods most closely related to the studied subjects, their everyday life and conversations. They are intended to unfold the practical experience of different communities and the ‘actor’s point of view’ (de Sardan 1995). Observing practices and conducting interviews in natural situations in which informants feel at ease allows us to capture less stereotypical answers and to reveal discontinuities between official discourses and personal stances (de Sardan 2016).

This section also aims to clarify and justify a methodological choice underpinning this study: that of being an apprentice as well as a researcher. As suggested by de Sardan (1995), a young researcher learns how to conduct anthropological fieldwork by conducting the fieldwork itself; it is a learning-by-doing process that cannot be fully anticipated nor technically mastered before it happens. But beyond being a ‘learning researcher’ in the field, we performed participant observation as a cheesemaking apprentice with shepherds and cheese makers, in particular in Béarn (France). Our embodied involvement in cheesemaking practice was an instrumental research tool for understanding the process of learning and developing experientially grounded knowledge of cheesemaking in relation to cultural biodiversity. Following Marchand (2010), we consider that apprenticeship is ‘both a mode of learning and a field method’ and this stance helped to address learning processes in the real context, where verbal communication is complemented or even overcome by physical communication. As with ethnographers such Wacquant (2004) and Downey (2005), a corporeal approach to ethnography was used: we were immersed in the cheesemaking activities along with the research participants. This echoes Ingold’s (2008) argument that anthropology is a study *with* people rather than *of* people.

Hence we found this method inspiring, coherent, and effective in gaining first hand practical, tacit, sensory experience and expertise during this research work. Through our bodies, we joined the daily routine, endured physical effort, pain and joy, in a strong relationship with the environment. By doing so, we gained further access to the actors’ perspectives and the learning process based on experience that occurs in OFS. In addition, the position of apprentice was central in enabling the data collection and facilitating interactions in the field.

2.1.2. Justification of the case studies

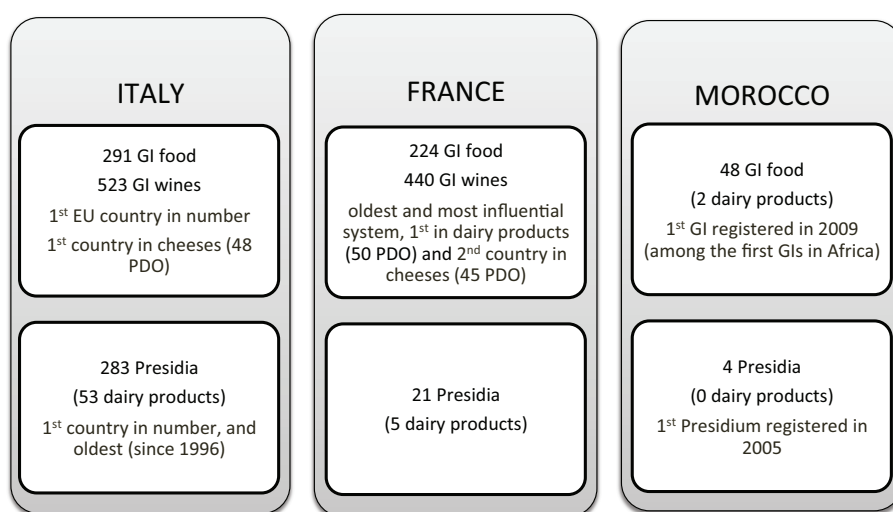
The selection of the case studies is based on three stages: (i) the selection of countries, (ii) the identification of the food product, and (iii) the final choice of case studies.

The targeted countries: Italy, France, and Morocco

The research was conducted in three countries where the GI system and the Slow Food movement are particularly relevant and in development: France, Italy and Morocco. The three are located in the Mediterranean area, where a large majority of OFS—and GIs in particular—are produced and marketed and, meanwhile, such origin-based production systems are under threat due to the expansion of the dominant industrial production system (Rastoin 2009).

Regarding GIs, the three countries of the study share a similar regulatory framework, and this allows limiting and narrowing down the elements of confrontation of our analysis. The three countries are members of the WTO and, in the framework of TRIPS, have included GIs as part of their IP legislation, following a *sui generis* approach (rather than a trademark approach) that establishes GIs as a specific IP category. Moreover, they have signed the Convention on Biological Diversity (1992) and the Nagoya Protocol on the sharing of benefits related to (cultural) biodiversity. In the first two countries, France and Italy, the concept of GI has a long history and plays a major role in these markets (Allaire et al. 2005; INAO/CNAOL 2016; Qualivita 2017). Conversely, the third country, Morocco, is a Southern country experiencing a rapid increase of GIs. In the last decade, the Moroccan government has outlined national policies to foster GIs as a rural development tool, under the framework of the Plan Maroc Vert, i.e. the 2008 national policy plan on agriculture meant to frame structural reforms to ensure food security and economic growth (Donner 2016; Hamimaz 2009; Akesbi 2012).

Figure 2.1: Old and new setting for OFS



Sources: Ministero delle Politiche Agricole e Forestali; SFFB 2018, INAO (data 2015); EC DOOR; OMPIC 2018

Regarding Slow Food, Italy—the country of origin of the movement—is key in understanding of the development of Presidia. Alone, Italy accounts for 50% of the total Presidia worldwide. France is 3rd in the number of Slow Food Presidia and it is among the first countries to launch the project after Italy. Finally, Morocco has a growing exposure to the Slow Food movement and is one of the African countries where the movement is increasingly structured and supported by both national and local institutions.

The food product: artisan mountain cheese

After selecting the three countries, i.e. Italy, France, and Morocco, we explored the main OFS examples in the studied area through a literature review and a preliminary regional investigation on the origin-food production systems. Among the varieties of labelled products, we chose to focus on only one value chain for the purpose of clarity, in order to enrich the details of the cross-case analysis, and in order to be more knowledgeable in one field of production during interactions with stakeholders. The preferred focus was on artisanal cheese production for multiple reasons:

- (i) Cheese is an example of origin food where cultural biodiversity is clearly a multidimensional concept including breeds, pasture, landscape, and, foremost, practices and techniques of production. As suggested by Bérard and Marchenay (2006), cheeses are ‘at the crossroad of biology and culture. [...] The cheesemaking systems unite countless practices and forms of knowledge from all domains of living organisms, including plants, animals, and micro-organisms.’
- (ii) The market of specialty cheese is highly relevant worldwide. Cheese is the second niche product in terms of business, after wine (Bérard and Marchenay 1996:232).
- (iii) Cheese has a long history of regulation of origin. For instance, in France, the National Committee for Cheese GIs (French acronym CNAOF) was created in 1955 (Bérard and Marchenay 1996). This is due to the fact that, like wine, cheese allows access to distant markets. As Percival and Percival (2017:23) concluded, ‘cheese is designed for cultural exchange, and it is not coincidence that the cheeses with the most ancient names, like Parmesan or Gruyère, are hard cheeses that are designed to travel’. In the three selected countries, specialty cheese has been addressed by OFS.

In addition, we selected case studies that refer to cheese produced in mountain areas. This has also multiple reasons:

- (i) Mountains are recognised by scientific literature and public policies as storehouses of cultural biodiversity (Spenn et al. 2010; Ramakrishnan 2000; Romeo et al. 2015). OFS might have a role in mountain cultural biodiversity, from ecosystems to local knowledge. For instance, OFS might contribute to the conservation of mountain pastures, local flora, and fauna, including breeds, and the conservation of microbial organisms, especially in cheeses. From the point of view of local knowledge, mountain cheese is highly linked to the conservation of ancestral production techniques, traditional tools, and materials.
- (ii) The positive outputs of the development of OFS are particularly crucial in mountains, which are recognised marginal rural areas where conventional productive

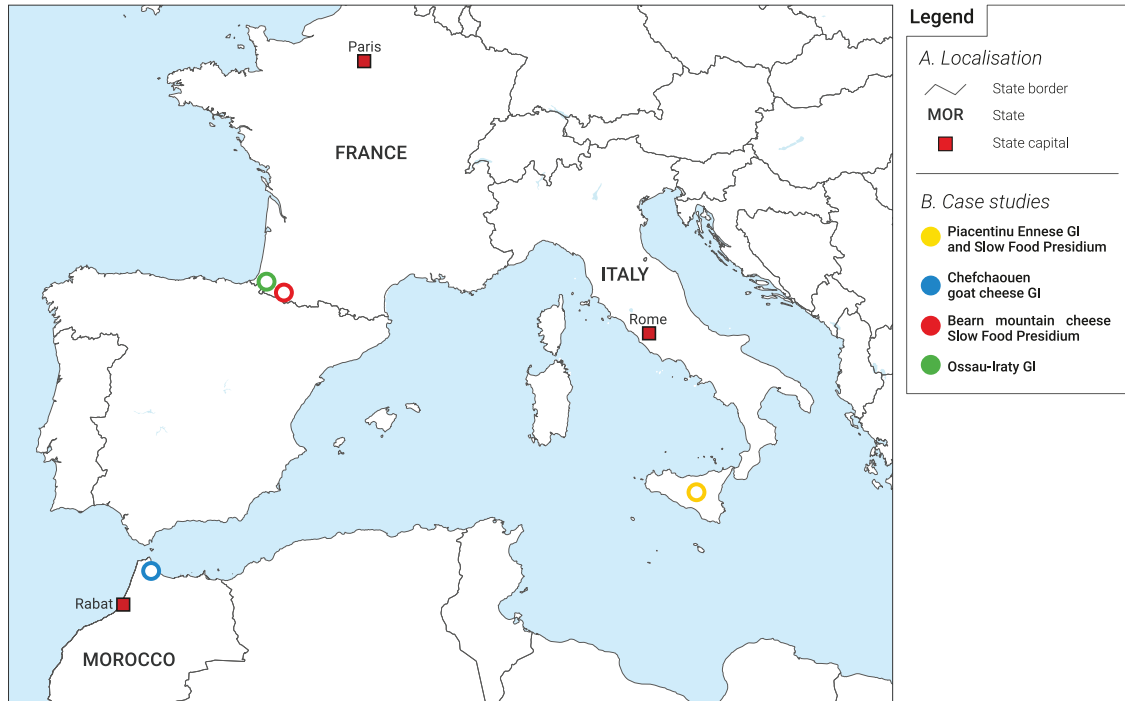
agriculture cannot be competitive (Bowen 2010; Romeo et al. 2015). Food related to a mountain origin has marketing potential and the promotion of origin-based food strategies, mentioning of the word ‘mountain’, can enhance locally produced food status and added-value, and thus positively address the livelihood of mountain communities.

- (iii) For the above-mentioned features of mountain areas, it is particularly important to study the possible controversial effects of OFS on such biodiverse rich, traditional, and marginal production systems. For instance, the profitability of OFS associated with the appealing image of mountains may attract opportunist agro-food firms, easily manipulating the images of mountain-based products. Hence a misuse of mountain OFS could lead to particularly undesired effects on the areas.
- (iv) Mountains are privileged places to observe tensions between tradition and innovation, top-down and bottom-up development initiatives. In fact, mountains are recognised by anthropological and geographical literature as places of ‘resistance’ (Scott 2009), where state institutions and rules are established to a lesser degree, leaving room for local initiatives.
- (v) Finally, the choice of addressing mountain cheeses allows us to explore the link between food and rural landscapes and bringing a geographical dimension to initiatives of sustainable rural systems (Holloway et al. 2006; Marsden and Smith 2005).

The selection of four case studies

After defining the countries and the food product, a more in-depth literature review and regional investigation was conducted on the artisan mountain cheeses manufactured in the selected areas. The final selection of case studies was based on the following criteria that are relevant in the research analysis: the geographic and economic production setting, the size of the supply chain, the motives for initiating the OFS, and the type of OFS. With the aim of diversity of these criteria, four case studies were selected: one GI (Chefchaouen goat cheese, Morocco)¹⁸, one Presidium that partially overlaps with a GI (Béarn mountain cheese, France), one GI that is also a Presidium (Piacentinu Ennese sheep cheese, Italy). The diversity of the selected case studies with reference to these criteria will be explored in the next three chapters.

¹⁸ In an early stage of this research, we assessed the possibility to develop a second Moroccan case study, Samet, i.e. grape syrup. Samet is a grape juice concentrated by evaporation in terracotta or aluminium pots. The most valued Samet is obtained from local varieties of grapes, firstly Taferialte, mainly grown by small farmers in fields between 1 and 5 hectares, in the province of Chefchaouen (Hmimsa 2006). Formerly used as a treatment against stomach-ache, relief for pregnant women and diseases related to cold, its use has recently diversified. Like honey, it can be eaten for breakfast, with bread or pancakes, or it can be used in desserts or fruit salads. In recent times this product has attracted the interest of researchers and NGOs as a potential ‘*produit de terroir*’. In particular, Slow Food has assessed the Samet value chain to establish the launch of a Presidium. Our intention was to follow the creation of a Presidium from stage one, and also being involved in first person into this project, bringing some engagement into this research project.

Map 3: Location of the four case studies

Author and Boada, J.'s elaboration

2.1.3. Data collection

Having outlined the methodological foundations of this research and its rationale, we now move on to critically discuss the research process.

Preparing fieldwork

The active fieldwork phase in each country (in 2013 and 2014), was preceded by a two month preparation phase. During this time, we focused on the selection of the field settings. Research ethics is an important issue that required thorough consideration prior to start the fieldwork. Before starting interviews and participant observation, we explained our role and research aims to informants, asked for their consent for taking part in it, and guaranteed anonymity and confidentiality of the data collected. Thus we chose not to use informants' full names throughout this Thesis, including the names of the specific places and cheesemaking facilities where the research was conducted.

We had to negotiate the access to the appropriate field settings and to participants (Grill 1998; Brewer 2002). For the access to the Slow Food Presidia, the status of former Slow Food staff (2005 to 2010) was a key factor facilitating the negotiation of access to the informants. In 2008, we contributed to the launch of the Béarn mountain cheese Presidium, one of the selected case studies, and, consequently, a well-established personal network in the area allowed us to obtain the access to shepherds' mountain huts for participant observation, a place where visitors are rarely welcome. The Presidia coordinators in France and Italy were identified as the main gatekeepers, and it has been fundamental to gain their

approval to access the field sites. A personal commitment and intention to study cheesemaking practices from the perspective of a participant was an important deciding factor for informants to agree to observation of their daily work.

It is worth further detailing the preparation of the fieldwork in Morocco, as it played a fundamental role in the results of this Thesis and overall PhD experience, and because it took place in an area where University of Catania and CIRAD are not established and do not have research partnerships. Negotiating access to the Chefchaouen GI demanded arduous preparation. Firstly, in partnership with IAV Rabat, after a two-month process mediated by the local Prefecture, we obtained the authorization for research in the rural area from Ministry of Interior and local authorities were hence formally informed of the research. Then, to negotiate access to the field sites, we built on the network of Diversity & Development, a locally based NGO that previously collaborated both with Slow Food and CIRAD. Also in Morocco, local Slow Food leaders were crucial for negotiating the access to the GI initiative.

Moreover, to prepare for the Moroccan fieldwork, intensive training in the Moroccan Arabic dialect was undertaken in Montpellier and then in Chefchaouen. This allowed the author to gain an elementary comprehension of Arabic to set the institutional research environment and perform interviews in the Moroccan countryside (some in basic Arabic, others in French and Spanish, since both languages are widely spoken by educated local people). We identified and collaborated with two translators, but the use of translation was limited to three days of fieldwork.

During fieldwork

Each case study was approached through two or three periods of fieldwork, conducted between December 2013 and August 2015. Two rounds of fieldwork followed a preliminary mission. Afterwards, other field visits were performed in 2016 and 2017, and, among them, the participation in international Slow Food events (Terra Madre-Salone del Gusto 2014 and 2016, and Cheese 2015 and 2017), and an additional trip to Morocco in April 2016 to explore the use of raw milk in cheesemaking facilities of the region, within the framework of the international research program REPASTOL¹⁹. This last mission gave us a broader picture of the regional value chain of cheese and gave us access to informants that were trained by to the research institution organising the mission, i.e. INRA Tanger.

Iteration, e.g. going back and forth from analysis to the field, and from one informant to another, was a key principle underpinning this Thesis. Since we chose to focus on collective initiatives and dynamics, the interaction with project initiators and leaders who can express themselves on behalf of others was often privileged. Some initial key informants were identified through a preliminary regional enquiry based on scientific

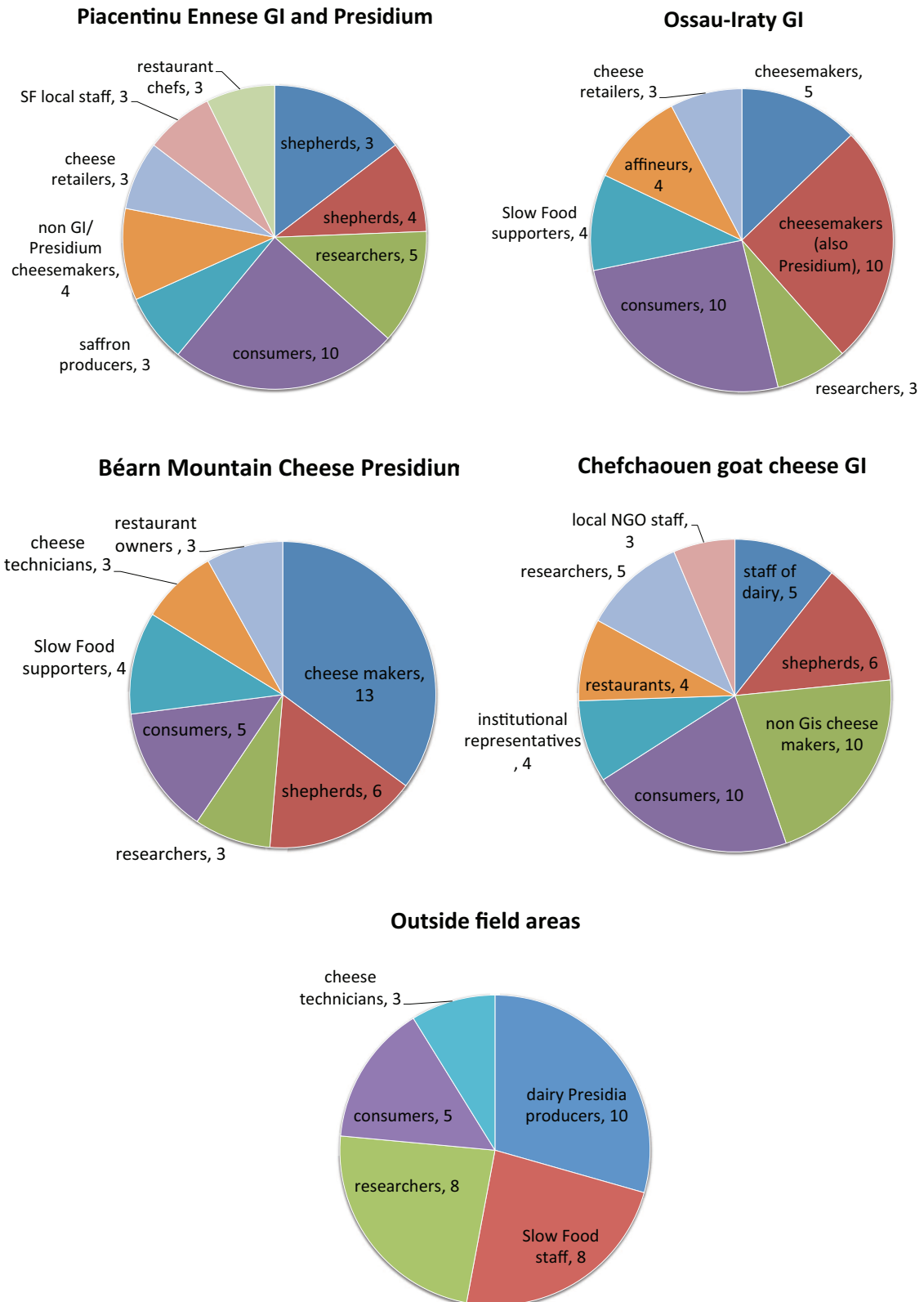
¹⁹ REPASTOL, Raw Milk Cheese Systems: Re-examining Pasteurization, aimed to question pasteurization as the universal solution for ensuring food safety and showing the potential of raw milk cheese production systems. The programme, coordinated by CIRAD and INRA between 2014 and 2017, brought together researchers in social and biotech sciences conducting fieldwork in Europe (France, Italy), in Australia, the United States and in the global South (Brazil, Morocco, India).

literature, national statistics, and interaction with various institutions intervening at different levels of the chain, e.g. regional agricultural services and university rural departments. Apart from this preliminary plan, interlocutors were not chosen in advance by means of statistics or randomly, but they were chosen in a ‘permanent compromise’ between our plans, the availability of informants, and arising opportunities (de Sardan 1995). The choice of other interlocutors was done in large part by a ‘tree’: new tracks proliferate from each interview, directly or indirectly suggested during the interview.

The corpus of data was collected through the combination of the following techniques comprised in the ethnographic enquiry: (i) participant observation, (ii) interviews, (iii) inventories, and (iv) written sources (de Sardan 1995).

- (i) Empirical evidence was collected by means of participant observation conducted over a quite extended period in each case study (4 to 8 weeks). It consisted of observing people and contexts and participating in the everyday life and activities of the subjects. This allowed us to explore the current and past production practices, knowledge transmission, and codification. Particular attention was paid to the actors’ discourses, e.g. their motives and values and socio-political relations. Prolonged interaction with local people is widely recognised in anthropological literature and is meant to produce *in situ* and contextualized knowledge (de Sardan 1995), letting research hypotheses emerge inductively from the field.
- (ii) Semi-structured and informal interviews with producers, consumers, and other local stakeholders (e.g. social movements, institutional representatives, cooks) were also employed and were particularly helpful due to the limited amount of time and the need to detect the informants’ discourse on specific issues. Interviews aimed at collecting and reproducing the ‘actor’s point of view’ and their representations. We tried to recreate natural conversations, with the aim of minimising the artificiality of the interview and to avoid imposing communicative standards on informants. This included leading questions into ordinary daily interaction, despite the difficulties in mastering local language and conventions. We also found it useful to record interviews with actors from institutions and have a more structured questionnaire when the aim was to record institutional discourses, e.g. with GI officers in Morocco. In particular, for each case study, we performed:
 - 10 to 30 semi-structured interviews with local stakeholders (producers, technicians, trainers, public administrators...) to determine the governance ideal type of both Presidia and GIs, and the most relevant challenges they are facing;
 - informal interviews with approximately 10 to 20 producers;
 - informal interviews with approximately 10 origin food consumers;
 - informal interviews with approximately 5 farmers market producers;
 - informal interviews with approximately 5 cooks.

Figure 2.2: Interviews performed in the four case studies



Box. 3: Thematic Axes

The following thematic axes were explored through participant observation, semi-structured, and informal interviews (selected and adapted according to the category of actors and specific contexts).

AXIS 1: Background

- Context. Institutional, geographic, and economic context of the OFS.
- Motivations for initiating or joining the initiative. Why, when and who started the OFS or when the actor decided to join; with which expectations and strategy. Consumers/restaurants chefs' motivation to choose and engage with a cheese recognised by an origin label.
- Estimated results. Estimated results of the OFS initiative, e.g. in terms of communications, volumes, trading systems and sales, relationship with the territory, social recognition, and self-esteem.

AXIS 2: Discourses on cultural biodiversity

- Understanding and value given to biodiversity. Which truth about biodiversity is being represented, how it has been constructed, which elements are used and which are left out, and according to which interests, which identities and practices are desirable and which are stigmatised.

AXIS 3: Practices of cultural biodiversity

- Production practices. Which (cheesemaking) tasks are performed and how producers perform them.
- Learning experiences. When and where cheesemaking practices were learnt, from whom, and how the learning experience took place; the actors' experiences in teaching and training somebody (a family member, newcomer producer, or consumers).
- Changing practices. Where producers found the solutions to problems, when and why they decided to change practices. Memory about the products, and which attributes changed.

- (iii) As a complementary method to collect data, we constructed inventories, collecting 'intensive quantitative data' in a limited number of cases (de Sardan 1995). We systematically collected background information on the interviewees (e.g. location of their farm, age, size of the farms, family composition) and more importantly we recorded, verbally and visually, the production practices in detail (e.g. tools, quantities of milk, temperatures, times of cheesemaking procedures).
- (iv) Written sources also helped to design and develop the field analysis. Prior to the fieldwork, we explored scientific literature (from disciplines such as anthropology, history, geography, economics) and grey literature (reports from agricultural institutions, NGOs) on the areas of study, in order to familiarise ourselves with the case studies and define working hypotheses. During fieldwork, we also collected grey literature (leaflets, farmers' websites, local press, reports), as we were getting close to informants and were able to access more relevant literature. The systematic collection of such written sources was a fundamental part of the data used for the analysis of institutions and local actors' discourses (further developed in Chapter 3).

2.2.4. Data analysis

The collection of mainly ethnographic information on multiple sites (three geographic areas) is meant to shape a reflection on each case study and, then, to put it into a broader perspective by taking into account how local experiences are connected with national/global processes, though an interpretative approach (Marcus 1995; Hine 2007). Case comparison is thus used to reveal the peculiarities and specificities of each experience and allow for the development of an explanatory model on the cross-cultural confrontation of ethnographic findings.

In accordance to the above-mentioned iteration principle, the corpus of data has been under analysis by going back and forth between problem statement, data interpretation, and results: the set of problems addressed by this study has been under constant redefinition alongside the process of collection of empirical evidence and the related daily interpretation.

The data production process based on mixed methods, as described above, allowed the creation of the corpus of data. In the case study method, ‘triangulation’ of data and sources is recognised as the key factor to validate research based on case studies, by increasing the reliability of results (Yin 1994; Farquhar and Michels 2016). However, the combination of different data sources and methods used in this study is more than a validation of data through cross verification from different sources, as in ‘triangulation’. It is more of a ‘complex triangulation’, where data collected from different informants or sources contrast, according to their relation to the heterogeneous problem being treated (de Sardan 1995). The ethnographic truth or sense is created *in* the difference in views and we considered that using ‘complex triangulation’ allowed learning and mastering different parts of the reality not accessible with one single tool.

Since most data are produced through personal interactions with others, the researcher subjectivity can be considered a creative factor of data. Whilst it is impossible to eliminate bias, we tried to minimize it. The concept of reflexivity is central in the work of anthropologists, as is widely demonstrated in the literature (Cherry et al. 2011; Clifford and Marcus 1986; Beck et al. 1994). Anthropologists pay attention to the implications of the researcher’s own opinions, values and preconceptions as elements affecting their research: these implications need to be analysed during the time of immersion of the researcher in the studied social setting. Concerning this research, gender issues were taken into consideration, in particular in Morocco, where it was a key factor in getting (or not getting) access to informants and their views. Moreover, direct involvement with Slow Food in past years needed to be analysed throughout this study, considering the researcher’s voice (as a Slow Food insider, and then as a researcher) as one of the voices of the actors to be distinguished from the others.

In particular, we were aware of the risk of ‘*enclichage*’ (de Sardan 1995) during fieldwork, i.e. being uncritically absorbed into a ‘*clique*’, social group or network of actors. In fact, the insertion of the researcher in a society is never done with society as a whole, but through specific groups. We became part of some networks and not others, getting to know the point of view of certain groups and being possibly excluded by the groups that were against the ‘*clique*’. This risk was particularly evident in Béarn, where rivalries between

shepherds and their associations are strong and our gatekeeper was the Presidium coordinator. For instance, we gained access to a couple of dissenter shepherds because they wanted to balance the idea we received about the Presidium initiative. Another shepherd we visited towards the end of fieldwork, working in a particularly remote mountain hut, was able to guess and mention the list of major informants of this study, including the dissenters. In Morocco, where institutional settings greatly determine the content and freedom of human relationships, we generally preferred to move outside the networks of contacts of the INRA research centre and outside the ANOC association leading the GI initiative. We gained personal access, rather than institutional access to the Ajbane Chefchaouen, the dairy which manufactures the GI cheese. We consider that it was an important factor in allowing the dairy staff to share information and data, including sensitive data about their sales and difficulties.

The data produced in the field were selectively mobilised and ‘edited’, that is to say selected, cut, glued together, with a demonstrative and narrative function (de Sardan 1995). As a constraint, we mention the frequent need of translating sources (books, leaflets or informant discourses) from different languages (Italian, French, Spanish, and Arabic) and summarising them. To reduce the personal bias, interpretations are not confused with the remarks of informants and the observations. In our notebook, we clearly delineated the informants’ voice from our summaries or notes, specifying who said what (language identification principle) (Spradley 1980).

2.2. Overview of the case studies

This section will introduce and situate the case studies. The first part will outline the economic and institutional context of the initiation and development of OFS (both GI system and Slow Food Presidia), supporting the above-mentioned justification of the case study selection. In particular, the key elements of the GI system legal framework, i.e. definition of GI, definition of right conferred, registration and controls, in the target countries (Chabrol and Marie Vivien 2014), and their economic impact will be described. The following part of the section will present the four selected case studies as for their geographical location, historical origin of the product and of the OFS, product characteristics, and producers involved into the OFS, limiting repetitions with information that will be further developed in the following chapters.

2.2.1. National contexts for the quality food initiatives

*Italy*²⁰

On a national level, Italy boasts the highest number of PDO cheeses (48) and Slow Food Presidia on cheeses (54) (Ministero Politiche Agricole e Forestali; Slow Food Foundation 2018), within a general trend of development of OFS in number and economic relevance.

²⁰ This section mobilises an article written in a preliminary phase of this research, Mariani, M., Peri, I., and Carrà, G. (2015) Quality Schemes and Pastoralism in Sicily: Relic from the Past or Ace in the Hole?. The article was published in *Calitatea* 16 and is annexed (Appendix 2).

Indeed, on one hand, Italy has the highest number of GIs in the EU, with a higher concentration of registered products in the Northern regions. The economic relevance of the sector is evident: GI products cover more than 54% of agricultural land, employ 250,000 people, and are worth 13.8 billion euros (+2.6% per year), accounting for 10% of the food industry, and a yearly + 10% trend in exports, equal to 21% of food exports (Qualivita 2017, data 2015). In Italy, the 2006 regulation mirrors the 2006 EU regulation on GIs. The acknowledged goal of such policy tool is transparency towards consumers coupled to an interest in diversification of EU agriculture, to be implemented especially in marginal areas and to prevent rural exodus.

Table 2.1: GI institutional frame in Italy

	Definition
<i>GI</i>	GI is a sign used on agri-food products having a specific geographical origin and whose qualities and/or reputation are attributable to that origin. Geographical indications are often but not exclusively place names. <ul style="list-style-type: none"> • PDO • PGI
<i>Applicant/users</i>	Applications are filed by a group (promotion committee, association, etc.) working with the products for which the name is to be registered. Generally, protection, promotion and communication activities are carried out by Protection Consortia that are voluntary, non-profit associations and are promoted by the majority of the operators involved. Users are the association of producers within the defined geographic area.
<i>Right conferred</i>	Unlimited, collective, and exclusive right to use the name
<i>Registration</i>	Applications are submitted to the regional body (Regione) and the Ministry of Agricultural, Food and Forestry Policies. A national objection procedure assesses possible objections; if the decision is favourable, the application is submitted to the European Commission, which, if conditions met, will publish the approved product specification within six months.
<i>Controls</i>	1st level: the Authority recognised by the European Commission is the Ministry of Agricultural, Food and Forestry Policies. 2nd level: public or private control bodies operating as certification bodies authorised by the Ministry of Agricultural, Food and Forestry Policies and the National Accreditation Body (Accredia). 3rd level: self-control by producers; recognised Consortia can use supervisory agents recognised by the Ministry of Agricultural, Food and Forestry Policies.
<i>Regulation</i>	EU Reg. 1151/2012 – Quality Package Decreto Ministeriale No 5442-2007

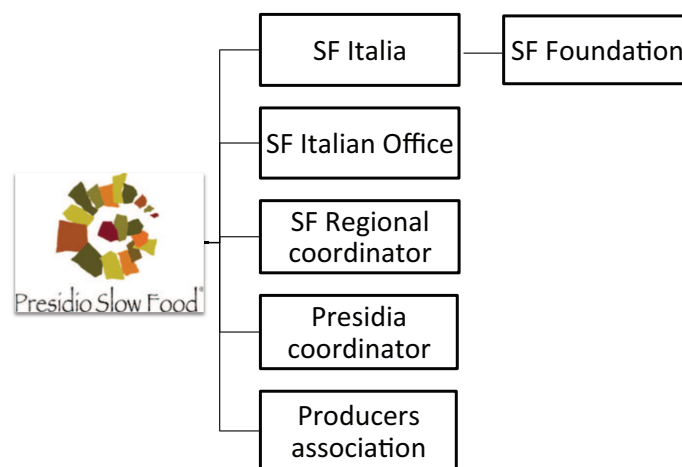
Source: compiled by the author, data from Qualivita 2017

On the other hand, there are 250 Italian Slow Food Presidia, significantly outweighing that of other countries, and having a complex multilevel management established only in Italy, where the project was first launched and has reached the widest development. Producers of each Presidium are united in an association (either a cooperative or consortium),

coordinated by a person—not necessarily a producer—chosen by a producers’ group, and must sign the Presidium product specifications. Regionally, there is a member of the SF association who is nominated by the regional Slow Food committee and responsible for the communications with the regional Presidia in tandem with each Presidia local SF coordinator (usually a member of the Slow Food local chapter, the Convivium). On a national level, Italian Presidia are managed by Slow Food Italia staff, technically supported by the Slow Food Foundation for biodiversity, based in Bra at the Slow Food headquarters.

In 2008, Slow Food Italy registered the ‘Presidi Slow Food’ brand, created a logo and a set of regulations that producers have to sign to be authorised to use the logo. Slow Food Italy is the sole owner of the ‘Presidi Slow Food’ brand. All managing levels, and in particular the producers’ coordinator, are in charge of the control of the production standards and activities, and the list of producers authorised to use the logo is made accessible on the website www.slowfoodfoundation.org. However, as stated in the Italian Presidia regulation, ‘Slow Food reserves the discretionary and unquestionable authority to revoke its permission to use the brand or to modify the means of granting it, as well as to ask the Presidia or the individual producers for solid evidence regarding their respect for the established rules. It also reserves the right to demand compensation for all damages, including to its image, caused by the lack of observance of the regulations.’ (SFFB 2018)

Figure 2.3: The multilevel management of Italian Presidia



Source: author’s creation

On a regional level, livestock farming and dairy production is an important economic sector in Sicily and has been described as a particularly complex and articulated system (Mariani et al. 2015; Mannia 2013). In 2010, Sicily was the second region in Italy for number of sheep and the fourth in terms of sheep cheese production (Mannia 2013; Lactimed 2013). Over the last few years, the dairy chain has faced a significant restructuring process: the number of farms has fallen (-13% for dairy sheep), while sheep number has risen slightly (+3.4%) with a subsequent drop in the number of small farms and the concentration of activity in middle-sized farms (Mariani et al. 2015; Lactimed 2013; Calogero 2013). Ninety percent of small and micro businesses (e.g. farms, cheese

producers, ripening facilities) are family-run. Then, a few large companies transform 70% of the milk produced in the island (e.g. Lactalis group, Zappalà), but only 20% of goat and sheep milk. Then, micro-businesses operate in an informal network to market dairy products produced in ill-adapted facilities (Lactimed 2013).

Sicily boasts a considerable variety of cheeses still produced today using traditional working practices and tools and several of them are recognised as PDO and Slow Food Presidia (Table 2.2). A competitive productive sector of small businesses, managed by young motivated and educated entrepreneurs, manufactures and markets origin cheeses outside regional borders. However, alongside this organised and efficient sector, many producers engaged in OFS work under challenging conditions, in terms of meeting the required hygiene and health conditions and asserting themselves in the marketplace.

Table 2.2: Livestock and dairy PDOs and Slow Food (SF) Presidia in Sicily

PDO / SF PRESIDIA	DESCRIPTION
Pecorino Siciliano <i>PDO</i>	Hard cheese made with raw sheep's milk in the whole of Sicily, sometimes flavoured with black pepper.
Piacentino Ennese <i>PDO & SF Presidium</i>	Pressed cheese made from raw sheep's milk and flavoured with saffron and black pepper in the center of Sicily.
Valle del Belice Vastedda <i>PDO & SF Presidium</i>	Stretched-curd cheese made from sheep's milk in the Eastern part of Sicily.
Ragusano <i>PDO & SF Presidium</i>	Stretched-curd cheese made from cow's milk. The SF Presidium applies only to cheese manufactured with milk from the Modicana breed.
Nebrodi Provola <i>SF Presidium</i>	Stretched-curd cheese made from cow's milk, sometimes with small additions of goat's or sheep's milk, on the Nebrodi mountains.
Madonie Provola <i>SF Presidium</i>	Pear-shaped stretched-curd cheese made from cow's milk on the Madonie. A small amount of sheep's or goat's milk is added to make aged cheese.
Maiorchino <i>SF Presidium</i>	Hard cheese made mostly from whole sheep's milk, with the addition of a little goat's or cow's milk in the Peloritani and Nebrodi mountains.
Cinisara cow <i>SF Presidium</i>	Breed from the area of Palermo. A typical stretched-curd cheese is made from its milk.
Girgentana goat <i>SF Presidium</i>	White coat breed with long, spiraling horns. Its milk has an excellent balance between fat and protein.
Modicana cow <i>SF Presidium</i>	Good triple-purpose cattle breed. Its raw milk is used to make Caciocavallo, Ragusano and Provola cheeses.

Source: Mariani et al. 2015

France

The relevance of the GI system in France is widely acknowledged by researchers, policy makers, and consumers. In France, the INAO reform and 2006 regulation currently frame GIs. The main goal of the French GI policy is strengthening the origin product value chains to shape and root a diverse rural landscape in the national territory (Isla and Wallet 2010). In 2016, PDO (AOP in French) products represented nearly 20 billion euros in sales

and 2.1 billion euros came from dairy products (50 dairy products, of which 45 cheeses). This is equal to 10.5% of cheese production traded in France (INAO/CNAOL 2016). The French PDO cheese value chain comprises 19,343 milk producers, 1,281 onfarm producers, and 423 processing businesses (INAO/CNAOL 2016).

Table 2.3. GI institutional framework in France

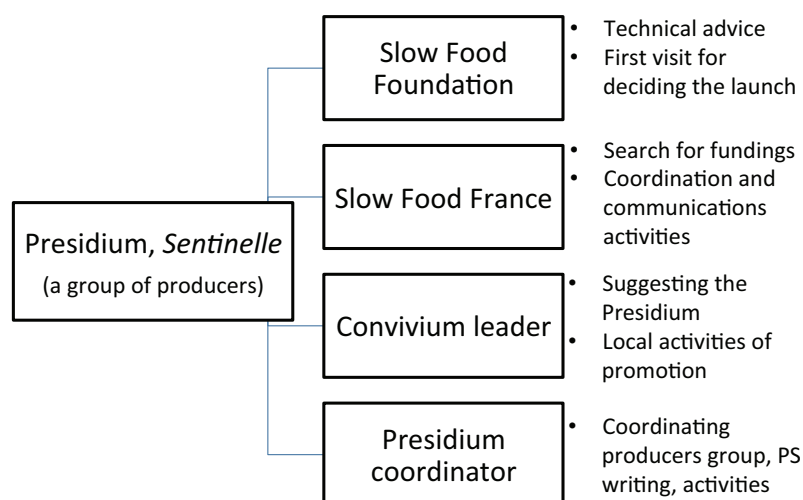
Definition	
<i>GI</i>	GI is a label used on agri-food products having a specific geographical origin and whose qualities and/or reputation are attributable to that origin. Geographical indications are often but not exclusively place names. <ul style="list-style-type: none"> • PDO • PGI
<i>Applicant/users</i>	The application is submitted by ODGs (French acronym for Defense and Management Organizations, Organismes de défense et de gestion) bringing together all the operators (producers and processors) wishing to use the registered name. Users are the association of producers within the defined geographic area.
<i>Right conferred</i>	Unlimited, collective, and exclusive right to use the name
<i>Registration</i>	The application is to be submitted by a ODG to the local services of the National Institute of Origin and Quality (INAO). It is examined by an Enquiry Commission, specific to each category of products, and a National Committee. If approved, the Ministry of Agriculture transfers the application to the EU Commission for final registration.
<i>Controls</i>	The Authorities designated to control are the General Directorate for Competition, Consumer Affairs and Fraud Control (DGCCRF) and the INAO that operates under the control of the Ministry of Agriculture, Agri-Food and Forestry. INAO sets the control principles and supervises the entire system. The control of the conformity of GI products with their specifications is delegated to a third party inspection body, which is a private certification body. The control of each GI is carried out on the basis of a control plan, unique for each GI, drawn up by the inspection body after consulting the ODG, and approved by the INAO. The controls include self-controls carried out by the operators, internal controls carried out by the ODGs, external controls carried out by control bodies.
<i>Regulation</i>	EU Reg. 1151/2012 – Quality Package French Ordinance No 2006-1547

Source: compiled by the author, data from INAO (2018)

Regarding the development of Slow Food Presidia in France, the Slow Food movement has raised support in France since its creation at the end of the 80s. A national association, Slow Food France, has been coordinating the activities of Slow Food supporters in France (up to 2000) from 2004 to 2014, with the aim of increasing political and cultural autonomy of the French movement, despite its relatively limited development compared to countries such as nearby Switzerland or the US.

A relevant part of the projects in France relate to the defence of gastronomic biodiversity, complementing or competing with the diverse and long lasting activities promoted by regional and local public institutions (e.g. *Sites Remarquables du Goût* and the Inventories of French Culinary Heritage) (Bérard et al. 2005). The first Presidia were launched in 2004 (Rancio sec wine from Roussillon and Noir de Bigorre pig) and, as for the Presidia created later, they were supported by public (local institutions or EU programs) or private partners who do not have a direct relation with the product (Chabrol 2005). In the national organisation of the movement, local chapters of supporters (Convivia) have a role in suggesting Presidia project ideas to the Slow Food Foundation and, once the project is approved and launched, to coordinate local and international activities meant to promote the Presidium to consumers and media: they are ‘ambassadors for the product’ (Chabrol 2005). In the case of the Béarn mountain cheese Presidium, the Slow Food Béarn local chapter suggested the launch and later supported the development of the initiative.

Figure 2.4: The management of French Presidia



Source: author's creation

Over the 21 French Presidia, 5 of them on dairy products or breeds used for dairy purposes: apart the Béarn mountain cheeses, there is another mountain cheese in the Basque Pyrenees, the dry-ripened Pélardon, the Auvergne cheeses which use milk from the Salers breed of cow and the Rove goat brousse. These French Presidia have a particularly close relationship with the GI system. For example, the Slow Food Presidium has anticipated and accompanied the request of GI for the Rove goat brousse, recently obtained in 2018, to protect that cheese from industrial imitations using cow milk instead of the milk of the indigenous goat breed. In the case of Pélardon, a GI on lactic goat cheese, which prescribes an 11 day minimum ripening, Slow Food launched the dry-ripened Pélardon Presidium to rediscover the ancient local consumption habit of drying cheese until it becomes hard and pungent, far from the standards of the modern market. In contrast, the Presidium launched in Auvergne surpasses the mosaic of regional cheese GIs (i.e. Cantal, St Nectaire, and Salers) to protect the rustic and threatened Salers breed: the Presidium focuses on the traditional breeding system instead of on a cheese.

Morocco

In the last decade, OFS have become an institutional and societal concern in Morocco. Many local products are commonly called by names that refer to their cultural and/or geographical origin, e.g. the saffron of Taliouine or the figs of Tainoute, and are appreciated in the local market. However, as in other African countries, the distance between urban and rural areas is increasing, and producers and consumers are losing interpersonal relationships and the related trust (Bricas 2006). To prevent misuse and fulfil the demand of a niche of consumers seeking to (re)discover their roots and tradition through their food practices, labels and certification schemes based on the origin are increasingly formally recognising local food names under the government's strategic guidance.

The second pillar of the Green Morocco Plan provides the institutional framework for the national development of OFS. It considers valuing emblematic local products as a way to preserve cultural and environmental heritage while generating local economic activities, more importantly in marginalised areas (e.g. desert and mountain areas), where it is impossible to develop intensively productive agriculture. Several labelling initiatives for '*produits de terroir*' (e.g. local olive oils), and primarily the GI system, have been promoted after the promulgation of the Law 25-06 on the 'Distinctive signs of origin and quality of agricultural products and foodstuffs, and agricultural and fishery products' in May 2008. This law, which follows the French-European model, defines three quality signs: the geographical indication (GI), the appellation of origin (AO), and the agricultural label (LA).

Table 2.4: GI institutional framework in Morocco

	Definition
<i>GI</i>	For agri-food products: indication used to identify a product as originating in a territory or region, in cases where a particular quality, reputation or other characteristic of the product can be attributed primarily to that geographical origin. <ul style="list-style-type: none"> • the appellation of origin (AO) • the geographical indication (GI)
<i>Applicant/users</i>	The application is submitted by producers and / or processors established in association, cooperative or any other professional group, or by local authorities or public institutions. The GI is available to all operators respecting the specifications.
<i>Right conferred</i>	Unlimited, collective, and exclusive right to use the name
<i>Registration</i>	The application, including the proof of origin, PS and control plan, is submitted to the Office of Development of products, Labelling Division (DL) which examines if the application is admissible and then transfers it to the National Commission of Origin and Quality Signs, which proceeds to the detailed examination of the file and of possible oppositions, and may ask for additional documents of support. After the acceptance of the National Commission, the Ministry of Agriculture grants the requested designation.
<i>Controls</i>	<ol style="list-style-type: none"> 1. self-control (by each operator keeping up-to-date records) 2. internal control (among operators themselves)

3. a third party (the certification body)
 The certification bodies are public or private institutions approved by the Ministry of Agriculture. The Ministry of Agriculture and Maritime Fishing is also entitled to carry out certifications, particularly in cases of conflict of interest or disagreement between a producer/certifier.

Law 25-06

Regulation

Source: compiled by the author, data from Moroccan Labelling Division and FAO (2010)

Before May 2018, 48 GIs were registered, but comprehensive scientific literature or official surveys on the development of GIs and their economic results are still not available. Only two GIs are on dairy products (Chefchaouen Goat Cheese and Sahara Camel Milk) and both are meant exclusively for the national market. In particular, the Chefchaouen goat cheese is considered a pioneer '*produit de terroir*' in mountainous Northern Morocco, where pastoralism is particularly relevant, with a goat population of 733,000 animals, equal to 45% of ruminants located in the region and 15% of goats in the whole country (Zantar et al. 2013). In such an economically marginal area, processing fresh cheese is recognised as a (relatively simple) strategy to add value to agricultural activities (Royaume du Maroc 2015).

2.2.2. Case study 1: Piacentinu Ennese

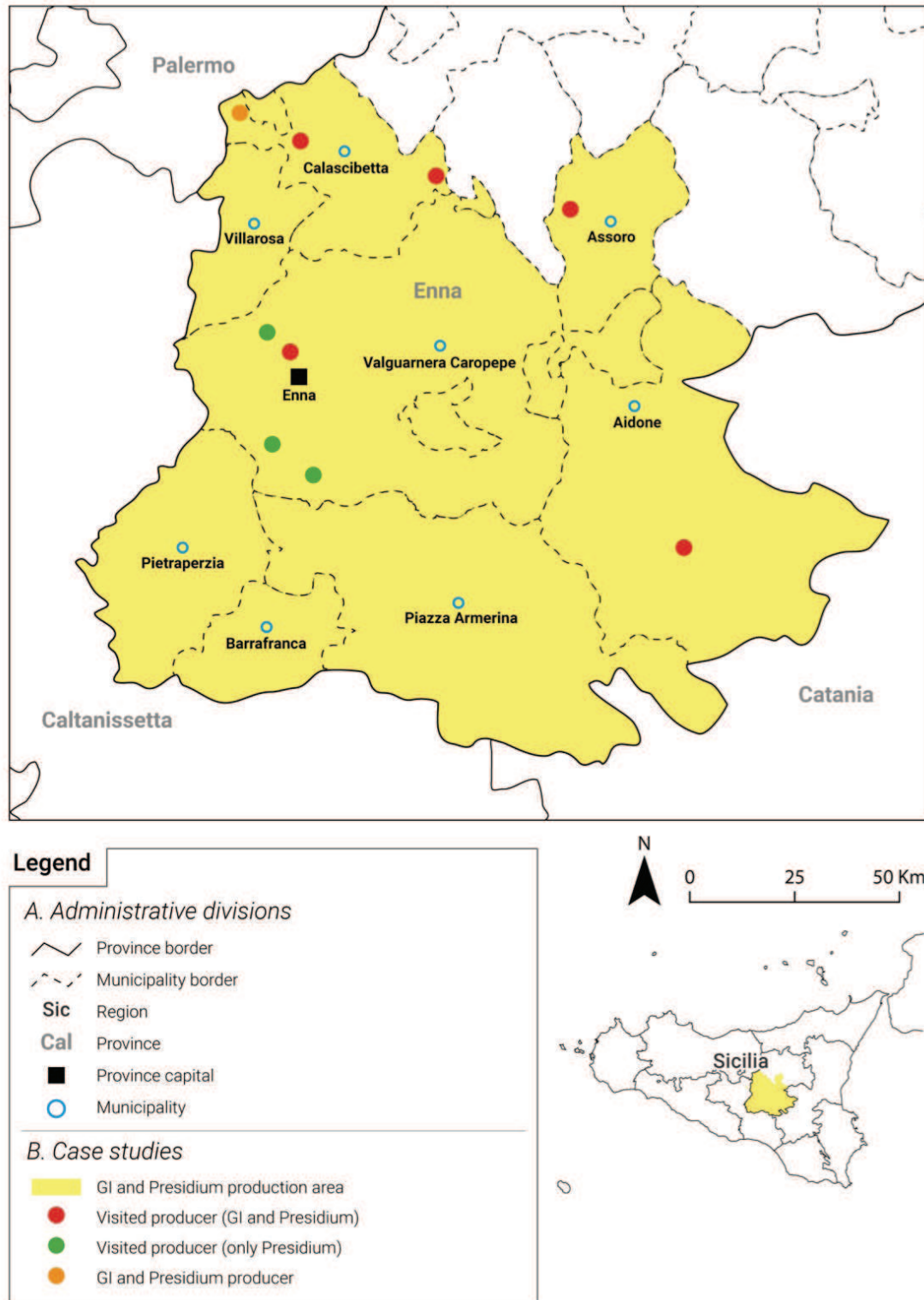
The Italian case study is Piacentinu Ennese, located in Sicily. It was recognised as the 1000th PDO in 2011 and as a Slow Food Presidium in 2013.

Area of production and origins

The production and maturing of Piacentinu Ennese is situated within the area of 9 villages: Aidone, Assoro, Barrafranca, Calascibetta, Enna, Piazza Armerina, Pietraperzia, Valguarnera, Villarosa, i.e. the southern Enna province. The area of production is in the centre of Sicily and is mountainous (Erei Mountains and the Dittaino Valley), with grazing land between 400 and 800 meters above sea level. The city of Enna is the highest Italian provincial capital, situated at 931 m above sea level. The area is characterised by rainy springs and a large variety of Mediterranean plants (e.g. *Sulla coronaria*, *Vicia sativa*, rosemary, and wild fennel) (Carpino et al. 2010). It is one of the areas with the highest number of sheep farms in the region (Lactimed 2013; Calogero 2013).

Legends and historical sources on the origin of the cheese are rich. The origin of the term 'Piacentinu' is unclear (Sangiorgi et al. 2004). Some claim that the origin of the name comes from Piacenza (city in the North of Italy from where the recipe allegedly arrived in Sicily, carried by a community of immigrants). Others contend that the cheese is called 'Piangentinu', 'weeping', because of the droplets of fat produced by the cheese. Others think that the name comes from the Sicilian word 'Piacentinu', 'which is attractive', 'which people love'. The tradition of adding saffron goes back to the time of Roger the Norman (Conte Ruggero d'Altavilla), in the eleventh century (Interlandi 2011). Believing in anti-depressive properties of the spice, Roger the Norman had ordered his cheese makers to put it in the cheese which was to be consumed by his wife, great amateur of cheeses, but unfortunate woman.

Map 4: Location of the Piacentinu Ennese case study



Author, Boada, J., and Monaco, C.'s elaboration



Picture 2.1: Sicilian breeds: Comisana sheep and Girgentana goat (Enna)

From October to May, when the dry season arrives, pastures are rich in *Sulla coronaria*, *Vicia*, and aromatic herbs.

Photo credit: Mariani, M.



Picture 2.2: Shepherd (Enna)

Pastoralism and wheat cultivation have alternated in the inner Enna province for millenia. Whereas cereal farming has undertaken an intensification process in the whole island, pastoralism has not undertaken major changes in its remote areas.

Photo credit: Mariani, M.

Other suggest that it was during the Arab colonisation in the IX century that saffron was first introduced by Berbers for gastronomic purposes (Sangiorgi et al. 2004).

The production techniques of Piacentino are described exhaustively in Carmelo Campisi's (1933) book *Pecore e Pecorino di Sicilia*. As early as 1500, the historian Gallo, in *Le venti giornate dell'agricoltura e dei piaceri della villa*, refers to the addition of saffron to give more flavour and colour to cheese (obviously sheep) (Sangiorgi et al. 2004).

The cheese and cheesemaking techniques

Piacentino is a hard sheep's cheese with a compact paste, half-cooked, that is produced with the addition of saffron and black peppercorns (a common ingredient in Sicilian *pecorini*, especially in the eastern part of the island). It has a cylindrical shape, yellow-brown crust, with a rough surface because it takes its shape from the basket in which it is formed, and a weight varying from 3.5 to 5.5 kg. Its main characteristic is the striking bright yellow colour, due to the addition of saffron (Carpino et al. 2010). As interviewed producers recall, 'it is yellow as the sun, gold, and wheat', typical of this southern region (Author's interview 2015).

The cheese is produced with the raw whole milk of Sicilian sheep breeds: Comisana, Valle del Belice and Pinzirita. Barbaresca Siciliana, the most endangered of Sicilian sheep breeds, is not included. Although Sicilian breeds differ greatly in terms of milk production quantity and quality, this difference is not acknowledged in the Piacentinu Ennese specifications. Valle del Belice and Comisana have undertaken genetic development programs aiming at increasing their milk productivity, and hence are highly predominant (Comisana 60%) whereas Pinzirita is very rare (Tolone et al. 2012). As a result of genetic development programs, shepherds observed an increase of the milk production, but also the reduction of milk quality. As a shepherd explained us:

Our Comisana sheep has changed, pumped by research programs to be more productive... but also more fragile. Now that we use milking machines with Comisana sheep, mastitis is highly increasing and we have to discard milk. (Author's interview 2014)

Following a territorial approach and scientific evidence suggesting that local saffron has peculiar organoleptic features that can be detected in the cheese as well, saffron used in Piacentinu Ennese has to be grown locally according to the specifications (Interlandi 2011). In several cases, cheesemakers themselves devote some farming activity to growing the saffron to be added to their cheese. In other cases, a recently created cooperative (Oro Giallo di Sicilia) produces and supplies cheesemakers with local saffron.

Comprehensive research carried out by the Sicilian cheese research centre, CoRFiLaC (Italian acronym for Consorzio Ricerca Filiera Lattiero-Casaria), supported the demand for exemptions from European regulations on health and safety²¹ and Piacentino Ennese is

²¹ European Regulations (EC) 852/2004 (on the hygiene of foodstuffs) and No 853/2004 (hygiene of animal products) frame the main health and hygiene standards.

still produced using traditional cheesemaking tools (Carpino et al. 2010; Tuminello et al. 2010; Horne et al. 2005; Fallico et al. 2006).



Picture 2.3, 2.4, 2.5, 2.6: Production of Piacentinu Ennese (Calascibetta, Enna)

Local saffron is added to milk before coagulation; curd is stirred with a wooden stick (*rotula*), in a wooden vat (*tina*); the curd is put in rush baskets (*fascidda*) that provide cheese with a recognisable surface; cheese maturing is done on wooden boards.

All photos credit: Mariani, M.

The main cheesemaking steps are the following: The milk, with the addition of saffron, coagulates at 35 degrees in a wooden vat (*tina*), after the addition of lamb paste rennet. The curd is then cut with a wooden stick (*rotula*) and washed with hot water. Then, it is transferred to wicker baskets (*fascidda*), which leave a particular rifling surface. At this time, the curd is studded with whole black peppercorns, which have been soaking in hot water since the evening before. The baskets with the cheeses are thus placed in a wooden vat and covered with hot whey. After being dry salted and aged for around 60 days, Piacentinu Ennese develops a delicate fragrance and aromatic flavour, with a gentle sweetness from the saffron (Carpino et al. 2010). Saffron and a careful use of salt make Piacentinu Ennese one of Sicily's least 'aggressive' cheeses, with a more 'European style'.

Actors involved in the OFS

Piacentinu Ennese is a small and quality production: 10 cheesemakers producing 35 tonnes per year in 2015. Since 2001, producers are organised in the Consorzio di Tutela in order to protect and promote this cheese, created under the impetus of the Sicilian Breeders Association and the Regional Province of Enna (OESAAS 2007). The Piacentinu Ennese specifications are under revision to provide the Consorzio with a more functional structure. In 2014, when this research started, only 6 producers belonged to the PDO and 3 were Presidia producers. Collaboration among producers within the Consorzio for establishing a development plan and marketing activities were limited. The amount of cheese manufactured and labelled as Piacentinu Ennese was not enough to reach national and international markets. Therefore, a main goal of the Consorzio was to increase the volume produced by training and including new farmers. In 2018, 9 cheesemakers belong to the PDO, all of them also involved in the Presidium, and another producer is involved in the Presidium but is not member of the Consorzio. Moreover, an association of saffron producers, Oro Giallo, was created at the same time of the PDO to develop the local production of saffron. Members are young farmers or people who recently began farming that started a business that demands little land and capital, and has a local market organised around the PDO.

Table 2.5: Piacentinu Ennese PDO and Presidium operators

Type of operator	Presidia	PDO	Tot
<i>On-farm cheesemakers</i>	7	6	10
<i>Dairies</i>	3		

Source: Consorzio Piacentinu Ennese (2018)

2.2.3. Case study 2: Ossau-Iraty

The second case study is located in France, the Ossau-Iraty sheep cheese, recognised as a PDO in 1981.

Area of production and origins

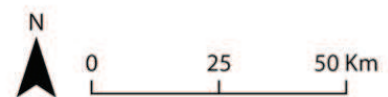
The area of production of the Ossau-Iraty GI is located in the French Pyrenees (Pyrénées-Atlantiques department), over two geographical and cultural regions: Béarn and Pays Basque. The history of pastoralism in the region has ancient roots dating back to the Neolithic era. In the 1st century the Latin Martial mentioned the sale of sheep cheese from the Pyrenees mountains in Toulouse markets, whereas the Greek Strabon explained the process of making such cheeses (Courouge 2002). In fact, local environmental conditions are particularly favourable to pastoralism and the habit of making big cheeses able to stock milk for long time: high rainfalls, isolated valleys, the necessary transhumance to the mountain pastures.

Pyrénées-Atlantiques are still today the first French region in on-farm cheese volume (Ossau-Iraty website). The department Pyrénées-Atlantiques has 14,500 ha of pastoral land, and 2/3 of the sheep of the departement transhume (Courouge 2002). However, in the early 20th century, the farmstead production system was taken over by dairies collecting the milk from several suppliers. In 1904, Roquefort dairies from the Aveyron region were the first dairies in the Pyrenees area to transform local ewe milk into cheese that was then manufactured, matured, and labelled as the renowned Roquefort GI (Millet 2017). The establishment of Roquefort in Pyrénées-Atlantiques stimulated a significant increase in sheep milk production and transformed farming activities (from farmstead cheese production to milk delivery), simplified the daily tasks of farmers, in particular in the Basque Country and Bas-Béarn. On one hand, milk productivity was increased by improving genetic selection and health of the herds, and optimising the feeding and use of pastures. On the other hand, economies of scale were reached by grouping farms and establishing collective or cooperative work (Millet 2017). A restructuring process was launched in the 1970s, when local production of young cheeses under the Roquefort system fell sharply and Roquefort industrial producers unexpectedly left the region. As for Corsican Brocciu cheese (de Sainte Marie et al. 1995), the triggering motivation for setting up a GI for the local traditional sheep cheese was to quickly convert local milk from the production of Roquefort to a local cheese to be sold with an added value. Thus, the starting point of this GI was closely linked to the business of three dairy industrial groups and their interests play a central role in the definition of the GI initiative.

The cheese and cheesemaking techniques

Ossau-Iraty is a 100% ewe milk cheese. This GI cheese includes a wide variety of cheese making styles: cheese produced in the Basque Country is very different from the one produced in Béarn in terms of size, shape, colour of the rind, texture, and maturing. In Béarn, cheese is 5kg and softer, with a reddish rind; in the Basque Country, cheese is harder and smaller, with a grey rind. Also the historical production system varies between the two regions: in Béarn, on-farm production is predominant, following summer transhumance to take advantage of abundant mountain pastures, whereas in the Basque Country the predominant production system is stationary plain production and milk delivery, with mountain cheese production as a non-systematic domestic activity. In Béarn, cheese was manufactured by heating milk twice, whereas in the Basque Country only once, to higher temperature, to further dry the cheese.

Map 5: Location of the Ossau-Iraty case study



Author and Boada, J.'s elaboration



Picture 2.7: Basco-béarnais sheep (Ossau Valley, Béarn)
Sheep and shepherds are getting ready for milking in mountain pastures by deviding the milking goats from the 'dry' ones.

Photo credit: Mariani, M.



Picture 2.8: Onfarm Ossau-Iraty (Aspe Valley, Béarn)
These cheeses are produced in the mountain season and matured in the natural cave beside the mountain hut. The onfarm logo is recognisable on the cheese surface.

Photo credit: Mariani, M.

The GI allows the use of milk exclusively from local sheep (Manech tête rousse, Manech tête noire, Basco-béarnais). In practice, the two Manech are located in the Basque Country whereas the Basco-béarnais sheep is farmed in Béarn, reflecting natural and cultural factors. Whereas Manech tête rousse is highly productive, Manech tête noire is better adapted to mountains. However, since the practice of transhumance is no longer frequent in the Basque Country, Manech tête noire is nowadays farmed in very limited numbers. The preservation of the Manech tête noir is crucial to projects, such as the Buru Belza association and the Slow Food Presidium of Basque Pyrenees mountain cheeses.

The main processing phases of Ossau-Iraty are the following: Milk with the addition of rennet coagulates between 28 and 35 ° C, the curd is cut, heated, and stirred to separate the grains from the whey. Then the curd is placed in perforated moulds to be squeezed and drained, pressed, and the identification signs are added. The cheese then remains at a temperature of 20 ° C for 8 to 10 hours before being salted. Finally, the cheeses are placed in damp cellars (with a humidity level above 75%), are regularly turned and brushed until the rind is formed and the aromas develop (over 2.5 or 4 months).

Actors involved in the OFS

This PDO includes different stakeholders: from small transhumant shepherds, to valley farmers, to industrial dairies. Dairy industrial groups, e.g. Lactalis (former Besnier) and Bongrain, whose decision-making centres are outside the PDO area, played a central role in the definition of the PDO governance system and PS, whilst in 1981 only two cooperatives located in Béarn and one on-farm Basque producer joined the GI initiative (Millet 2017). Regarding the governance system, the governing body of the PDO, i.e. the *Syndicat de défense du fromage d'appellation d'origine contrôlée Ossau-Iraty*, is composed of three groups or *familles*: (i) milk deliverers (1733), (ii) onfarm producers, *fermiers* (130) and (iii) cooperatives or dairies (10). The *affineurs* (22) are divided between onfarm producers and dairies (ODG Ossau-Iraty 2015). The presidency of the governing body moves cyclically among the three groups. Regarding the PS, the Ossau-Iraty specifications reflect the interests of the industrial dairies to have a standardised cheese that is easily produced and marketed, although the specifications has been modified several times since 1981, leading to a progressive recognition of the farmstead cheese specificities. Although the majority of cheese sold as Ossau-Iraty is manufactured by industrial dairies, using predominately pasteurised milk, the onfarm production using raw milk is constantly increasing, from 60 tons in 1991 to 422 tons in 2015 (ODG Ossau-Iraty 2015).

Table 2.6: PDO Ossau-Iraty operators

Type of operator	Number	
<i>Milk suppliers</i>	1,249	= 1,289 milk suppliers (94 in Béarn)
<i>On farm cheesemakers</i>	101	= 141 on farm (40 in Béarn)
<i>Collectors, Processors, Affineurs</i>	23	= 2 collectors, 11 dairies, 10 <i>affineurs</i>

Source: data from ODG Ossau-Iraty (2015)

2.2.4. Case study 3: Béarn mountain cheese

The third case study is the Béarn mountain cheese Presidium, launched in 2008 by Slow Food to promote the summertime cheese produced in the Eastern French Pyrenees.

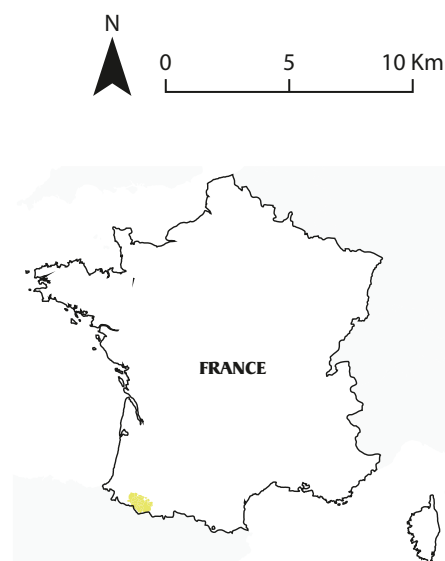
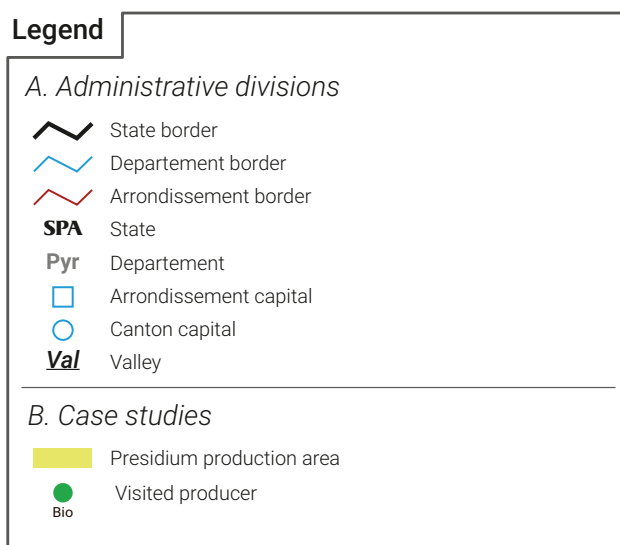
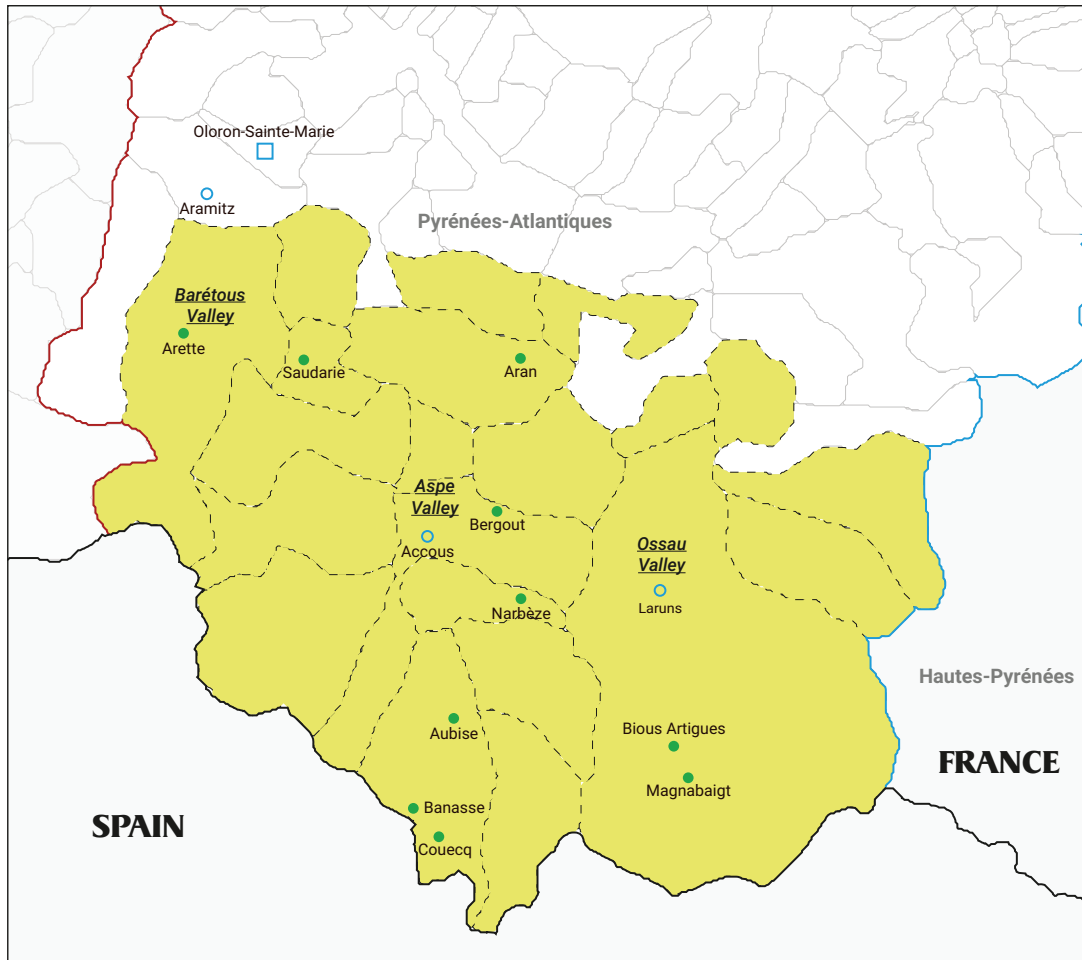
Area of production and origins

The area of production is located in the three Béarn Valleys (Ossau, Aspe and Barétous), in the Eastern part of the Pyrenees Atlantiques *departement*, whose highest peak is Pic du Midi d'Ossau (2,885m). The area is characterised by abundant rainfall and diverse mountain flora. Dandelions and wild clovers are the main food for sheep in the mountains. It is located within the area of production of the Ossau-Iraty GI and also in the area of the National Pyrenees Natural Park.

In the study area, the farmstead cheese production and the exploitation of summer pasture has declined less than that of the planes because the milk collection imposed by the industrial dairy system was not profitable in such mountain areas (Corouge 2002). Transhumance is an economic strategy to lower the cost of feeding livestock in the summertime, while preparing and stocking the hay on the valley farms as a winter feed (Corouge 2002). Livestock, predominately sheep, still transhume in June from farms located in the valleys (to mountain pastures between 1500m and 2200m. In wintertime some of them are located in valleys outside Béarn, such in Gers, performing the so-called *longue transhumance*. From June to October, for about 5 months per year, the livestock take advantage of the mountain pastures, whereas the production of cheese stops mid-August. Currently, all mountain pastures are used apart from the ones that are particularly difficult to access and are vulnerable to bear attacks. Shepherds are granted access by the municipalities to use mountain pastures on a yearly basis, including access to the cheese making facilities. The summertime production of the highly renown cheese is the most profitable activity for this type of mountain farming system (Corouge 2002).

Since 2000, several initiative have aimed at promoting the Béarn mountain cheese, including Slow Food who is promoting the rediscovery of ancient mountain cheese made without added lactic ferments. Another initiative is the yearly Laruns cheese festival that promotes the reputation of the farmstead cheese produced in Béarn, usually referred to as Ossau cheese (Millet 2017). Moreover, the Ossau Valley's shepherds have tried to get the recognition of a PDO for the cheese produced in Haut-Béarn exclusively, but the INAO rejected such project because the preceding Ossau-Iraty PDO stands on the same area. Other labels complement the Presidium with a different focus. For instance, Pé Descaous, whose logo depicts a bear paw print symbolising the peaceful coexistence between shepherds and wild nature, has a higher environmental focus.

Map 6: Location of the Béarn Mountain cheese case study



Author and Boada, J.'s elaboration



Picture 2.9: Mountain huts (Aspe Valley, Béarn)

These rustic mountain huts are shepherds' house and professional workshop for four months per year where they produce cheese on a daily basis.

Photo credit: Mariani, M.



Picture 2.10: Communication from mountain huts (Aspe Valley, Béarn)

Communications from the mountain huts to the valley are limited; tasks, such as getting fresh supplies, are planned in advance according to a rigorous routine. The majority of mountain huts are so remote that no phone network is available: some shepherds close to the state borders use the Spanish network, others (like in this picture) know the spots of connections close to their hut.

Photo credit: Mariani, M.



Picture 2.11: Whey reuse (Ossau Valley, Béarn)

Young women and children are common actors in the mountains. A shepherd and his son give the cross-breed black pigs the whey which remains after the production of the *tomme*. Pigs mounted to the summer huts with the other inhabitants of the valley farm.

Photo credit: Mariani, M.



Picture 2.12: Milking of a Pyrenees goat (Ossau Valley, Béarn)

Manual milking is performed by this shepherd by moving a seat and a container where each goat is standing. Dogs help with the task.

Photo credit: Mariani, M.

The cheese and cheese making techniques

Béarn shepherds make *tomme*, an approximately 5kg semi-hard cheese (*pate pressée non cuite*). Mountain cheese is produced in simple huts (*cujala* in Béarn dialect) that have been brought up to health and safety standards in the last 20 years. Approximately 100 tonnes of mountain cheese are produced annually. Ewe milk is highly predominant, but making mixed milk cheese with the addition of goat or cow milk is also an ancient and modern-day tradition. Several shepherds also process the whey, a by-product of the production of the *tomme* into an old fashion product as *greuil*, a traditional Pyrenees ricotta. This allows them to offer another product and to gain the loyalty of traditionalist consumers. The summertime high pasture rich in aromatic herbs confers a special flavour to milk that is recognised by local consumers and justifies an added value.

The geographical migration, from the valleys to the mountains, from a farm to a temporary mountain hut, corresponds to a change of cheese making practices, in order to adapt to different environments. The *estive* becomes a ‘taskscape’ (Ingold 1993), a socially constructed and changing space of activities. Farmers, who used to be mainly located in the land surrounding the valley farm, become shepherds that follow their sheep all day long in steep pastures helped by their trusted dogs. Roles often change: farmers who are responsible for breeding animals in the winter, in summertime stay at the valley farm to make hay (generally a male activity). Other members of the family take care of animals and cheese making in summertime.

The mountain cheesemaking activities are influenced by the National Pyrenees Natural Park, generating controversy. For instance, the Park supports a plan for the reintroduction of the bear in the Pyrenees, a plan for road construction to reach the mountain huts, and strict regulation of burning stubble. Many of the interviewed shepherds experience this local conservation institution’s rules as a burden, an unfair imposition, not representative of local knowledge. As an onfarm producer told us: ‘the National Park does not understand our real needs and daily tasks, and is imposing or offering measures that are threatening both the mountains and our activity’.

In recent times, we witness a change in the maturing procedures. Cheese maturing has been traditionally outsourced to professional private *saloirs*, cheese-maturing facilities; the *affineur* was becoming the owner of 1 over 12 cheeses delivered for maturing. Traditional collective maturing facilities are increasingly substituted by individual maturing facilities in order to enhance organoleptic and market differentiation of cheeses. As one onfarm producer told us: ‘The microflora of a maturing cell gives a specific colour to cheese’. By maturing cheese on their own, on farm producers are also appropriating new practices of microbial diversity management, willing to offer consumers a cheese unique to their own mountain production.

Actors involved in the OFS

The majority of shepherds of Béarn are organised in an association, Association des Eleveurs Transhumants des Trois Vallées Béarnaises, that since 1990 is developing actions to promote mountain cheese and transhumance. Such association is the main partner of Slow Food for developing the Presidium.

The majority of the Slow Food Presidium members are fully against the Ossau-Iraty GI. Such initiative of valorisation of sheep cheese manufactured in the whole Pyrénées Atlantiques department is generally perceived as working against the interests of shepherds and small quality cheese makers, predominantly located in Béarn, as banalising their product while appropriating the reputation of a renown artisanal and traditional cheese. As a reaction, shepherds of Béarn joined together to promote their shared vision of regional quality cheese, recognised by the mountain pasture logo, *marque d'estive* (integrated in the GI in 2014). However, the Presidium is nevertheless an option for those wishing to engage in this collective process with a long regional history and currently it involves 15 producers that are also in the PDO.

Table 2.7: Béarn mountain cheese Presidium operators

Type of operator	Number
<i>Transhumant cheesemakers belonging to AET3V</i>	51 : 15 belong to Ossau-Iraty 9 also have cows 3 also have goats
<i>Transhumant cheesemakers outside AET3V</i>	40

Source: data from AET3V (2016)

2.2.5. Case study 4: Chefchaouen goat cheese

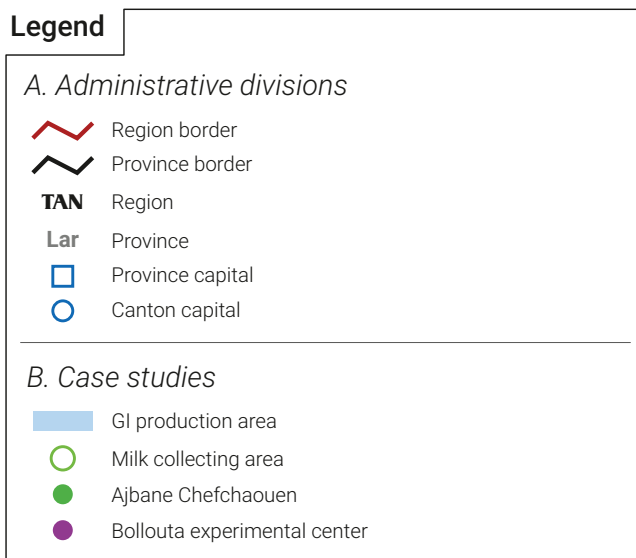
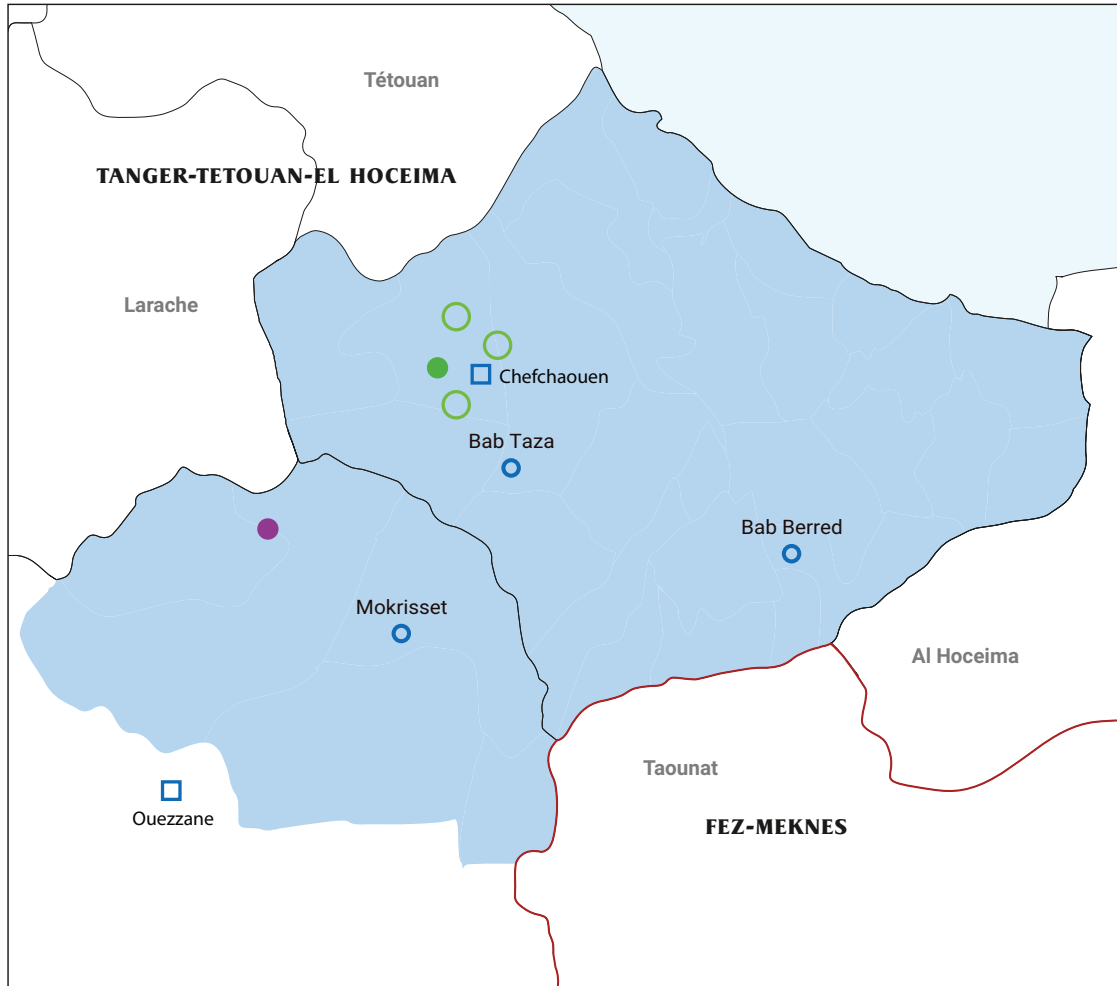
The case study in Morocco is the Chefchaouen goat cheese, recognised as a GI (a PGI) in 2011. Although the procedure and certification scheme have been defined, they are only partially operational. Consequently, while it is not possible to fully assess the impacts of the GI scheme on the production and consumption practices, this ongoing case study offers a perspective on GIs as processes with preliminary expected and unexpected outputs.

Area of production and origins

The area of production of the GI cheese corresponds with the province of Chefchaouen, a city of 45000 inhabitants located on the Rif mountain and characterised by steep slopes of moderate height extending to the Mediterranean Sea. From an anthropological point of view, high population density and an ethnically diverse population characterise the Rif mountains area. The population of Jbala²², a minority which speaks a variant of the Arabic dialect, lives on the west side of the Rif, in the province of Chefchaouen, whereas two Amazigh groups (Rifain and Senhadja) live in the east side (Vignet-Zunz 2014).

²² Jbala means mountain people; *jbel* means mountain.

Map 7: Location of the Chefchaouen goat cheese case study



Author, and Boada, J.'s elaboration



Picture 2.13: Goat herder who delivers milk to Ajbane Chefchaouen (Ras el Ma, Chefchaouen)

Despite having a herd of 40 goats, i.e. an average size for the area, this goat herder is struggling to secure his livelihood. He does not own any pastures and the collective area where he used to take his goats is now taken for cannabis production. Consequently, he is relying more on (concentrate) feed that is increasingly expensive.

Photo credit: Mariani, M.



Picture 2.14: Goat herder in the outskirts of the city (Ras el Ma, Chefchaouen)

This goat herder has seven goats. He is planning to increase his milk production and deliver it to Ajbane Chefchaouen.

Photo credit: Mariani, M.

From an economic point of view, the dominant rural system is defined as ‘agro-sylvo-pastoral’, in which fruit is cultivated along with cereals (i.e. sorghum, wheat, and barley) and legumes in proximity to forests where livestock graze (Hmimsa 2006). Pastoralism, therefore, is an (economically) important activity, although the average size of goat herds is small: more than 80% of the farms have fewer than 20 head (Bouillot 2010). Other general economic characteristics of this rural area are the predominance of micro (<0.5 ha) and small properties (<5 ha) and the presence of cannabis (Jabiot 2011).

The geographic area of Chefchaouen has been recognised nationally and internationally for its rich natural and gastronomic heritage. In 2010, the UNESCO recognised Chefchaouen as an emblematic community for the Mediterranean diet, and the territory of Chefchaouen is part of the Mediterranean Intercontinental Biosphere Reserve, included on the global list of biosphere reserves by UNESCO in October 2006. Moreover, two natural parks surround Chefchaouen (i.e. national Talassemtane park and regional Bouhachem park) (Jabiot 2011). In recent years, the province of Chefchaouen has framed a number of initiatives of private and public stakeholders, including several international NGOs, in order to promote certain emblematic products such as olive oil, fresh goat cheese, called *Jben*, dried figs and aromatic herbs, and *Samet* (grape syrup). These are among the reasons why the traditional, clean, pleasant city is increasingly becoming a popular destination for national and international tourists (González Vázquez 2011).

The historical reputation of Chefchoauen is linked more to pastoralism than to cheesemaking. Indeed, the Chefchaouen goat cheese GI is based on a long tradition of pastoralism and extensive livestock farming, with goats feeding in natural pastures, rich in native aromatic and medicinal plants. This traditional dynamism of goat farming is now celebrated bi-annually in the Chefchaouen goat festival.

Sales of goat milk, fermented *leben*, and butter are considered a traditional activity in the city of Chefchaouen, in particular in the bi-weekly market (*souk*), or door to door. However, around Chefchaouen fresh goat cheese was rarely produced and eaten, and small quantities of fresh cheese—mainly cow milk cheese—came mainly from the area surrounding the city of Tetouan. Historical origins of this food habit seem to have roots in the Al-Andalus time, the Reconquista, and then colonial time, with the Spanish Protectorate shaping the agricultural and food landscape of Northern Morocco (Ibn Halsun 1996; Vignet-Zunz 1997).

The cheese and cheese making techniques

Northern Moroccan fresh cheese, *jben*, is highly diversified in terms of milk (goat or cow), coagulation type (enzymatic or lactic), type of rennet (industrial, vegetal—*Cardunculus cynara*—, or animal paste), and duration of coagulation, salting methods (in brine, dry salt, or addition of salt while draining). Cheese is traditionally packaged and sold in palm leaves, called *Medwar de Laazifa*. However, traditional methods are progressively substituted by industrial methods and tools, e.g. pasteurisation or plastic packaging. In particular, the use of industrial rennet has become predominant in order to reduce the time of coagulation and increase production (Zantar et al. 2013).



Picture 2.15, 2.16, 2.17: Industrial and artisan tasks at the Ajbane Chefchaouen (Chefchaouen)
Morning milk reception and pasteurisation; cheese maturing in cold rooms; manual cheese packaging.

All photos credit: Mariani, M.



Picture 2.18: Sale of traditional fresh cheese (*jben*) in the market (Fez)

Photo credit: Cervigni, E.



Picture 2.19: Traditional cow milk cheese wrapped in palm leaves (Tanger)

Photo credit: Mariani, M.



Picture 2.20: A Jbala woman is selling traditional cheese at the market (Tanger)

Photo credit: Mariani, M.

The GI cheese erased all these differences and recognises only one type of cheese: a fresh lactic cheese made with pasteurized milk, coagulated for 24 hours, and manually moulded. The cheese weighs 250 gr, has a rounded shape and a soft texture, and is wrapped in greaseproof paper and vacuum packed in plastic). Such efforts meet consumers' concerns on the health and safety of traditional products, in particular in the case of urban consumers and tourist demand.

Several breeds are allowed for the production of the GI cheese, i.e. local breeds, Mourciana, Malaguena, Saanen, Alpine, and cross-breeds. However, the goat herd is dominated by more than 90% local populations resulting from crossbreeding over time with neighbouring Andalusian goat breeds. Genetic improvement programs led by public authorities began twenty years ago to improve the production potential through the introduction of Alpine goats.

Actors in the OFS

The National Association of Sheep and Goats Breeders (ANOC) has applied for recognition of the Chefchaouen goat cheese GI and is currently managing the initiative. The Ajbane Chefchaouen dairy, located in the outskirts of Chefchaouen city and managed by ANOC, is the only manufacturer of the cheese, collecting and transforming the milk supplied by forty local farmers. An ANOC managed research centre devoted to genetic improvement, training activities, and milk production is located in the Bellouta village. As for other GIs in Morocco (Hamimaz 2009), the coordination of the value chain is difficult, full traceability of milk delivery is missing, and the reputation still has to be consolidated on the poorly-structured market.

Table 2.8: Chefchaouen goat cheese GI operators

Type of operator	Number	
<i>Milk suppliers</i>	100	= 3 collecting centres
<i>Experimental centre and milk supplier</i>	1	
<i>Dairy</i>	1	

Source: data from ANOC Ajbane Chefchaouen (2

CHAPTER 3

Cultural Biodiversity Unfolded, (Un)matching Discourse and Practice

This chapter has been the basis for an article that will be submitted with the same title to *Agriculture and Human Values*, co-authored by Mariagiulia Mariani, Claire Cerdan, and Iuri Peri. The authors concede that at least 80% of the work has been done by Mariagiulia Mariani.

Chapter 3

Cultural biodiversity unfolded, (un)matching discourse and practice

3.1. Introduction

Biodiversity is a ubiquitous and evocative term raising at times alarmism at its loss and at other times excitement for its salvation power. The discourse on biodiversity is not limited to wild species, but implicates agriculture as well, on one hand as a destroyer of biodiversity linked to agriculture intensification and on the other as a conservator of biodiversity in the case of sustainable agriculture (McLaughlin and Mineau 1995; EC Biodiversity Strategy 2011). Biodiversity is a complex, controversial, and changing narrative shared by physical and social scientists, policy makers, and civil society (Thomas 2015; Orlove and Brush 1996).

Origin food schemes (OFS), such as the state-driven Geographical Indication (GI) system which protects place-based food names, attach the value of a product to a particular place: the product uniqueness and added value depends on the local cultural and biological resources (Bowen and De Master 2011; Vitrolles 2011). OFS are increasingly mentioned in the debate over biodiversity, which will henceforth be referred to as cultural biodiversity (CB) to emphasize the relevance of local knowledge and practices in the management of agricultural biological resources (King and Eyzaguirre 1999; Bérard and Marchenay 2006). However, this emergence of CB in food policy debates corresponds to different rationales, e.g. the economic benefits of its defense (Belletti and Marescotti 2011; Bowen 2010; Vandecastelaere et al. 2009), territorial development based on a common heritage (Grasseni 2011; van Caenegem and Taylor 2017; Delfosse 2010; Siniscalchi 2013a), and the protection of indigenous knowledge in the Global South (Roussel and Verdeaux 2007; Blakeney 2013).

Over the last two decades, European governments have progressively embedded CB in the GI system, although GIs are not primarily conceived as legal tools defending CB (Thévenod-Mottet 2010; Belletti et al. 2015; Giovannucci et al. 2009). GIs are promoted for their potential ‘to protect local (food) cultures, offer a stronger quality guarantee to consumers, and provide opportunities for value-added agriculture’ (Bowen 2010). Despite the risk of sanctions due to protectionism, GIs have also been considered as a possible application of article 8 (j) of the Convention on Biological Diversity (CBD), concerning the defense of cultural resources coupled with biological ones (Curci 2010; Boisvert and Caron 2010). On the ground, European GI product specifications, which define the mandatory production practices, increasingly include concerns about CB, provided a link between food quality and its origin (Bérard et al. 2005). This corresponds to the need for conservation of specific resources over time and/or to a marketing strategy answering growing consumer concerns (Isla and Wallet 2010; Boisvert and Caron 2010; Belletti et al. 2015).

On the other hand, social movements and NGOs have also developed strategies to contain the erosion of CB (Escobar 1999; Holmes 2015). In particular, since 1999, the

international Slow Food movement—born in Italy to combat the industrial uniformity of tastes—has launched more than 500 projects, called Presidia, with the declared aim of saving native breeds, vegetable varieties, and artisanal products at risk of disappearing by promoting them to consumers. The movement progressively shifted its focus from taste to ethics, questioning the environmental, social, and economic sustainability of the production process (Petrini 2010; Siniscalchi 2013a; Lotti 2010). Biodiversity—composed of domesticated landraces, traditional knowledge, and landscapes—became a keyword and core activity of the Slow Food Foundation for Biodiversity. If at present these ideas coincide with those of other environmental associations and public policies, Slow Food was the first to introduce them in Italy using vocabulary originating from the military sphere²³ and blended with biblical images: the salvatory power of biodiversity, the Ark of Taste, the moral good-ness of artisan food and producers, the trust which shapes the supporters' community (Leitch 2003; Siniscalchi 2013a).

Both the GI system and Slow Food have hence developed institutional discourses on CB and specific standards for producers. But which are the outputs of market tools such as OFS in the management of CB? Do concrete experiences of OFS correspond to what institutional discourses contend, or is there a gap between what OFS say and do? These questions have been partially answered by an emerging body of research in geography, political ecology, and agro-economy that explores logic and tools that integrate the natural world into markets, i.e the commodification of nature, asking if it is possible to conserve biodiversity without supporting the neoliberal capitalism that considers nature on the basis of its value (Holmes 2015; Castree 2008; Guthman 2004; Carrà 2005; Blandin 2009). For instance, authors have assessed the greening of the Common Agriculture Policy (CAP) (Deverre and de Sainte Marie 2008), or the widespread phenomenon of environmental or ecosystem services (Dedeurwaerdere 2014), criticizing the limits of an 'ontology of nature' (Escobar 1998) based on the dominant market paradigm (Buizer et al. 2016; Barnaud and Antona 2014). Within this frame, several authors have emphasized the inherent risk of market appropriation of OFS (Goodman 2001; Bowen and De Master 2011; Grasseni 2011, Goodman and DuPuis 2002), while others highlight new forms of environmental governance, which include local (and indigenous) communities, consumers and civil society, corporations, and transnational institutions (Buizer et al. 2016; Liverman 2004, Morris and Kirwan 2011; Plieninger et al. 2018).

However, the existing literature does not provide evidence to argue if there is a gap between the discourse provided by OFS on CB and the underlying practices. Moreover, there is a scientific need for a critical assessment of the outputs of different OFS (driven by States or social movements) as cultural and environmental tools. Thus, drawing on the discursive perspective outlined by Escobar's (1998) reading of Foucault (1971 and 1979) and more recent analyses (Nazarea 2005; Nazarea et al. 2013; Montenegro de Witt 2016), this paper explores the contested relationship between institutional discourses on CB and meaningful everyday practices of local actors, overcoming a rhetoric of joint goals and vision. By doing so, this paper aims to explore the possibility of OFS allowing local communities to engage with the concept of CB in political arenas.

²³ Presidium is from the Latin *praesidium* that means defense.

We illustrate our point through a study of the management of microbiobiodiversity of artisanal origin cheeses. Cheese production systems link knowledge and practices to all the categories of life: ecosystems, vegetables, animals, and microorganisms (Bérard and Marchenay 2005). Moreover, practices related to microbiobiodiversity are the fulcrum of recent debates on the GI systems and Slow Food.

First we will explore the emergence of CB as a political discourse, in particular in the domain of origin cheese. Next, we will confront how CB is mobilized in the GI system and by Slow Food, looking especially at cheese microbiobiodiversity. Then, we will analyze evidence from three case studies—cheeses recognised as GI and/or Presidia—in relation to their codified and tacit practices about microbiobiodiversity. Finally, we will discuss the reasons for the gaps between discourses and everyday practices in relation to CB in both OFS.

3.2. Biodiversity as a political discourse

This paper is built on a discursive perspective rejecting the use of the term ‘biodiversity’ as both a theory and a reality (Escobar 1998; Montenegro de Wit 2016; Takacs 1996, Nazarea 2006; Castree 2008). This theoretical approach is rooted in Foucault’s (1981) notion of discourse, suggesting that, far from being culturally neutral, every discourse generates exclusion through systems of truth and false defined by influential institutions and ‘experts’ (Dreyfus and Rabinow 1982:48). Beyond its physical content, biodiversity can thus be identified as a social construct, or in Escobar’s (1998:54) words, a ‘historically produced discourse’, framed by heterogenous interests. For instance, Montenegro de Wit (2016) argued that “agrobiodiversity needs to be understood in political and agroecological terms: not just as something that ‘exists’ but that is created and sustained”, i.e. something that is used and experienced by people. Escobar (1998) argued that if biodiversity is ‘the construct around which a complex discourse of nature is being deployed’, hence the discourse on biodiversity fashions a new relation between nature and society.

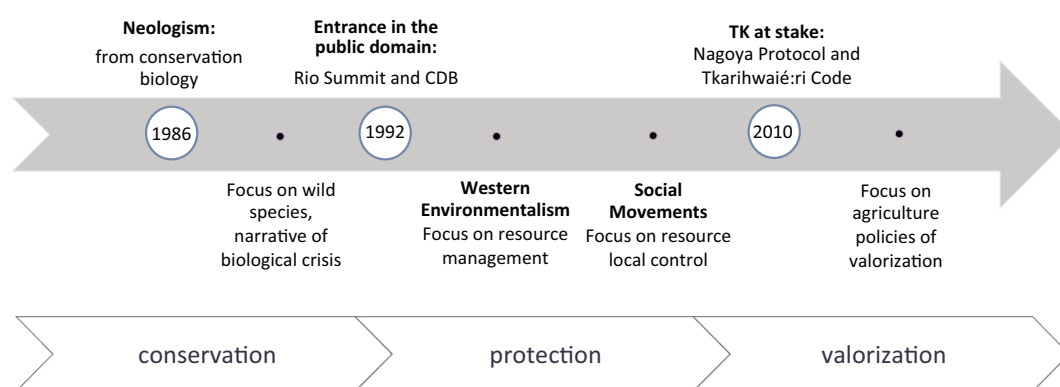
According to this perspective, the discourse on biodiversity depends on who is controlling it and whose knowledge is taken into account within a setting of asymmetries of power. For instance, Shiva (1993:12) observed that one of the consequences of the growing use of scientific data and language in the discussion of biodiversity is that local knowledge is first fragmented then eradicated. Moreover, Montenegro de Wit (2016), instead of questioning if erosion of biodiversity is happening or not, argues that it depends on the question: who is assessing and why? In fact, surprisingly, the anthropologist Brush (1991) argued that farmers adopting hybrid seeds as a cash-crop often continue to grow traditional varieties for domestic use and, as a result, CB is increased.

3.2.1. Biodiversity in the public arena: which ontology of nature?

Although the diversity of life is a concept as ancient as biology, only in the last 20 years has the term ‘biodiversity’ appeared in the political agenda to point out how human beings can conserve life and be resilient to what environmentalists call ‘planetary boundaries’ (Steffen et al. 2015), (Figure 1). Policy makers and media have appropriated this concept

since the 1992 Rio Earth Summit, also by means of the controversial CBD (Parizeau 1997:7; Lacy 2004; Boisvert and Caron 2010). Since then, the United Nations Food and Agriculture Organization (FAO) has been in charge of the CBD in relation to agricultural diversity and its member states have been in charge of implementing national policies. In particular, the European CAP is increasingly concerned about biodiversity loss in relation to unsustainable agricultural practices, promoting direct and indirect subsidies for environmentally friendly practices (Deverre and de Sainte Marie 2008). The link between biodiversity and cultural diversity has been formalized in the public arena more recently when, in 2010, the CBD was further implemented by the Nagoya Protocol and the Tkarihwaïé:ri Code of Ethical Conduct, emphasising the importance of local communities and knowledge in relation to biodiversity.

Figure 3.1: Evolution in the political and scientific consideration of biodiversity



Author's creation

As suggested by Blandin (2009), these international policy texts mark a semantic shift: the concept of 'nature' was substituted with 'natural resources' and then with 'biodiversity' over the last thirty years. This last term is used to refer to a 'reality' that can be 'quantitatively verified' and implies that ecosystems are in need of correct management. In particular, such texts basically demand a fair sharing of the economic benefits arising from the use of indigenous resources, without questioning their market appropriation, for instance by means of intellectual property rights (IPR) (Van Overwalle 2005). Moreover, such texts affirm that local communities depend on states for the protection of genetic and cultural resources (Aubertin et al. 2007).

At the same time, the term 'biodiversity' has rapidly gained acceptance among NGOs, social movements, and indigenous societies. For instance, numerous Western conservation NGOs have become influential actors in the biodiversity arena (Holmes 2015). A variety of social actors, in particular from the 'biodiversity-rich regions' of the world, now use this term to describe their activity (Escobar 1998).

The increasing relevance of biodiversity as a political discourse is also mirrored by the changing focus of research, shifting first from conservation biology to the protection of species or areas, and then to a management of ecosystems, including cultural dimensions, through positive protection *in situ* (Bérard and Marchenay 2006; Altieri and Merrick 1987;

Montenegro de Wit 2016; Nazarea et al. 2013; Brookfield 2001). Vast socio-economic literature has increasingly addressed CB as an asset for territorial governance and sustainable local development, able to reduce rural poverty by improving resilience and food security (Santilli 2011; Carrà 2005). Conversely, ethnographic studies recognise the primary role of local people in conservation and thus advocate for community sovereignty (Orlove and Brush 1996).

This excursus shows that the concept of biodiversity has been constructed as a political discourse, splintered according to the heterogeneous actors' interest and contexts. Five analytical dimensions allow us further understanding of how different categories of actors, e.g. Western environmentalists, social movements, and indigenous societies, appropriate the concept (Escobar 1998; Descola 2011; Thomas and Boisvert 2015). The actors' understanding and practice of biodiversity may vary to a large degree in terms of (i) *components* (e.g. considering only wild resources, services, or life in general), (ii) *knowledge* (predominantly scientific or traditional, written or oral), (iii) *value* (economic, cultural, aesthetic, or subsistence), (iv) *outputs* (based on market or informal practices), and (v) *governance* (according to the varying place of transnational institutions *versus* local communities). However, the actors' understanding and practice of biodiversity may also largely hybridize and overlap. For instance, Escobar (1998) suggests that, although Southern NGOs criticize the Western environmental approach, they paradoxically use the same elements in reclaiming local control and contribute to the commoditization of living beings for better management of phytogenetic resources. Nevertheless, 'at the margins' of such actors' networks using biodiversity to frame their projects, there is space for a counterdiscourse, and the ambiguity of the term can be inspirational for resistance and deep change of the hegemonic discourse justifying market appropriation (Nazarea 1995). Thus, biodiversity can be framed and re-framed and can be eventually used for local communities' claims.

3.3. The cultural biodiversity of origin cheeses: an invisible heritage

We can further illustrate the construction of biodiversity as a non-unitary political discourse by exploring the diverging OFS actors' appropriation of a recent discourse on cheese microbiodiversity.

From the above-mentioned rural development perspective introduced by social scientists as the dominant paradigm in rural policy-making, OFS—namely GIs or Presidia—are a strategy to recognise the added value of foods linked to an (often marginal) territory and its local know-how (Bowen and De Master 2011; Vitrolles 2011; Grasseni 2011; May 2013). The link between local resources and an increased cultural, economic, and environmental added-value depends on a process of 'heritage making' that comprises the selection, activation, and promotion of local biological and cultural resources following a multi-stakeholder negotiation (Bienabe 2009; Belletti et al. 2011). For instance, in the case of origin cheese, breeders' knowledge and environmental management practices become essential elements which enhance the link with the origin that make cheeses unique and consumers willing to pay a premium (Bérard et al. 2005).

In this process of ‘heritage making’, the microbiology of origin cheese becomes a crucial indicator of CB. In fact, origin cheese production systems are at ‘the crossroads between culture and nature’ (Bérard et al. 2005), and the underlying CB results from shared farming or processing practices of biological resources, including microorganisms, ‘in a form that consumer can *taste*’ (Percival and Percival (2017:16). Strategies and practices of selecting microbes are crucial, as ‘[c]ultivating microbes is the very essence of almost all cheesemaking, which relies on the action of lactic acid bacteria to preserve perishable milk’ (Percival and Percival 2017:30).

Studies in microbiology have shown that farmers’ practices influence the microbial diversity of cheese, from grazing management and fertilization (Plantureux et al. 2005; Fretin et al. 2018), to the choice of farming native breeds adapted to a territory, to the cheesemaking practices, such as ‘back slopping’ whey cultures²⁴ and rind smearing, and the choice and management of rennet. In particular, wooden tools, such as vats (Bérard and Montel 2012) and ripening shelves (Lortal et al. 2014), have been pointed out as crucial in the definition of cheese microbial ecosystems (Lortal et al. 2009). Conversely, other practices, e.g. pasteurization, are meant to reduce the native microflora of milk and to replace it with a non-native one through the inoculation of selected starters and ripening cultures. Thus, pasteurization undermines biodiversity (West 2008; Montel et al. 2014; Scintu and Piredda 2007). Since the 1970s, selected cultures have increasingly influenced the cheesemaking techniques and tastes of both industrial and origin cheeses (Casalta 2009; Feutry et al. 2016). A limited number of companies produce standardized cultures that are substituted for the unique microbial ‘terroir’ in constant evolution in each dairy (Percival and Percival 2017; Rai and Bai 2015).

Despite this crucial role, the ‘invisible’ microflora of cheese has been largely neglected by the media and origin cheese advocates until recently. But in the last few years, the use or rejection of commercial starter cultures is becoming a popular topic outside the scientific world (Percival and Percival 2017; Slow Food 2018; Asher 2016). New-wave cheesemakers are moving beyond reliance on selected cultures, reconsidering the importance of correctly produced and managed healthy and biodiverse milk. Several producers are reconsidering the risks that the over-reliance on commercial cultures poses for the farmhouse cheese industry. Reflecting this new awareness, GI producers’ organizations and Slow Food have acknowledged that the use of selected cultures dominates the food quality attributes responsible for product differentiation. Consequently, microbial diversity management practices have been codified into the specifications of a number of OFS cheeses to different degrees in the last decade, as we will further develop.

The remainder of the paper proceeds as follows. After a brief discussion of our methodology, we will explore institutional discourses on cheese microbial diversity by first outlining their emergence within the GIs system and Slow Food, and then contrasting them. Then, we will analyze evidence from three OFS cheeses in relation to their codified and tacit practices about microbial diversity. Finally, we conclude with a discussion of how our findings might reveal and explain gaps between discourses and practices.

²⁴ The ‘back slopping’ technique consists in the inoculation of whey selected from the previous day’s curd to enhance the acidification process.

3.4. Methods

We selected three case studies that are at forefront of practices favoring microbiodiversity in origin cheeses and illustrate complementary points: the case of Piacentinu Ennese highlights differences in the communication strategy of the Presidium and the GI— both OFS share the same specifications; Ossau-Iraty's specifications have changed following new emerging concerns or power relations among the GI stakeholders; Béarn mountain cheese Presidium is the first symbol of the Slow Food campaign against starters.

The analysis below is the result of ethnographic research conducted between 2014 and 2017, comprising in-depth interviews, participant observation, and secondary data analysis of communication material and legal texts from the European Union (EU). We visited several sites in Italy: Piemonte, headquarters of Slow Food and the location of Cheese, a biennial Slow Food event on raw milk cheeses from worldwide, and Terra Madre-Salone del Gusto²⁵; and Sicily, where Piacentinu Ennese is produced. Moreover, we performed site visits in Béarn, France, where the Béarn mountain cheese and Ossau-Iraty are produced.

Fieldwork in Sicily was conducted for six months over 2014, 2015, and 2016. We visited six farms and held ten semi-structured interviews with the Piacentinu Ennese GI and Presidium producers, and non-origin food schemes' producers. Moreover, we interviewed five employees of local institutions that provided scientific and legal support for the initiation of the OFS, including local government employees, CoRFiLaC, i.e. the applied research center on Sicilian dairies hosted in Ragusa, and the University of Catania, agriculture and rural economy departments. We also actively participated in three gastronomic events and farmers' markets, and visited five sale points for Piacentinu Ennese, including specialty cheese shops, grocery stores, supermarkets, and restaurants.

To develop the two French case studies, we made site visits to Béarn in the summers of 2014, 2015, and 2016, during the mountain cheese production. We used participant observation to learn from ten cheesemakers about their understanding of and practices regarding microbiodiversity and conducted semi-structured interviews with stakeholders. We also conducted three semi-structured interviews with chefs, participated in local cheese festivals, and visited three local cheese maturing facilities and shops.

While in Piemonte, we reviewed Slow Food reading materials and the Presidia promotional material, both printed and video. We participated in ten informal tasting events and taste education workshops held during the Slow Food events. We co-organised a taste education workshop at Terra Madre-Salone del Gusto in 2016 on the Béarn mountain cheese made without selected starters.

Following fieldwork, we performed a content analysis of the collected data, including the specifications of the three OFS cheeses, the legal and promotional material related to GI products (also ten websites and three blogs, such as <http://elevage.megabb.com>), and placed the analysis within an analytical framework. We used Foucault's notion of

²⁵ Terra Madre-Salone del Gusto is a Slow Food international gastronomic and political event held in Turin every two years.

discourse to analyze the discourse on biodiversity developed by OFS stakeholders, and we focused on the analytical discursive elements previously introduced: (i) *components*, (ii) *knowledge*, (iii) *value*, (iv) *outputs*, and (v) *governance*. Building on the above-mentioned literature on the microbiology of cheese production systems, we selected the following elements as markers of cheese microbiodiversity: fertilization, pasture management, breeds, feed, milk heating treatment, milk conservation, processing tools, use of bacterial cultures, rennet, and cheese maturing and then analyzed producers' practices surrounding these elements.

3.5. Institutional discourses on cheese microbiodiversity in Origin Food Schemes

3.5.1. An emerging concern about cheese microbiodiversity

GIs are increasingly, but often implicitly, becoming tools based on the market valorization of specific and common resources affecting food qualities. Despite debates²⁶ and the consumers' perception of GIs as traditional and environmentally friendly, the inclusion of criteria favouring CB in the specifications is not compulsory, but nevertheless the value of CB is increasingly acknowledged. Concerning microbiodiversity, various communication and promotional materials recognise that GI cheese quality is linked to 'cheese flora'. Taking the example of the institute representing the 50²⁷ GIs of French dairy products (French acronym CNAOL), its communication materials contend that GIs preserve microbiodiversity by processing raw milk and mobilizing traditional cheesemaking knowledge. Such 'living knowledge' is continuously perfected and is characterized as 'alive' because it is rooted into microbiodiversity: GI producers are meant to perfect feeding according to grass growth, optimize the safety of milk while favoring the bacteria useful for cheesemaking, modify processes with the day-to-day variations in milk, adapt aging to the potential of each cheese (CNAOL 2018). The value of microbial richness is emphasised, as the over 300 bacteria strains/species and 70 species of yeasts are responsible for unique *taste* and flavors. On the other hand, the microbiological richness is linked to *health*, on the basis of its immunological power, because it protects cheese from pathogens, positively interacts with the gut microbiota, and reduces atopic allergies and asthma (CNAOL 2018).

The use of starters is increasingly addressed with the Swiss GI Gruyère and the Italian GI Parmigiano leading the debate (both are manufactured with local whey starters). In France, and less so in Italy, public funding is devoted to R&D on sensitive topics such as the dairy microbial ecosystems management (e.g. establishing local strain banks), the conservation of locally-rooted practices and resources, and the social acceptability of GI cheese in

²⁶ See the Regions Committee of 22 June 2009, the 2006 'Grenelle de l'environnement' (Caron and Boisvert 2010), and the 2013 National Assembly debate about the inclusion of socio and environmental conditions for GI specifications (Chabrol and Marie Vivien 2014).

²⁷ France is the country with the highest number of GIs on dairy products, including butters and creams.

relation to microbiobiodiversity²⁸. However, despite these public efforts, the rhetoric on the risk of raw milk and pathogens contamination is mediatized to a much greater degree (West 2008).

For its part, Slow Food has been legitimizing cheese microbiobiodiversity in the public and gastronomic sphere since the 2001 launch of a campaign for ‘raw milk cheese’ in countries where artisan cheesemakers suffer from the limitation of strict health regulations. In 2017, a campaign for ‘natural cheese’, i.e. cheese free of starters, warns about the alarming loss of microbiobiodiversity generated by industrial standards that inhibit the growth of bacterial flora.

Although much less evident, this is a loss of biodiversity as well. Once upon a time, there would have been a million bacteria, including 800,000 lactic acid bacteria in every milliliter of milk. These days, there are less than 100,000, while the lactic acid bacteria may account for only 20 to 40 thousand, sometimes zero. (Slow Cheese webpage)

Slow Food communication materials describe bacterial cultures alternatively as natural, indigenous, or local, in opposition to selected, industrial or commercial, and consider microbiobiodiversity responsible for good and diverse tastes—i.e. consumers’ pleasure. By using starters, Slow Food warns, small producers risk losing the potential to differentiate themselves.

3.5.2. *Contrasting GIs and Presidia discourses on microbiobiodiversity*

After having outlined the emergence of a discourse on microbiobiodiversity in the GI system and Slow Food, we now contrast them following the selected analytical discursive elements.

(i) *Components*

Biodiversity comprises local cultural and biological resources in both the GI system and Slow Food, and implies the existence of nature preexisting human activities. In this approach to the human/nature relation, nature can be destroyed by human beings and hence is ought to be protected. In particular, cultural components predominate in Slow Food *gastronomic*²⁹ CB. The movement’s declared mission is raising awareness of the value, identification, and protection of knowledge and collective memory of a community which grows and processes traditional food. This value transcends the food itself.

Regarding the discourse on microbiobiodiversity, Slow Food introduced an apparently oxymoronic binome: the *natural* cheese and the *good artisan* cheesemaker. On the one hand, the natural-ness of cheeses is considered incompatible with starter inoculation because ‘[i]n nature, bacteria are found in milk, on the cheesemaker’s hands, on the animals’ udders, in the bucket used for milking, and on wooden tools’ (Slow Cheese

²⁸ Since 2008, the working group ‘Réseau Mixte Technologique fromages de terroirs’ bridges research, extension services, and GI related businesses and focuses on the management of microbiobiodiversity to ensure the resilience of origin cheese systems.

²⁹ CB can be qualified as gastronomic: *taste* is its material manifestation; *pleasure* is how it experienced by people.

webpage). ‘Natural’ becomes a slogan building on anxiety about industrial food and globalisation. Natural cheese, instead, is made in harmony and cooperation with nature, from astral elements (as in biodynamic wine) to microbes. On the other hand, Slow Food counters the decision of using starters as a shortcut to the demands of knowledge and time with the ‘right’ choice of ‘natural cheesemaking’ that is ‘more of a craft, similar to natural winemaking, or sourdough breadmaking’. (Slow Cheese webpage) Thus, nature and microorganism are ubiquitous, but must be protected.

(ii) Knowledge

Both OFS are examples of conservation *in situ* and provide a revival of local ecological knowledge. Both legitimize practices of everyday conservation that are often implicit and beyond programmatic design, and contrast with scientific conservation initiatives financed by and benefiting industry (Graddy 2013; Nazarea 2005). For instance, Slow Food recognises that local ecological knowledge allows farmers and food processors to be ‘guardians’ of plant varieties and animal breeds. Unlike seed banks or traditional knowledge museums, Slow Food calls on producers to actively engage with consumers in the battle to save CB ‘for the future of the planet’ because ‘[e]very one of us can do something, in our local area, every day. We must not dwell on what we have lost, but focus on what we can still save.’ (SFFB 2018)

However, the GIs and Presidia’s discourse on CB mobilize scientific knowledge. GI communication materials are grounded in scientific evidence, e.g. studies proving the health benefit of cheese flora or the beneficial role of wooden cheesemaking tools because of the microbiotic ecosystem biofilm which limits contamination (e.g. Montel et al. 2014 quoted in CNAOL 2018). For its part, Slow Food provides abundant communication channels to producers and legitimizes their own local knowledge in the public arena, often in contrast with scientific knowledge. In other circumstances, Slow Food instead mobilizes scientific knowledge (e.g. data from FAO 1996 and the EU ‘Biodiversity Strategy to 2020’) and, as the case of microbiodiversity best demonstrates, acts as the authority defining which (good) CB has to be pursued and protected neglecting local actors’ appropriation.

(iii) Value and (iv) Outputs

Both OFS recognise the market value of CB and design market tools, i.e. the GI and Presidium products that, to different degrees, base a qualification process on non-market attributes. On the one hand, CB has been introduced in the GI qualification process, albeit marginally, by means of the concept of *heritage*, recognizing CB as a common good to be valued and preserved by the producers’ collective body (Bérard et al. 2005). GIs hence transform origin food in a ‘common good with limited property’ (May 2013), the property of the OFS. In particular, the discourse on microbiodiversity tends to transform the unique microbiological characteristics of a cheese and the related production practices into heritage. Microbiodiversity is responsible for taste, quality, and added value just like more visible forms of biodiversity.

On the other hand, CB became a fundamental *moral* attribute in the qualification process designed by Slow Food, together with ecological (Siniscachi 2013a) or aesthetic attributes (Miele and Murdoch 2002). Slow Food considers CB a moral condition for belonging to

the movement and thus for taking advantage of its distinctiveness. Consistent with MacDonald (2013), we find that the Slow Food discourse on CB tends to transform food into a moral good, based on a supposed risk of extinction, by mobilizing simultaneously a political subversive language and a moral discourse aiming at salvation. As MacDonald (2013) puts it,

Slow Food promoters have effectively adopted the vernacular of biodiversity conservation and play on the constructed value of diversity (biological and cultural), and a consequent fear of extinction, as a rhetorical strategy for justifying the protection of production practices and the lifestyles that underpin them.

In this respect, the recent attention to cheese microbiodiversity strengthens the designation of cheese as a *moral good* qualified as *naturally made* and under threat. Farmers using selected cultures are accused of not being good, or not good enough for Slow Food. They are morally bad because they do not behave according to the faith and practically bad because they are not effective artisans. Conversely, Presidia are ‘singular’, ‘unique’, ‘rare’, and the fact that they cannot be substituted effectively reduces competition (Siniscalchi 2013a). Small producers using starters renounce their potential organoleptic difference to compete in the quality market and this would then jeopardize and threaten the Slow Food qualification strategy.

(v) Governance

The two studied OFS have highly different governance systems, but also commonalities. First, both are based on the direct intervention of public institutions in the field of CB. The GI system is based on the legal protection of states, whereas Slow Food is a consumer-driven movement highly supported by European, national, and regional policies. Next, both OFS are increasingly used to govern regional and environmental issues through a local negotiation process, e.g. the producers’ definition of specifications.

In contrast to GIs, Slow Food promotes networks of farmers and consumers provided with new—although limited—agency. On one hand, Slow Food emphasises the role of small-scale producers, the ‘Earth’s last custodians’ (SF Vademecum on Biodiversity), in safeguarding CB more than other movements do. For instance, producers who reject the political dependence on the companies that produce starters are glorified. On the other hand, Slow Food calls on consumers to engage locally and considers that the defense of CB implies a daily ethical behavior that should become viral and strengthen an alternative food community. Regarding microbiodiversity, Slow Food denounces that starters are invisible to consumers because they are not listed on ingredient labels—this misleading behavior can be fixed with their campaign of awareness.

To sum up this section (4.5.2), on one hand, GIs discourse insists on the healthiness and cultural value of cheese microbiodiversity, in particular raw milk cheese, as a way to develop an institutional and inclusive strategy of qualification based on common biological and cultural resources understood as heritage. On the other hand, the discourse about cheese microbiodiversity allows Slow Food to go a step further in its discourse on CB, shifting from the defense of ‘traditional’ and ‘engendered’ food to a clear reference to ‘naturalness’ as an exclusive moral value attached to food. What is alternatively omitted is

the constant technical management of microbiology in all the production steps—far from the claimed primary role of nature in cheesemaking—, and the reference to health is almost absent, both in terms of benefits and risks.

3.6. Cultural biodiversity in action

With the aim of analyzing what occurs to the institutional discourse on CB in three selected mountain sheep cheeses recognised as GI and/or Presidia in Italy (Piacentinu Ennese) and France (Ossau-Iraty and Béarn mountain cheese), we will now consider both specifications and non-codified practices related to the management of microbial diversity, as crucial elements for the definition of OFS quality attributes.

3.6.1. *Confronting practices of the invisible*

Piacentinu Ennese is a sheep's milk cheese flavored with saffron, recognised as a GI in 2011 and as a Presidium in 2013 under the impetus of the Enna provincial government, Sicily. Studies conducted by CoRFiLaC supported by the Sicilian region characterized the cheese in relation to the use of raw milk of native breeds, traditional tools, local saffron, and a long period of maturation (Fallico et al. 2006; Carpino et al. 2010). Both OFS insist on the use of native breeds and on the historical authenticity of the cheesemaking practices, although such cheese was almost forgotten before the recent OFS revival. GI and Presidium have a complementary focus: the GI insists on the uniqueness of Piacentino Ennese, whereas the Presidium focuses on the variety of wild plants that determines the milk microbiological richness.

Ossau-Iraty is an uncooked and pressed ewe's milk cheese, recognised as a GI in 1980. This GI is vast both in terms of area of production and stakeholder inclusion. It comprises cheeses produced over two territories (Basque Country and Béarn) corresponding to different production styles. Images of Pyrenees summits strengthen a communicational unity in promotional materials. Although initiated by industry, the specifications have been revised to increase differentiation between farmer and industrial production, and valorize local CB (e.g. including strict specifications on native breeds and local feed).

The Béarn mountain cheese Presidium was launched in 2008 to protect the summertime cheese production and the practice of transhumance in the Pyrenees, from the valley to the mountain grazing areas. The Presidium aimed to recognize the uniqueness of such practices, mirrored by the cheese quality, and also the environmental role of preserving the landscape. The iconography of the Presidium is based on transhumance, wild flora, and mountain cheesemaking huts.

As already noted, each GI freely negotiates specifications on microbial diversity in accordance with the link between quality and origin. In contrast, Slow Food allows only raw milk and prohibits starters. Table 1 shows that the specifications of the selected case studies regulate the microbial diversity management and allows the identification of common choices and challenges. The three specifications codify the preference for native breeds recognized as more adapted to local territories. Sheep feed is highly regulated and GMOs

are excluded to favor instead the grazing lands located in the production area, and consequently farming diversity and the rural landscape. As in several other GIs, biotechs are unanimously considered to reduce biodiversity (Foyer 2010). However, specifications on the management of natural pastures that would strengthen the flora diversity and the milk microbiobiodiversity, as codified instead in the specifications of Comté cheese GI, are absent. But actors in the selected case studies differently manage microbiobiodiversity in crucial codified and tacit practices, which will be further developed.

Table 3.1: Microbiodiversity in the specifications of three OFS cheeses

	Piacentinu Presidium and GI	Ennese	Ossau-Iraty GI	Béarn mountain cheese Presidium
<i>Fertilization</i>	Not specified		Fertilization and sewage sludge are regulated in mountain pastures.	Only spreading of waste of the animals living in the mountain is allowed.
<i>Pasture management</i>	Not specified		Not specified	Mountain pastures are maintained by livestock, cleared by brushcutting and/or burning stubble.
<i>Breeds</i>	Native: Comisana, Pinzirita and Valle del Belice, and cross breeds		Native: Manech tête noire and tête rousse, Basco-béarnaise	Not specified
<i>Feed</i>	Based on grazing, local grains, GMO feed is forbidden.		GMO feed cannot be grown; feed must originate from the production area; grazing is minimum 8 months/year; since 01/02/2018 silage is forbidden.	Grazing is based on high pasture wild plants; complementary grains are authorized; GMO feed is forbidden.
<i>Milk heating treatment</i>	Raw milk is mandatory.		Raw milk is mandatory only for on-farm production.	Raw milk is mandatory.
<i>Milk conservation</i>	Refrigerated milk must be processed within 24 hours of milking.		Milk conservation is limited to 40 hours for on-farm and 48 hours for dairies.	Milk must be processed daily.
<i>Processing tools</i>	Traditional tools are mandatory: wooden vat (<i>tina</i>); wooden curd breaking stick (<i>rotula</i>); wooden table (<i>tavoliere</i>); and wicker basket (<i>fascetta</i>).		The use of nettle filters is authorised for on-farm production.	Milk processing must occur in mountain huts. Filtration on nettle is advised.
<i>Bacterial cultures (starters)</i>	Not specified		Milk may be inoculated with inoffensive bacterial cultures,	The use of selected starters is going to be forbidden.

		yeasts, molds (not GMO).	
<i>Rennet</i>	Goat or lamb paste rennet is mandatory.	Not specified	Not specified
<i>Maturing</i>	Maturing for minimum 60 days on wooden shelves.	The minimum maturing is 80 days for the 2-3kg cheese and 120 days for the 4-7kg cheese.	Not specified

Source: compiled by the authors

3.6.2. Processing tools

Processing tools are crucial in the specifications of Piacentinu Ennese which codify the use of wooden tools, i.e. a vat (*tina*), a curd breaking stick (*rotula*), a table (*tavoliere*). In particular, the use of a wooden table is variable: it is judged by several interviewed cheesemakers as unnecessary and/or demanding arduous cleaning procedures. Moreover, dairies often also produce regular sheep cheese that is not recognized as a traditional specialty, and thus a stainless table is also necessary in the cheesemaking facility. As we were told: ‘We keep the wooden table only to show to auditors or visitors’.

Beyond codified practices, much of the management of microbial diversity is left to tacit knowledge, consolidated over generations on a collective or individual basis. This is best demonstrated by the adaptation of Béarn shepherds to a mountain environment (see Chapter 5). Certain cheesemaking materials and techniques are unique to summertime production and are intertwined with tacit management of CB. For example, we observed the use of nettles to filter milk and to clean tools, a wooden stick to stir the curd, and copper cauldrons to heat the milk. A transhumant cheesemaker writes on her facebook page: ‘a copper cauldron, what an amazing living material!’, implicitly confirming studies on the positive effects of copper on enzymes and microorganisms employed in cheesemaking (Pecorari et al. 2009).

Then, the lack of electricity in the majority of cheesemaking huts crucially affects milk management practices. Shepherds milk the herds manually as a necessary concession to the lack of milking machines, but also acknowledge its positive impact on milk microbial diversity. Moreover, shepherds stock milk in stainless steel containers submerged in water at four degrees C: this short time and high temperature refrigeration limits the milk microbial diversity alteration and enhances instead the lactic bacteria development. This process is known as milk maturation. For this reason, Slow Food local leaders have opposed the electrification of the huts to defend the cheese quality *status quo*, contending that ‘the non-refrigerated milk keeps the pasture’s microbial flora, which gives it a characteristic taste’ (Presidia communication material). The Presidium’s producers, on the other hand, have diverse opinions on this topic.

3.6.3. Milk heating treatment

The choice of processing raw milk has been regulated in different ways: mandatory in the two Presidia, and for the on-farm Ossau-Iraty, but not for dairies. In Piacentinu Ennese we observed a polarization of several practices between on-farm producers (7) and small dairies

(3). First, the Presidium and GI share the same specifications and the same leaders, and do not distinguish between pastoralist and semi-industrial production: both are included. However, based on a difference of practices on microbial diversity, producers belonging to the two OFS are not necessarily mutually inclusive. In particular, one dairy producer has been excluded from the Presidium on the suspicion of pasteurizing milk. Conversely, the Consorzio has impeded an on-farm Presidium producer to join the GI because criticizing the overrepresentation of dairy interests.

We observed the same polarization of practices in the different production systems in Ossau-Iraty. Whereas all on-farm producers process raw milk, industrial dairies process approximately 90% of the GI production by pasteurizing milk, because it is more profitable and less risky in terms of health and safety when the whole production chain is not directly controlled. However, increasingly, some of the dairies process a minor volume of raw milk to differentiate their range of products and penetrate the market segment of on-farm producers. This variety of practices shows that OFS actors have not codified milk-heating practices in a way that would more forcefully attach CB to cheese.

3.6.4. Bacterial cultures (starters)

The use of selected starters is probably the most controversial element of our analysis. Actors of the same OFS appropriate the discourse on starters to different degrees leading to complementary or contradictory strategies, on an individual or collective level.

The Ossau-Iraty webpage, despite the reference to ancestral knowledge based on sensory appreciation, explicitly recognizes the inoculation of milk with bacterial cultures, and also molds and yeasts, as a regular habit. Starters (commonly containing *Lactococcus lactis* strains) are used by almost all farmers, including on-farm producers processing raw milk, to ensure homogeneous and regular cheese production and to overcome the risks of manipulating milk with insufficient levels of lactic acid bacteria (Feutry et al. 2012). Nevertheless, the GI is collectively searching for a path which is viable for both dairies and on-farm producers and guarantees a cheese with constant, common, and distinctive characteristics. For instance, recent studies have described the microbiota of Ossau-Iraty and assessed the use of isolated wild bacteria in selected starters to match the desired organoleptic features (Feutry 2016; Feutry et al. 2012). The GI has promoted a longlasting bank project to select and freeze local strains, despite limitations on time and money and unsatisfactory results. In addition, the GI has supported peer learning among producers, e.g. a fieldtrip to the Savoy region to study starters self-production techniques in local GI cheeses in 2016.

Piacentinu Ennese has implicitly regulated the use of selected starters by requiring the curdling of cheese in wooden vats that facilitate the multiplication of lactic bacteria and correct milk acidification, making starters less relevant (Montel et al. 2014; Lortal and al. 2009). Among on-farm producers, tacit practices related to milk fermentation play a crucial role in the cheesemaking process, although producers are hardly aware of them. One of the most reknown cheesemaker told us: 'I have always processed milk and I wouldn't be able to use starters'. We have observed his careful maintenance of the *tina* that is scrubbed after use and rinsed with whey.



Pictures 3.1: Milk containers are kept in cold water overnight (Béarn)
This conservation system allows for milk bacteria development, the so-called ‘milk maturation’.
Photo credit: Mariani, M.



Pictures 3.2 and 3.3: The *tina*, the wooden vat, and its use in a dairy (Enna)
The wooden container where milk curds is covered by a ‘biofilm’ that enhances milk maturation.
Photo credit: Mariani, M.

However, the choice of allowing selected starters has been clearing the way for dairies to use selected starters to ensure the regularity of their production from different milk suppliers. Despite the concern that this practice should lead to the exclusion of semi-industrial producers from the Presidium, this does not occur in reality. Differently, other Italian GI cheeses, e.g. Ragusano, another Sicilian cheese curded in a wooden vat (Licitra and Carpino 2014), and Fiore Sardo (Scintu and Piredda 2007), have forbidden the use of non-autochthonous starters, in order to enhance the link to the place of origin.

In Béarn, despite a programmatic ‘NO starters’ rule imposed by Slow Food, only a tiny minority of cheesemakers is taking the risk of avoiding selected starters. In fact, for decades, technical trainings and extension services have built a narrative on the use of starters to avoid cheese loss. Since its launch, the Presidium’s members discussed possible alternative practices to cope with the contemporary reduction of lactic flora. On a collective level, Slow Food has provided a multi-year technical assistance to perfect the self-production of starters specific to each mountain hut, and has supported peer-learning experiences with other Presidia cheesemakers. Moreover, Slow Food has promoted such experimental cheeses to specialized audiences, such as during a Workshop in 2016 Terra Madre-Salone del Gusto meant to introduce new practices, tastes, and values to consumers and journalists. On an individual basis, some producers are experimenting the self-production of starters, and practices such as back slopping, adding a yogurt, reducing the starters quantity, and limiting their use in certain periods. Two cheesemakers explained their choice: ‘I want to be close to my production’ or ‘I want to increase my cheese’s unique taste’. However, the Presidium members are not undertaking the change of production paradigm promoted by Slow Food. The goal of avoiding starters is not fully shared by local actors, divided by different appreciation of the risks and benefits of such a practice. In particular, several Presidium members question the positive impact on taste from reducing the quantity of starters compared to the risks of decreasing the average quality of cheese produced without starters. This tension was best exemplified by a public clash of visions at the 2016 Terra Madre-Salone del Gusto between Slow Food leaders and Presidium members that has undermined the continuation of the project itself.

3.6.5. Rennet

Pacentinu Ennese explicitly regulates the use of goat or lamb paste rennet, although certifying authorities do not control the origin of rennet. Several interviewed shepherds and cheesemakers opt for self-produced lamb rennet paste and, by doing so, choose to use enzymes different from other farms and to adapt their daily techniques to the changing coagulation power. Implicitly, they confirm studies that have demonstrated that farmstead rennet paste induces lipolysis and the development of a piquant taste during ripening (Scintu and Piredda 2007).

3.7. A discursive analysis beyond the market / aethical devide

Scholarship addressing the link between OFS and CB has often fallen in the dichotomy of reading OFS as market tools exploiting biocultural resources (Bowen and Zapata 2009;

Guthman 2004) or as alternative paradigms of food production and consumption based on ethical and ecological values (Morris and Kirwan 2011; Plieninger et al. 2017; Murdoch and Miele 1999; Murdoch 2000; Marsden and Smith 2005). For instance, Guthman (2004) considers that ethical labels, such as Fair Trade and organic, although meant to construct alternative supply chains, are rather façade, because '[e]thicality becomes a fetish itself in that the consumer is left simply to trust that the label speaks for itself.' Differently, Morris and Kirwan (2011) introduced the concept of 'ecological embeddedness' to qualify the positive attempts of alternative food networks to re-introduce nature into food production and consumption. These approaches have failed to reveal the consequences of naming a new reality, such as CB, and the changing gaps occurring between discourses and practices.

Mobilizing a discursive perspective (Montenegro DeWit 2016; Escobar 1998; Nazarea 2005), this paper investigated CB as a historical construct fitting into a network of actors and power, where the discourse on CB frame truths—in Foucault's words—that are vague and leave gaps of interpretation and application. Our case studies of origin cheese allow for a complex interpretation of OFS in which certain aspects can be understood as contributing to the commodification of nature, whereas others can be read as new forms of environmental governance. In other words, the goal of preserving CB declared by OFS is split according to contexts and actors. This allows us to discuss three main implications of such gaps in this section.

First, beyond the above-described diversity of codified practices on microbiodiversity, in reality specifications are selected or circumvented, and tacit knowledge is adapted. Numerous practices observed in the selected cases show a deep tacit understanding of the microbiological life of milk, cheese, and the materials used for cheesemaking, e.g. the cleaning procedures of wooden tools and maturing practices changing every day, for every cheese. These results confirm the stream of literature that provided ethnographic evidence of the abundant tacit knowledge underpinning the management of cheese microbiodiversity which escaped codification. As suggested by Bienabe et al. (2009) in their study of the Roiboss GI, knowledge of biodiversity is implicit in the many practices related to the environment, but not often explicitly recognized as an issue. Social scientists have pointed out the complexity of cheesemaking in regards to microbiodiversity. Paxson (2012) labels the ways in which US artisan cheesemakers deal with microbes as 'ecologies of practices': cheesemakers belonging to a post-pasteurian age are allied with microbes and cultivate them with specific 'ecologies of practice'. Similarly, Bowen and De Master (2014), noticed that although tacit knowledge on the microbiology of milk is not often articulated, there is a new wave of artisanal cheese cultures sharing this post-pasteurian ethos based on the understanding that microbes are ubiquitous and are responsible for taste, especially in raw milk. For instance, one of their interviewees argued that grass-based milk and no silage makes a flavor profile specific to the farm and its pastures, with a 'grassy note'. In the Italian Alps, Grasseni (2011) notices how cheesemakers cope with microbiodiversity on the basis of their environmental conditions and, for instance, sterilize tools in boiling whey in mountain huts without running water.

Next, OFS alone do not determine a change in local practices, but determine a shift toward new practices and issues, such as CB, on the basis of specifications and, most importantly,

in individual values and goals. The studied OFS contribute to making actors more aware of the link between their cheese and the environment since their specific resources need to be renovated. Indeed, the discourse on CB works as a framework guiding the choice of the practices negotiated collectively within the GI device, as Bienabe et al. (2009) already showed. We observed a common concern with a ‘disirable’ CB, including microbiodiversity, that is reflected in individual and codified collective practices, as also shown by Caron and Boisvert’s (2010) study on Salers and Saint-Necaire GI. This confirms that social norms or personal values might drive changes more effectively than ‘market-based solutions’ a panacea to the environmental crisis in the 80s and 90s (Dedeurwaerdere 2014:25). Moreover, new concerns on CB also renovate relationships with consumers. For instance, Slow Food Taste Workshops are conceived to train consumers to have a discriminating palate informed by Slow Food values, such as the importance of ‘tasting microbiodiversity’, although this could controversially lead to eliminating practices generating CB because they are judged as ‘bad’ (Lotti 2010; MacDonald 2013; West and Domingos 2012).

Then, our results show that gaps between OFS discourse and practice of CB are mainly due to diverging interests among stakeholders involved in different production systems. The connection between OFS and CB may be fragile on aspects that are hidden from consumers’ view and understanding because practices are selectively shown and communicated. For instance, our analysis of Ossau-Iraty showed the break in the microbiodiversity management produced by pasteurization is hidden from consumers’ understanding by the image of mountain-based cheesemaking techniques. Similarly, Presidia stakeholders’ strategies are controversially intertwined with CB values and practices. For instance, dairy producers of Piacentinu Ennese adopt the added value embedded in the Presidium to sell a variety of products including pasteurized cheese. Omissions and shortcuts hide discrepancies with the Slow Food ‘truth’, e.g. bad tastes/defaults associated with the paradigm of microbiodiversity management based on ‘natural cheesemaking’. Our results complement what other authors have already mentioned, i.e. that Slow Food’s strict and redemptive discourse on biodiversity may be appropriated by actors in search of new markets and audiences, such as supermarket chains (Fonte 2006; Grasseni 2011; MacDonald 2013). Moreover, we confirm the results of several authors who have already pointed out the risks of the GI system not being politicized enough by locals and thus failing to attach origin food to CB and influence local practices, becoming just a market tool (Durand and Fournier 2017; Vitrolles 2011; Fonte 2008).

Finally, although both GIs and SF have the potential to become policy devices for the management of CB, we identified governance as a main divergence between them: public institutions frame GIs, whereas a social movement drives Presidia projects in a transnational network. This difference determines the potential and limits of the two OFS.

Both OFS have a top-down approach in framing CB. We showed that EU policy texts justify GIs as a strategy to promote diverse agriculture in marginal areas, with an economic aim rooted on the cultural value CB. This is why May (2013:68) contends that public institutions use GIs as a ‘political marketing tool’ from which they benefit. Similarly, Slow Food’s Presidia—depending on public support—strengthen a strategy of regional

development based on gastronomy and tourism, and foster the export of ‘made in Italy’ specialties, by attaching and promoting a ‘moral superiority’ to ‘idealized representations’ of the ‘Italian way’ in food, as already suggested by MacDonald (2013)³⁰. Moreover, the governance of Slow Food is similar to a ‘pastoral power’ (Foucault 1979) where—as the Foucauldian ‘shepherd’—Slow Food has a specific knowledge of each ‘sheep’ (i.e. the Presidia members) and is responsible for their wellbeing, merits, and faults. In exchange for that, sheep follow the shepherd’s rules as an end in itself and with controversial appropriation. In this perspective, OFS discourses on CB can thus be understood as a ‘technology of governmentality’ (Bendix and Hafstein 2009:7; Foucault 1991), where the defining authority is the institution that is teaching from outside about how to tackle CB: providing scientific evidence, standards, and measurable goals. This implies that CB stops being a common good owned by the humankind and becomes something that States are entitled to manage (Aubertin et al 2007:132) or to outsource. In this sense, the process of transforming cultural and biological resources into CB and then into heritage is a political act, an act of government.³¹

However, our results also showed that Slow Food has a two-headed discourse. If—as just said—on one hand Slow Food fosters regional or national food heritage, on the other hand Slow Food also underlines the value of individual progressive choices that represent the niche of a niche, i.e. the rare artisanal cheesemakers that are experimenting with their often risky strategy to increase the uniqueness of their farmstead cheese, in a more complex ‘ecology of practice’, in Paxon’s (2012) words. Slow Food thus provides the justification and resonance for a change, an innovation in progress, also facing mainstream practices and regulations. In this sense, we can refer to the Slow Food’s discourse on CB as ‘technology of sovereignty’ (Hafstein and Skrydstrup 2017), providing public legitimization of tacit practices on starters, eventually also of defective cheeses, the promotion of collective or peer-to-peer learning, the creation of spaces for experimenting innovative practices, including spaces for producers’ resistance and contestation of the official Slow Food voice. To sum up, Slow Food transforms cheesemakers in political subjects entitled to make claims.

3.8. Concluding remarks

In this article, we explored the dilemma of whether a discourse on CB in OFS allows local communities to make a political claim and appropriate innovative environmental practices or, alternatively, it paves the way for market or political appropriation/capture.

³⁰ For instance, the president of Parmigiano Reggiano GI—the most traded Italian cheese in the world—presented the GI decennial experience of self-production of whey starters at the launch of the campaign for ‘natural cheese’ in Cheese 2017. The Parmigiano experience was presented to an international artisanal cheesemakers’ audience as a good generalizable practice without considering that Parmigiano is a hard-cooked cheese that makes the use of self-produced whey starters easily possible, but this does not apply to a worldwide diversity of cheese styles.

³¹ This echoes Latour’s (1987) connection between the management of microbes and the French national need of public discipline, by establishing hygiene as an issue of public safety (Grasseni 2017:15).

This paper reversed the question with a discursive approach and explored the performative power of discourse on CB in specific geographical and political contexts. This allows recognition of the—often hidden—market value given to food in OFS and contributes to the debate on the political potential of OFS, by seeing CB alternatively as technology of governability or sovereignty. A comparison based on three origin cheeses recognized as a Slow Food Presidium and/or a GI, in France and in Italy, illustrates differences and gaps that diverse discourses on CB open.

The findings in this paper demonstrate that both Slow Food and GI system are hybrid strategies, based on market tools blended with social values, and may include new elements over time, such as the concern on cheese microbiodiversity. On the one hand, GIs respond to and foster a change in social awareness, within a general frame of increasing environmental regulations, and appropriated preoccupations related to the loss of CB based on the transformation of cultural and natural resources, also micro, in heritage. This phenomenon is mirrored by collective and individual voluntary measures, sometimes diverging, e.g. on the use of raw milk. Differently, the Slow Food movement is more avanguardist and aims to lead a change of perception about issues related to CB among consumers and producers themselves, within an ‘alternative political ecology framework’ (Escobar 1998). Presidia—the most successful scheme of action for Slow Food in the field of the defense of CB—fix a moral goal based on aesthetic and ecological elements to be followed by the whole movement, e.g. a change of paradigm toward ‘natural cheesemaking’ practices avoiding starters.

However, our analysis of concrete experiences revealed common controversial issues, e.g. adoption by a limited number of actors or an exogenous knowledge leadership, generating gaps between institutional discourse on CB based on scientific knowledge with local stakeholders’ practice mainly based on their tacit knowledge and set of values. The vagueness of the institutional concept has the potential to be exploited by actors, i.e. the leaders of Slow Food, the GI governing bodies, individual farmers, public institutions, traders, and allow them to unify and direct action. Despite the limitations represented by possible disconnections between the OFS’s actors and the cultural and biological resources, we conclude that focusing on CB can offer local actors renovated awareness, political voice and empowerment, and connection with consumers.

Future research could further explore limits and potentials of states or social movements in the management of CB as a common (Ostrom 1990), in particular by looking at the generation of innovative knowledge and collective management practices in specific experiences.

CHAPTER 4

The paradox of reducing diversity to defend it

This chapter has been the basis for an article that will be submitted with the same title to *Sociologia Ruralis*, co-authored by by Mariagiulia Mariani, Claire Cerdan, and Iuri Peri. The authors concede that at least 80% of the work has been done by Mariagiulia Mariani.

Chapter 4

The paradox of reducing diversity to defend it

4.1. Introduction

Origin food schemes (OFS) are multiplying worldwide, and are helping shape a *new rurality* where food with a meaningful origin challenges the supremacy of ‘placeless’ food (Van Der Ploeg and Renting 2000). Producers and consumers hunger for tastes and traditions that are increasingly framed by OFS (Harvey et al. 2004). Geographical Indications (GIs) and Slow Food Presidia are responding to this trend of differentiating food according to origin (Callon et al. 2002; Tregear et al. 2007).

Both GIs and Presidia are based on local resources, including local production know-how and historical reputation, and are collectively managed. Beyond these similarities, their genesis and implications differ greatly. GIs are framed by government laws in the framework of the TRIPS agreement and are unlimited (in time) and inalienable intellectual collective rights to a product (Boisvert and Caron 2010). Presidia are on-going projects promoting endangered foods initiated by the Slow Food international consumers’ association (Siniscalchi 2013).

In the last two decades, GIs have been promoted as Intellectual Property (IP) rights as a way to protect local traditional knowledge and practices associated with cultural biodiversity (Downes and Laird 1999; Dutfield 2000). Slow Food Presidia are also intended to foster the preservation of biodiversity, considered as genetic resources, landscapes, and traditional practices (Siniscalchi 2013a; Peano et al. 2014).

But appearances can be deceiving. OFS answer two apparently opposing market needs (Callon et al. 2002). On one hand, origin products have to differ from conventional products and meet a new demand, originate from a specific place, and be the result of specific know-how (‘singularisation’). On the other hand, origin products have to be sufficiently standardised to be recognised on the marketplace and be comparable to other existing goods (‘standardising’). Yet, authors are increasingly questioning the effects of OFS on traditional knowledge and practices associated with biodiversity in Europe and, to an even greater extent, in countries where OFS have been applied as a development tool (Barham and Sylvander 2011; Mancini 2013).

Specifications—also known as product specifications or codes of practices—are preferred objects of study to reveal the consequences of OFS on food diversity because they establish local rules to use the scheme. The governance system managing such complex negotiations has been identified as a key element to forecast the effects of OFS (Barjolle and Sylvander 2002). The aim of this paper is to examine how local OFS governance systems influence the definition of specifications and the extent to which traditional diversity of practices is taken into account, and to explore the controversial standardisation effects of OFS.

Several authors have already given an account of the drawing-up of specifications of OFS (Bowen 2010; Rangnekar 2011), including Salers (Bérard et al. 2016), Comté (Bowen 2011), and Brocciu cheeses (de Sainte-Marie et al. 1995), suggesting that the gap between the immense tacit local knowledge underlying OFS and what is reported in the specifications reflects a judgement on the extent to which diversity is a successful or limiting factor for the collective initiative. Some authors also pointed to the undesirable outputs of codification, for instance that GIs may threaten biodiversity by overexploiting the same resource (Thévenod-Mottet 2010:208; Boisvert and Caron 2010; Romagny and Guyon 2009; Bowen and Zapata 2009). Although to a lesser extent, socio-anthropological studies have explored the consequences of the process of selection and making explicit a diverse range of practices in origin cheese initiatives (Faure 1998 and 1999 in cheeses from the northern Alps; Bérard and Marchenay 2006; de Sainte Marie et al. 1995 in Corsican cheese; Grasseni 2011 and 2014 in Italian alpine cheeses). However, there have been few little ethnographic accounts and explanations for the reduction in local knowledge and practices in OFS, almost no mention is made of the negative effects of Presidia on traditional practices (West and Domingos 2012; Lotti 2010) and, to our knowledge, no previous attempt has been made to compare GIs and Presidia as two worldwide examples of OFS.

To analyse the process and the effects of codification of knowledge in OFS, this paper builds on the vast literature analysing their governance and the configuration of power relations among the actors of the schemes, referred to as one of the pillars of the Alternative Food Networks (Goodman et al. 2012; Fonte 2008). This interest in governance systems is coupled with an ethnographic insight into the codification of knowledge in the reinvention of local food (Wilk 1995; Grasseni 2011 and 2014; Siniscalchi 2013a and 2013b).

Our analysis is empirically grounded on Sylvander's (1996) suggestion to analyse the conditions of emergence of standardised practices rather than to assess their final outcome, which depends on particular situations. The results of this research question the conditions that contribute to the emergence of standardised practices and knowledge in OFS. What is more, our results shed light on the capacity of producers and other stakeholders to influence the development of rules and the process of normalisation.

With these aims in mind, we begin by outlining the conceptual framework of our analysis and the role of specifications. This is followed by a brief description of our four case studies—artisan cheeses recognised as Presidia and/or GI—focusing on their governance system—how they were built, by whom, and why. Next, we analyse to what extent traditional practices are acknowledged in their specifications and we question the status of local knowledge in the process of drawing up specifications. Finally, we discuss the implications of specifications regarding local practices in the on-going market-driven normalisation of practices and tastes.

4.2. Specifications between power and knowledge

Murdoch et al. (2000) argued that emerging concerns about food quality complement the global trend towards standardisation and industrialisation. Within this shift from commodity consumption to differentiated markets, producers who claim the quality of their product (Marsden 2004) aim to differentiate their products around socially-constructed quality criteria, including territorial and social embeddedness (Goodman et al. 2013). To obtain a premium price, these differences have to be ‘acknowledged, highlighted and marketed’ (Ilbery et al. 2005:118). Thus, producers define voluntary and proactive standards to demonstrate in what way their foods differ from conventional commodities, and yet are better (Guthman 2007; Holloway et al. 2007; Brunori 2006).

Specifications are one way to construct such differences by objectifying, measuring, and communicating the differentiated quality attributes of the goods to consumers (Busch 2000; Vuylsteke et al. 2005; Bowen and De Master 2011), within a ‘quality convention’ (Boltanski and Thevenot 2006). In this way, the quality attributes are stabilised and reproduced over time. According to Ilbery et al. (2005), the *3Ps* (*product, place, process*) are the main elements in ‘constructing difference’ in the quality food market. In the case of OFS, such as GIs and Slow Food Presidia, socially-constructed quality criteria are based on notions of territory and provenance, and their 3Ps characterise the ‘quality link’ between the product and its geographical origin, which is associated with valued know-how and high quality (de Sainte Marie and Bérard 2005; Bérard and Marchenay 1996, 2000 and 2004). OFS specifications formally recognise the ‘quality link’ by describing the food, e.g. natural resources and practices, and defining the area of production (FAO 2010).

Shared specifications are a precondition for both GI and Presidia. Generally only collective entities are allowed to apply for a GI and their governing body freely negotiates the specifications, with no other requirements than health and safety standards. Scientists and institutions collaborate with producers in the codification process to consolidate and validate their choices (Bérard and Marchenay 2006). The French model has inspired the institutional framework (Barham 2003).

Aside from rare temporary exceptions³², Presidia can also only be created only by collective organisations under control of the Slow Food Foundation for Biodiversity (SFFB), i.e. the operational body which implements the Presidia project. The SFFB asks Presidia producers to include in the specifications the best practices that can be found in their territory and which respect the official guidelines for the improvement of the organoleptic, environmental, and social food quality, captured by the ‘Good, Clean, and Fair’ slogan³³ (Petrini 2007). For example, pasteurisation and use of silage are forbidden in Presidia cheeses (SFFB 2018).

Busch (2011) reported that once established, specifications appear to be anonymous, neutral, and self-evident. Their authors, motives, and the process of negotiation are hidden behind standards and rules. However, in practice, codification is rarely consensual (Bérard

³² See for instance the one producer Euskal Txerria pig Presidium (Lotti 2010).

³³ See Siniscalchi (2013a) for a critical account of the ‘Good, Clean and Fair’ concepts.

et al. 2016). Barjolle (2006) suggested that codification is linked with the complex rationale behind governance, i.e. members' motivation, process initiators, and the consistency of these motivations with contextual and commercial stakes. Governing bodies of GIs and Presidia are supported by local institutions in the controversial regulation of the qualification process and mediation among competing interests (Marescotti 2003). Scholars have demonstrated how the act of judgement at the origin of the specifications is 'a demonstration of power' by those who took the decisions (Renard and Loconto 2013:55).

Negotiations are underpinned by different forms of knowledge, i.e. ways of understanding the environment and doing things (Ray 1998). This recalls the debate over the epistemological implications of defining knowledge(s) that brought together economic (Cowan et al. 2000; Balconi et al. 2007), geographic (Whatmore 2009), and anthropologic concerns (Bicker et al. 2004) in rural development. Following the seminal work of Polanyi (1966), many authors recognise a divide between tacit or local, and explicit forms of knowledge (Wilburn 2014). This binary logic is behind the many definitions of knowledge that tend to establish dichotomies: 'local, indigenous, ecological, contextualised, traditional, practical, tacit' knowledge are opposed to 'not local, scientific, universal, standardised, modern, theoretical, codified' knowledge. Other authors point to the need to look at mutual interconnections (Ingold 2000; Geertz 2000; Escobar 2008). For instance, Ray (1998) suggests considering different actors involved in the re-discovery or even in the invention of rural local knowledge.

For the purpose of this article, we use Fonte's (2008) classification of the forms of knowledge used in local food networks in an approach that recognises the interaction and confrontation of different forms of knowledge. Fonte's (2008:18) characterises 'expert' knowledge as scientific and managerial knowledge, whilst differentiate 'local' knowledge as 'tacit', i.e. pre-discursively transmitted, and 'lay' knowledge, i.e. "a technical form of knowledge acquired through particular experiential circumstances and transmitted by specific 'local experts' in informal situations of learning."

4.3. Methods: four case studies of origin cheese

Our analysis is empirically grounded on four case studies: Chefchaouen goat cheese GI, Piacentinu Ennese GI and Presidium, Béarn mountain cheese Presidium, and Ossau-Iraty GI (Table 4.1). The case study method (Yin 1994; Stake 1995; Tellis et al. 1997) is used to reveal the peculiarities, logics, contradictions and unexpected outcomes of each case. We focused on artisan cheeses because the quality link between product and origin applies to multiple dimensions of the local environment, from landscape to micro-organisms. As suggested by Bérard and Marchenay (2006:113), '[t]he cheesemaking systems unite countless practices and forms of knowledge from all domains of living organisms'.

In order to analyse the models of GIs and Presidia in different geographical and legal contexts, the case studies are either a GI and/or a Presidium in three different countries, Morocco, Italy, and France. Morocco began recently and is rapidly implementing the GI system, with 48 GIs since 2010 (OMPIC 2018), and its exposure to the Slow Food

movement is also increasing, whereas in Italy and France, GIs play a major role in marketing and have a long history. France was the first country to frame their protection in 1935, and the Slow Food movement originated in Italy and Italian Presidia accounted for 265 of a total of 676 worldwide in 2016 (SFFB 2016).

Empirical evidence was collected by means of observation, and informal and semi-structured interviews with actors throughout the supply chain, including producers, consumers, institutions, and retailers conducted between March 2014 and September 2016. Questions focused on the creation of the OFS, the actors' motives, the codification processes, and changes in practices.

The ethnographic information was complemented by analysis of public documents, individual and collective websites, and in particular by detailed analysis of the specifications (Table 4.1). A Presidium and a GI have been recognised in the case of Piacentinu Ennese and the two share the same specifications. In the case of the Béarn mountain cheese Presidium, Slow Food added the goal of stopping using starters to the requirements of the brand '*Estive*'³⁴, without formalising other specifications.

Table 4.1: Case studies and their specifications

	<i>Chefchaouen goat cheese</i>	<i>Piacentinu Ennese</i>	<i>Béarn mountain cheese</i>	<i>Ossau-Iraty</i>
<i>Place</i>	Chefchaouen province, Pays Jbala/Rif, Morocco	Southern Enna province, inner Sicily, Italy	Aspe, Ossau, and Barétous valleys, Pyrenees, France	Béarn and Basque Country, Pyrenees, France
<i>Quality schemes</i>	GI in 2011 – not operating	GI in 2011 Presidium in 2013	Presidium in 2008	GI in 1980
<i>Demanders</i>	ANOC (National Association of Sheep and Goat Breeders)	Consorzio di Tutela del Piacentinu Ennese DOP	AET3V (Association of Transhumant Breeders of 3 Valleys)	<i>Syndicat de défense du fromage d'appellation d'origine contrôlée Ossau-Iraty</i>
<i>Pages</i>	17	6	2	11
<i>Pages Structure</i>	-denomination -area delimitation - proof of origin -quality/link with origin -product description -process of production -certification -labelling -traceability -control plan	-denomination -product description -area delimitation -origin proof -production process -quality/link with origin -certification -labelling -processed products	-denomination -area delimitation - production process -self-certification	-denomination -product description -area delimitation - proof of origin - production process -quality/link with origin -certification -labelling -traceability -control plan

³⁴ '*Estive*' is a registered brand (No. 083567026) at the French Institute for Intellectual Property owned by the AET3V.

4.4. The emergence of specifications: stakeholders, motivations, and governance

To explore to what extent OFS take local knowledge and traditional practices into account, we compared the emergence of the four schemes and the drawing-up of the specifications by considering the following factors (Table 4.2):

- Which actors were directly involved in the system?
- What was their motivation?
- How are they coordinated and how is decision-making power shared?

4.4.1. Chefchaouen goat cheese or the top down invention of a cheese

Chefchaouen goat cheese is a fresh cheese manufactured in the mountain town of Chefchaouen, situated in the Jabala area (northern Morocco), where goats graze natural pastures, rich in aromatic plants (Chentouf et al. 2014). Unlike the rest of the country where cheese consumption and production is recent, cheesemaking in northern Morocco dates from the Al-Andalus period, X-XIII century (Ibn Halsun 1996). Today, the region area has a reputation for the production and consumption of fresh goat and cow cheese.

Since 1992, the Ajbane Chefchaouen dairy processes the milk of Alpine and crossbreeds goats thanks to the support of international stakeholders, e.g. the Belgian and French Embassies, and cheese technicians. Milk is collected at a higher price from 40 shepherds who breed between 10 and 100 goats in the forests surrounding Chefchaouen (Authors' interviews 2015). First, milk is analysed and pasteurised, and then, starter cultures and synthetic animal rennet are added to produce a French-style cheese based on lactic coagulation. Cheese is sold under vacuum in local shops and tourist restaurants in Chefchaouen, and in shops, including supermarkets, and restaurants in the main northern Morocco cities.

A GI was authorised for the Chefchaouen goat cheese in 2011. However, since the full traceability of the cheesemaking is not guaranteed, the scheme is not yet operational. The only producer is the Ajbane Chefchaouen dairy, managed by the National Association of Sheep and Goat Breeders (French acronym ANOC), under the administrative supervision of the Ministry of Agriculture. ANOC is the collective body which applied for the GI and defined the specifications in direct collaboration with the Ministry of Agriculture, Origin and Quality Labelled Food Commission, thereby excluding local cheese producers from the negotiating table (Authors' interviews 2015).

Since 2008, the Kingdom of Morocco has been the initial player in the initiation of GIs: the 25-06 law provides the legal framework and the second pillar of the national agricultural plan (Green Morocco Plan, GMP) devotes human and economic resources to their strategic development (MAPM 2010). Specifically, the GMP is intended to strengthen local production systems by linking local private and public entities in the so-called 'aggregation' strategy (Akesbi 2012).

Chefchaouen goat cheese is one of the local products (*produits de terroir*) the GMP expects to promote the economic development of marginal areas—mountains in this case—while preserving the cultural and environmental heritage. ANOC is the 'aggregator'

of local small and medium farmers in a process of agricultural modernisation in Chefchaouen, as part of the national strategy on quality labelling. However, the markedly top-down approach of the initiative is the subject of local criticism, as ANOC is perceived as a national bureaucratic body usurping local resources. Moreover, the institutional commitment to develop OFS does not appear to have been appropriated by local actors. Shepherds, the Ajbane Chefchaouen's staff, and local cooks are not really aware of the GI initiative. In the absence of regional awareness of the potential of the GI tool, the Kingdom remains an important actor in the OFS trajectory.

4.4.2. Piacentinu Ennese, from oblivion to the best tables

Piacentinu Ennese is an ancient sheep cheese flavoured with pepper and saffron, probably dating back to the 12th century (OESAAS 2007). After a procedure that lasted several years, the GI was recognised in 2011—it was the 1000th PDO in Europe—and the Presidium in 2013. Cheese production and maturing take place in part of the Enna province, in the centre of Sicily. In 2015, only seven cheesemakers, including three dairies, produced 35 metric tons of cheese per year (Authors interview 2015; SFFB 2016).

Twenty years ago, a few cheesemakers started the qualification process of Piacentinu Ennese to transform this cheese, which had almost disappeared and was basically unknown cheese into a profitable fashionable product. The GI and Slow Food recognitions were intended to enable the cheese to reach more lucrative market niches beyond the Sicilian borders. The department of agriculture of the province of Enna helped structure the emergent value chain and raised European funds. Valuing this peculiar cheese appeared to be a strategy for better remunerating local sheep breeders located in an economically marginal region with a high potential for specialty food (Authors' interviews 2014).

The Consorzio di Tutela del Piacentinu Ennese DOP is the GI governing body, headed by the producers—including the three dairies—who launched the scheme. The Consorzio defined the specifications which were subsequently validated by Slow Food and used within the Presidium framework, but not without controversies. First, political disputes led local institutions to support a controversial definition of the production area. Then, members criticised the Consorzio for three main reasons (Authors' interviews 2015). (i) The specifications do not reflect the needs of several producers, e.g. the specifications forbid the sale of cheeses in portions to guarantee traceability, but which limits marketing possibilities. (ii) The Consorzio is not succeeding in creating a unified group and taking advantage of national promotion opportunities. (iii) Slow Food doubts the GI control plan and suspects two producers of fraud, and consequently does not recognise them in the Presidium. On their side, the producers consider the Slow Food selection process to lack clarity and even to be arbitrary. (iv) The Consorzio only includes cheesemakers, these people are rarely also shepherds.

Paradoxically, the director of the Enna Sheep Breeders Association was one of the driving forces of the qualification process and connected milk producers with dairies and institutions. However, the power of local dairies increased within the Consorzio to the detriment of milk suppliers who were progressively excluded from the beginning of both OFS. Consequently, no policy has targeted an increase in the price of milk in the GI chain.

Slow Food did not express any opinion on this point, although it is currently supporting a redefinition of the Consorzio legal framework and specifications.

4.4.3. Béarn mountain cheese, or the real Ossau-Iraty?

In Béarn (French Pyrenees), Slow Food started a Presidium to promote the cheese produced in the high mountains and rediscover cheesemaking practices that avoid selected starter cultures. At the end of June, animals, mainly sheep, are moved from the valleys to pastures over 1,500 m a.s.l., which are rich in aromatic herbs that confer special flavours to the milk. Shepherds make a semi-hard cheese (*pâte pressée non cuite*) in simple but up to standard mountain huts (Corouge 2002). In 2007-2008, the local Slow Food enthusiasts and activists lobbied the SFFB to establish a Presidium for these unique transhumant shepherds' cheeses.

In 1990, shepherds in the three Béarn valleys created an association, the Three Valleys Transhumant Breeders Association (French acronym AET3V), which today has 88 members, of which 79 transhume and 51 make cheese in the high mountain summer pastures (Authors' interviews 2016). AET3V is supported by the Haut-Béarn Heritage Institution (French acronym IPHB) whose aim is to reconcile agro-pastoral activity with environmental concerns e.g. the defence of bears and the coexistence with the Pyrenees National Parc. The AET3V is the largest and oldest association of shepherds and cheesemakers in Béarn, but 40 shepherds produce mountain cheese and around 150 farmers move their sheep to mountain pastures outside the AET3V (Authors' interview 2016). Although all 91 cheesemakers on the Béarn mountains are formally entitled to join the Presidium, in practice only the AET3V members belong to the Slow Food network.

AET3V considers Slow Food a priority partner to increase gastronomic appreciation and added value of high-mountain cheese by enhancing their marketing strategy on direct sale and long distance markets, namely Paris. However, another OFS is potentially available to Béarn shepherds: the Ossau-Iraty GI. This large scale and diverse GI covers Béarn and Basque Country and brings together almost 2,000 businesses (Ossau-Iraty 2015). This GI includes different cheesemaking styles (e.g. size, shape, maturing) corresponding to the different Basque and Béarn practices, and includes stakeholders with diverging interests (transhumant shepherds, valley farmers who sell milk, and industrial dairies).

Some Presidium promoters are also the GI leaders, but only 15 AET3V shepherds joined the GI because the two OFS development strategies diverge. Indeed, the Presidium only involves shepherds with similar cheese traditions and concerns a small seasonal production searching for a premium price. Consequently, many Presidium producers oppose the GI initiative because they consider that it damages shepherds and small quality cheesemakers by associating images of traditional production with ordinary cheese.

The Ossau-Iraty GI is largely dominated by industrial dairy groups, e.g. Lactalis (formerly Besnier) and Bongrain, whose decision-making centres are located outside the GI area. These companies played a central role in the definition of the GI governance system and specifications (Moity-Maïzi and Amilien 2007). In fact, like for Brocciu (de Sainte Marie et al. 1995), the main reason for starting a GI process was to quickly reconvert local milk from the production of Roquefort—a GI cheese from the Aveyron Region—to a local

cheese to be sold with added value, because in 1980, the industrial Roquefort cheese processors unexpectedly left the region. Since then, the governing body of the GI, i.e. the *Syndicat de défense du fromage d'appellation d'origine contrôlée Ossau-Iraty*, is composed of three groups, (*familles*): (i) milk deliverers (1,733), (ii) on-farm producers, (*fermiers*) (130), and (iii) cooperatives or dairies (10). Maturers (*Affineurs*) (22) are divided between on-farm producers and dairies (INAO 2016). Farm production, which coexists beside industrial producers with no significant difference in price, accounts for only 10% of the total, although it is on the increase and is currently produced by 40% of local farmers, mainly located in the Basque Country (Ossau-Iraty 2015). The Presidency rotates every two years among the three groups, but the GI governance system is based on the share of production and, as a result, the farmers have little say in the matter unless they establish political networks, which in fact they have done. In the period of their Presidency, on-farm producers won several battles to be entitled to a distinguished character (see following section).

Table 4.2: Specifications are defined through negotiations among a variety of actors and motivations

	<i>Chefchaouen goat cheese</i>	<i>Piacentimu Ennese</i>	<i>Béarn mountain cheese</i>	<i>Ossau-Iraty</i>
<i>Promoters</i>	State ANOC	A few cheese makers Local institutions	Shepherds (AET3V) Slow Food	3 dairies
<i>Motivation</i>	National rural development plan Valorising a product	Market share Social recognition EU aids for traditional food	Price increase Social recognition	Differentiating a local product to replace Roquefort
<i>Collective action</i>	Little appropriation by local actors Exclusion of other local cheesemakers	Exclusion of milk suppliers Dairies vs. farmers Selection of Presidia members not clear Decision-making difficult	Same interests and vision Inclusion but little participation Opposition to PDO	Initial exclusion of <i>fermiers</i> Conflictual rotating governance Lactalis dairy dominates
<i>Code of practice</i>	Modern and safe cheese: Alpine goats, pasteurised milk, lactic ferments, synthetic rennet, French recipe Exclusion of traditional cheesemaking methods	Exclusive production area: the southern part of Enna province Territorial approach Highly demanding specifications with traditional practices: wooden tools, farm rennet, raw milk	Little regulation: mountain pasture, daily manufacture, mixed milk cheese allowed No control over use of ferment	Standardised cheese to be easily produced and marketed 2015: logo 'on-farm', 'dairy', 'Estive' to differentiate practices

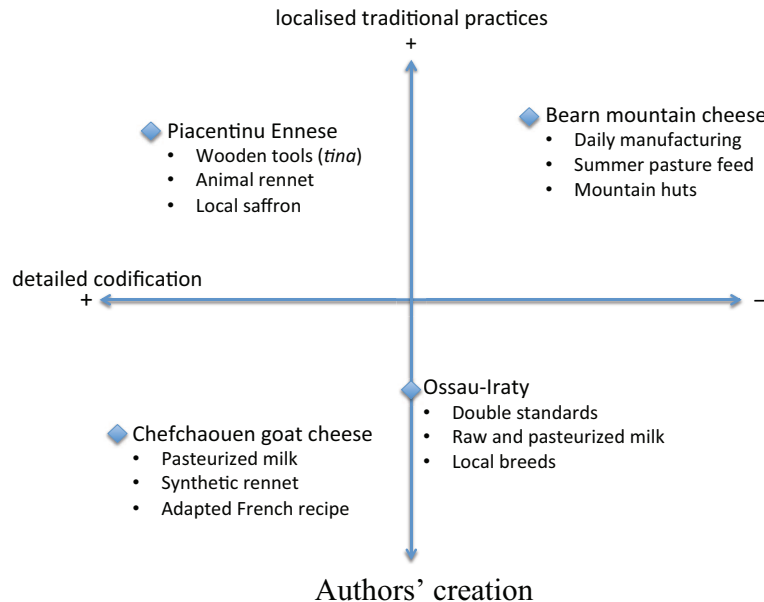
Author's creation

4.5. At the heart of the code: fixing (traditional) practices

After detailing the emergence of the OFS in each case study, we now assess the content of their specifications according to the *3Ps product, place, process* (Ilbery et al. 2005). Such categories allow us to show to what extent traditional practices were included in the specifications, as outlined in Figure 1, and how the selection and codification took place.

- How is quality understood and negotiated?
- How are rules codified?

Figure 4.1: Traditional practices in specifications with differing requirements



4.5.1. Product

Specifications extensively describe the *product*, including physical, organoleptic, and chemical features to be distinguished on the market. In the case of Piacentinu Ennese, the first distinction is visual: saffron should be detectable from the simple observation of the rind. The rind must also show clear traces of the traditional rush basket (*canestro di giunco*) in which the fresh coagulated cheese is placed. The Béarn mountain cheese is not even described in terms of ‘intrinsic qualities’ (Esejel 2008), but visually identified only by a ‘*Estive/Mountain*’ logo showing a mountain and an edelweiss on the surface of the cheese suggesting its natural origin. In the case of the Ossau-Iraty, the specifications address complex notions of food identity and heritage, and recommend the use of two different size moulds (2-3 kg or 4-5 kg), which result in different ripening and taste characteristics: 4-5 kg cheeses are ripened for a shorter period in a humid cave, in order to have a creamy texture, whereas 2-3 kg cheeses are ripened for a longer period in a dry cave, so that the rind is grey in colour and the curd is firm. These specifications correspond to the traditional cheesemaking styles of the whole region, from east (Béarn) to west (Basque Country), from the Ossau peak to the Iraty valley, symbolically unified by the name Ossau-Iraty. A GI technician pointed out:

For many years, the Ossau-Iraty tasting committee evaluated Béarn and Basque, on-farm and dairy cheeses together, but we finally decided to organise four separate tasting sections: it was impossible to judge cheeses that are so different; it was always a war among the Basque and Béarn jury members. (Authors’ interviews 2007)

Very differently, in the case of Chefchaouen goat cheese, the product description shows

compliance with modern standards of hygiene and contrasts traditional practices: cheese must be wrapped in food paper and then put under vacuum, and artisanal moulds made with dwarf palm leaves (*doum* in Arabic, *palmier nain* in French) are avoided due to hygiene concerns.

4.5.2. Place

The definition of the *place*, i.e. the area of production, is the second pillar of specifications. Our case studies show that the area delimitation is a critical point in the drawing-up of specifications and usually corresponds to pedoclimatic and historical concerns, coupled with administrative limits and/or economic concerns. For instance, Piacentinu Ennese production and maturing must take place between 400 and 800 m within the borders of nine villages. Political pressure led to limit the area to the southern province of Enna, resulting in the exclusion of nearby producers that claim the access to this OFS, despite controversial historical evidences. A professor of the University of Catania explained:

Historical evidences of the practice of adding saffron to milk refer to southern Enna villages. But paradoxically, growing saffron is historically rooted in the northern province which provides higher quality saffron. The delimitation of the area of production of Piacentinu was more based on political reasons than on scientific studies. (Authors' interview 2015)

The spatial delimitation of the Béarn Presidium is also strict, but the main criterion for delimitation is pedoclimatic and not historical. The cheese has to be produced in pastoral areas managed collectively in Béarn high-mountains (up to 2,400 metres). The geographical area of the Ossau-Iraty is considerably wider (650,000 hectares), including almost the totality of the Béarn and Basque Country, i.e. the Pyrénées-Atlantiques department. In that area, regular rainfalls allow varied and rich grassland in the foothills. However, the area of production has been modified twice after 1980. Initially, the area covered the whole department of Pyrénées-Atlantiques and three municipalities in the department of Hautes-Pyrénées, to include the majority of the dairy businesses. Then, in 2001, on-farm producers succeeded to exclude the plains with intensive farming system. Finally in 2016, the area was slightly enlarged to include the 800 ha collective land around the county town of Pau, called Pont-Long, as a local geographer explained:

During one year I joined the INAO commission including local experts and researchers to provide evidences that back in time, in winter, Ossau Valley farmers were entitled to collectively use the Pont-Long. (Authors interview 2015)

Specifications of the Chefchaouen goat cheese are totally based on political strategies. Despite the long lasting pastoral activity, Chefchaouen does not hold a historical reputation for cheesemaking. The delimitation corresponds to the administrative area of the former province of Chefchaouen, including the six municipalities of the Mokrisset Cercle that since 2009 belong to the newly created province of Ouezzane. In 2015, ANOC has started redefining the area of production to include the area of Beni Ahmed (Tetouan province), where ANOC is conducting an experimental program for implementing goat milk production and collection.



Picture 4.1 and 4.2: Cleaning procedures with nettle (Béarn, Ossau Valley)

Photo credit: Mariani, M.



Picture 4.3 and 4.4: Traditional rush baskets used for Piacentinu Ennese and ricotta (Enna)

Photo credit: Mariani, M.

4.5.3. Process

The longer section of specifications describes the *process* of production, to establish and characterise the origin-food link, i.e. the link between product, environment, and local history. The list of the allowed or forbidden practices relates to different elements of the production process.

- Breeds

Raw milk for Piacentinu Ennese comes from Sicilian breeds, i.e. Comisana, Pinzirita, Valle del Belice, and their crossbreeds. Whilst Ossau-Iraty specifies the use of local sheep breeds, i.e. Manech tête noire, Manech tête rousse, and Basco-béarnaise, the Béarn Presidium does not specify breeds, because it implicitly considers that only local breeds are apt to climb and take advantage of mountain pastures. The Presidium also includes the manufacture of mixed cow, goat, and sheep cheese—this latter being the most ancient local cheese-style. Chefchaouen GI specifications recognise that crossbreeds dominate the local goat population and produce quality milk richer in casein and fat (45-65% DM), but explicitly welcome genetic improvement plans to implement milk production with imported pure breeds (Alpine, Sanean, Mourciana, Malaguina).

- Feed

In the Béarn Presidium, animals graze in rich mountain pastures and only simple grains and mineral inputs are allowed. The specifications of Ossau-Iraty are less demanding but more prescriptive; they require at least eight month grazing per year—not specifically on mountains—, a minimum daily and annual feed sourced from the area—with limited fertilisation and banning of GMOs and, since 1 February 2018, silage—, and an annual and daily maximum use of concentrates. The specifications of Chefchaouen goat cheese and Piacentinu Ennese repeatedly mention the traditional extensive and semi-extensive farming practices; pastures are supposed to make the cheese uniqueness, integrated with locally produced cereals and leguminous plants. However, specifications are descriptive and not prescriptive³⁵.

- Time and production volume

Specifications of Piacentinu Ennese do not limit the production season, although all the producers stop the production in summertime, when pastures dry. Within the Béarn Presidium, cheesemaking is daily and exclusively done from June to September. Also Ossau-Iraty fixes a seasonality of production: milking must not exceed 265 days per year and is prohibited in September and October. Only the Ossau-Iraty specifications limit the average of milk produced, which does not exceed 300 litres per ewe per year. In Chefchaouen, the demand of cheese increases in summertime when the milk production is lower³⁶, but seasonality is not mentioned in specifications.

- Production techniques

The process of production of Piacentinu Ennese is highly specified, but with unquantifiable

³⁵ Only feed requirements are traceability, and prohibition of growth hormones and animal flours in Chefchaouen, and the prohibition of silage and GMOs in Piacentinu Ennese.

³⁶ The Ajbane Chefchaouen subsidises milk production outside the lactation period peak to cope with this problem.

standards. For instance, the milk from one or two consecutive milkings can be refrigerated for maximum 24 hours and then, once warmed again, it is put in a wooden content (*tina*) and saffron is added in order to get a ‘beautiful bright yellow colour’. Maximum five grams of saffron grown in the production area are allowed in 100 litres of milk, but a minimum amount is not fixed. Rennet is locally sourced from lambs and young goats, and the quantity depends on its strength. The ‘right texture’ is evaluated ‘by touching’ and ‘steering’ at the limpidity of the whey. All along the production process, the making of Piacentinu requires the use of traditional materials: *tina* (wooden content), *rotula* (wooden stick used to break the curd), *tavoliere* (wooden table), or *canestro di giunco* (rush basket). The traditionally longer ripening is reduced at minimum 60 days. These specifications result from long-lasting discussions between farmers, institutions, and research. In particular the Dairy Research Consortium, CoRFiLaC, conducted several studies to differentiate organoleptic profiles of Piacentinu Ennese according to diverse production techniques (Horne et al. 2005; Licitra et al. 2007; Carpino et al. 2008), supporting the request for derogations to the 92/46/EEC regulation on the health and safety rules for milk-based products obtained for Sicilian Traditional Cheeses, e.g. the use of wooden tools.

In Béarn, the only requirement concerns the environment of production: milking and cheesemaking must be carried out in the traditional mountain huts (*cabane*, *cayolar*, or *cuyala*) that received a health and safety control. Moreover, the Presidium aims to avoid selected cultures that, since the 80s, technicians spread to obtain homogeneous and regular cheeses whilst limiting the proliferation of undesirable bacteria and related cheese defects. As the AET3V coordinator explained:

Despite numbers of experiments conducted with Slow Food Italian experts, results are not convenient. Shepherds hardly master temperatures and times in mountain huts, where you cannot measure acidity like in a farm, but some of them are still experimenting. (Authors’ interview 2013)

Slow Food opposes technicians’ expert knowledge with a competing expert knowledge, whilst shepherds are building new contextual lay knowledge. Another confrontation of knowledge takes place in the current debate on the electrification of mountain huts. In this case, Slow Food opposes shepherds’ request of the electrification because this would potentially allow to refrigerate milk to less than 4 °C and postpone cheesemaking, resulting in a change of taste. Paradoxically, Slow Food’s expert knowledge is used to defend shepherds’ lay knowledge even against their will.

Specifications of Ossau-Iraty make a clear distinction between practices allowed in on-farm and in dairy productions. The traditional use of nettle to filter milk is authorised on-farm. Instead, dairy production allows for industrial techniques, i.e. pasteurisation and lactose removal and, only until 2014, the use of polyvinyl acetate to cure the rind. Quantifiable standards are specified in all the production styles, e.g. milk curdles between 28 and 35 °C.

Ossau-Iraty current specifications are the result of long-lasting negotiations. Initially, extra-local industrials designed a cheese easy to produce and market. Afterwards on-farm producers obtained the limitation of some industrial techniques and the recognition of their specificity. Since 2015, different logos are available to on-farm and dairy producers,

although hardly getting to the consumers' eye. Confrontations took the shape of a battle of knowledge. For instance, on-farm producers lobbied to recognise local knowledge against usual HACCP standards for authorizing the use of nettle. Alternatively, scientific knowledge dominated debates on both on-farm producers and dairy sides about lactose removal, as a local cheese technician told us:

There was a big battle into the Ossau-Iraty a few years ago. Industrials paid for studies supporting lactose removal. Results were absurd. On-farm producers had to repay them in like kind and pay for new studies that proved the opposite. (Authors' interview 2015)

The specifications of the Chefchaouen goat cheese underline the hygiene standards that milk suppliers must follow in milking and delivery. Cheesemaking practices couple semi-industrial procedures and highly demanding artisan tasks. On one hand, pasteurisation or thermisation (60 °C), stainless steel curdling basins and synthetic animal rennet are required, whilst the use of natural rennet (i.e. dried goat or lamb stomach) and the traditional practice of preserving cheese in brine are forbidden. On the other hand, manual moulding with a big spoon and manual packaging are compulsory.

ANOC drew-up the GI specifications discarding local knowledge, and consequently local producers of traditional cheese, and building on the cheesemaking procedures developed by the Ajbane Chefchaouen. Such standards are an adaptation of French cheesemaking to the specificities of the Ajbane Chefchaouen dairy. Since the 1990s, ANOC technicians repeatedly trained in France, within cooperation programmes, while French and Belgian cheese technicians have provided extension in Chefchaouen yearly, to perfect the cheese recipe. This imported expert knowledge is coupled with health and safety concerns, framed by the French dairy HACCP procedures. The Labelled Food Commission opposed the initial specifications as descriptive of the process of production of one dairy, but only asked for minor modifications without undermining the monopoly of the GI by ANOC.

4.6. Undesired effects of specifications on food diversity

After showing how different OFS specifications take local knowledge related to all the steps of production into account—from the management of pastures to the management of the bacterial flora—, we now assess the effects of specifications on the allowed practices and tastes, while the management of cultural biodiversity has been explored in detail in Chapter 3.

The codification of practices resulted into a reduction of tastes that is functional to market demand in all our case studies, including the ones that are most keen to value localised traditional practices, such as the Piacentinu Ennese and Béarn mountain cheese Presidia. For instance, our interviews suggested that market demand shapes the current Piacentinu Ennese as highly different from the one that local producers and consumers remember. Specifications include several practices that tend to root the cheese into tradition and locality, and enhance the typicality of taste, e.g. the use of traditional wooden cheesemaking materials and locally grown saffron. Maturing practices, instead, are defined to meet the demand of modern consumers who ask for young and mild cheese. Piacentinu Ennese is sold as it has the 60 days of required minimum maturing although tastes are

more complex after four-month maturing (Horne et al. 2005). Considered by Slow Food the less ‘Sicilian’ of traditional Sicilian cheeses, Piacentinu Ennese has potential to overpass the island borders: the saltiness is reduced by the sweet effect of saffron, and the senses, starting from sight and smell, are stimulated. When sale is postponed, cheese is put under-vacuum to stop the maturing process and prevent loss of weight and development of more complex tastes.

A reduction of practices is evident also in the case of the Béarn mountain cheese Presidium whose concise specifications recognise exclusively cheese made in up to standards mountain-huts. Its qualification process started in 1994, when the ancient traditional mountain huts were declared out of norms with regard to the 92/46/EEC regulation. National authorities gave a four-year derogation to sell on-farm cheeses made in out-of-norms workshops; since 1998, local authorities financed the works to put mountain workshops up to standards and the ‘*Estive/Mountain*’ logo was used to recognise the cheese produced and sold according to such derogation in support of mountain cheesemaking. Shepherds kept such logo also afterwards to differentiate the mountain production from the valley one, supported also by the communication channels opened by Slow Food.

This normalization process led to deep changes in cheesemaking tools and practices: wooden tools were forbidden, copper cauldron and wooden fire disappeared, hygiene in the milking increased as well as the consequent need to add starter cultures. The organoleptic features of mountain cheese dramatically changed to adapt to new regulatory and market contexts. The Slow Food’s fight against the use of starter cultures responsible for taste homologation seems to be too distant from market demand, as a Presidium cheesemaker commented:

We would loose many cheeses. Consumers don't accept defective cheeses. And anyway, it is more demanding to work with my own ferments: I have to take care of all the steps, with hygiene but not too much, and cheese maturing is more difficult: every cheese is different and you have to treat it differently. (Authors’ interview 2016)

Overall, local cheese lovers describe the range of tastes of the Presidium cheese as decreased: the best and the worst cheeses disappeared. The wide variety of tastes accepted in old times, and related diverse consumption habits, were reduced to meet the demand framed by contemporary mass-consumption.

In Ossau-Iraty, although labour demanding on-farm production does not seem to be cannibalised by dairy production with minor costs of production, the distance between the organoleptic qualities of both cheese styles tend to reduce. Special ‘authorities’ justify such reduction of tastes hiding its market-driven implications. A ‘taste rule’ is imposed in Ossau-Iraty as in the other French GI cheeses: GI cheese must comply with a set of organoleptic parameters that are evaluated by official trained tasting commissions. These tasting panels are intended to discard products that are too distant from the commonly accepted ones, reducing the range of diverse tastes. An on-farm cheesemaker who received non-conformity notifications told us:

The best cheese mongers in Paris appreciate my cheese, but the Ossau-Iraty tasting panel gave me already two warnings for not conformity. My cheese does not comply with the regular flat

taste they expect. They say it is too animal. But cheese here was more animal than the one I make! (Authors' interview 2015)

The market in which the studied OFS fit, although devoted to differentiated quality food, is internally segmented. Mass-consumption of Ossau-Iraty is validated by the recognised 'taste authority' of the GI tasting panels. Differently, other authorities such as cheese-mongers, or specialized revues, or Slow Food itself validate choices of a consumers' niche in search for differentiated tastes.

In the case of Chefchaouen, the establishment of the GI on a modern and profitable value chain mirrors a deep change (and reduction) in the cheese-related production, distribution, and consumption practices. Traditionally Chefchaouen's shepherds were accustomed to transform their milk into butter, *leben*, i.e. fermented milk, or to sell it fresh door-to-door in Chefchaouen *medina*, but we recorded numbers of cheesemaking practices moving towards the nearby provinces of Ouezzan and Tetouan. A large variety of curdling methods was used in the past: fig milk, thistle, goat or lamb rennet. Another widespread method was lactic coagulation without rennet addition, in numbers of variations, resulting in an acidic and less compact cheese. Cheese was eaten fresh or preserved in brine, very salty and/or dried.

The Ajbane Chefchaouen dairy decided to move away from these habits and manufacture a cheese that satisfies a growing niche demand for a 'fresh', 'white', 'spreadable', 'mild', 'safe', 'unsalted', 'goat and thus healthy' cheese (recurring words in Authors' interviews 2015; ANOC 2014). Specifications require thus practices that meet such result: pasteurising milk, replacing the varied local bacterial flora with selected cultures, a long lactic coagulation at controlled temperature (22 °C) complemented by commercial animal rennet that, paradoxically, is not sold in this northern Moroccan area. Numbers of types of cheese and tastes are hence excluded from the newly established OFS.

4.7. Discussion: (de)limiting diversity

Authors have suggested that OFS actors define boundaries of the 3P, *product*, *place*, and *process* (Ilbery et al. 2005), through a process that involves the deconstruction and co-construction of varying understandings of heritage, locality, and quality (Sanz-Cañada and Muchnick 2016; de Sainte Marie et al. 1995; Grasseni 2007; Poméon and Fournier 2010). Fonte (2008:214) describes the construction of specifications as 'a process of collection, analysis and selection from the available stock of local traditional knowledge and its integration with expert knowledge'. These selection and codification of practices influence the overall effects of the OFS (Bowen and Zapata 2009; Mancini 2013) and 'the projects of protection and redistribution that these labels attempt' (Guthman 2007:468).

Our results confirm these claims, but emphasise that specifications are not an easy transcription of producers' local lay knowledge. Confrontations of different strategic economic models underpinned by plural forms of knowledge challenge the primacy of local knowledge and determine its selection and delimitation within 'global structures of common difference' (Wilk 1995). Wilk coined this concept to explain the circulation and

competition of values, contending that Belizeans reacted to the integration into global/international markets by building a local/national distinctiveness and diversity articulated within a limited frame. We witnessed the same dynamics in the drawing-up of specifications that build, mirror, and foster the double ‘singularisation’ and ‘standardizing’ effect underpinning the qualification processes of OFS (Callon et al. 2002). Whereas the ‘singularisation’ effect of OFS has been highly described (Sanz-Cañada and Mucknick 2016), our results provide ethnographic evidence of the standardizing effects and suggest that the reduction of admissible practices and tastes results from the definition of the following delimitations or boundaries.

4.7.1. Process (de)limitation

Different understandings of the desired quality have driven the selection of practices allowed in the *process* of production of our case studies, leading to discard practices and variants that oppose or weaken the dominant quality criterion. For instance, quality is alternatively understood as linked to tradition (Piacentinu Ennese), uniqueness (Béarn mountain cheese), or safety (Chefchaouen goat cheese). A double standard that reflects a complementary search for authenticity (on-farm production) and regularity (dairy production) is authorised in Ossau-Iraty GI. Consistent to our findings, Rangnekar (2011) recalls that the GI system implies a relative homogeneity of the good with protected name and gives an account of how, in Goa, the Feni GI has framed the diversity of distilling practices and ‘stabilised’ products, with the introduction of new materials and techniques going along with new social and economic relations of distilling.

One reason for this standardization of practices is that contemporary origin food often implies industrial production techniques and standards, overpassing the production of handcrafted ‘singularities’ (Appadurai 1986). The cases of the Ossau-Iraty and Chefchaouen goat cheese fully show how industrial processes are applied to standardise products over time and space, guarantee its replicability at minimum cost, specially important to reach a non-local market. Sylvander (1996) concludes that the GI system, although initiated to protect vulnerable areas or sectors, may develop towards food industrialization, as in the case of Roquefort. Similarly to Ossau-Iraty, Boisard (1991) shows that both ‘industrial’ and ‘traditional’ Camembert producers standardize their products according to industrial standards, although through different marketing strategies.

In addition, local products have to meet health and safety standards, e.g. the Codex Alimentarius, to enter the market that, in certain niches, can be particularly demanding. The Chefchaouen case is a good example of invention of an origin food that meets a new wealthy consumers’ demand for food safety. Similarly, Grasseni (2005) shows that specifications of Alpine cheeses answer a postmodern need for hygiene and safety, although coupled with the rhetoric of authentic food, and that ‘[t]his means not only adjusting infrastructures to hygiene regulations, but standardising tools, recipes and curdling agents’, resulting into a reduction of practices and taste.

4.7.2. Local knowledge (de)limitation

Findings from this paper show that quality claims are supported and justified by different forms of knowledge that compete in the codification process. Local knowledge enters the

process according to its market value and status. Not all local-implicit knowledge is relevant and, thus, becomes explicit during the qualification and codification processes. Its ‘market value’—e.g. knowledge related to quick preparation and long preservation of food—is one condition of selection, as also suggested by Boisvert et al. (2006). In a top down GI as Chefchaouen, the rich local knowledge underpinning the food heritage of the region is hardly taken into account by the ANOC non-local staff, leading to standardised production methods and local producers’ exclusion. This confirms Bowen and Gaytán’s (2012:82) analysis of international market-driven tequila GI where ‘nothing has been done to maintain local farmer knowledge’. Similarly, Fonte (2008:214) argues that ‘the integration or synthesis of local and scientific knowledge’ is difficult when local players do not participate in the process with a recognised equal status, and this ‘may lead to the appropriation of local knowledge and the benefits deriving from its enhancement’.

4.7.3. Power (de)limitation

The governing bodies of our case studies orchestrated a difficult agreement by mediating the stakeholders’ strategies. When the actors’ heterogeneity and the imbalance in their bargaining power increased, negotiation became conflictive. This is best shown in the Ossau-Iraty, where a multinational company like Lactalis works alongside with artisanal and transhumant cheesemakers. For Lactalis, Ossau-Iraty cheese represents one of the many specialty or ordinary cheeses produced, whereas for on-farm producers Ossau-Iraty, especially the mountain production, represents the core business and professional identity fulcrum. This heterogeneity resulted in on-farm producers’ decennial struggle to (re)negotiate the initial specifications judged as lax. This confirms Dentoni et al. (2012) who pointed that the restrictiveness of the Parma ham GI specifications is weakened by the heterogeneity of the Consorzio, namely members’ characteristics, assets, and strategies. Similarly, Tregear et al. (2007) argue that consultations leading to shared specifications may be arduous and conflictive when individual actors are ‘heterogeneous and multi-sectorial in nature’.

4.7.4. Place (de)limitation

The definition of *place* relates to a political judgment on the spatial distribution of practices. In the case of Piacentinu Ennese, for instance, quantitatively assessing where and which practices are more recurrent was controversial, confirming Barham (2003). Local institutions have supported somebody’s interests and excluded producers located in the northern Enna province from the use of local names leading to the loss of the best local saffron cultivations.

4.7.5. Social (de)limitation

The mediated agreement on geographical borders, quality, and practices resulting in specifications may be socially exclusive. In Chefchaouen, ANOC has arranged the OFS for attending the exclusion of (potential) small artisan cheesemakers who cannot meet the GI specifications while attending the inclusion of milk suppliers located outside the current area of production because implicated in a shared development project. This recalls Fonte (2008)’s warnings that OFS generate the social exclusion when non-local actors lead. Based on the case of the Oscypek smoked sheep cheese Presidium and GI, Fonte argues

that “small producers risk social and economic exclusion with the implementation of certification because they find it difficult to adhere to hygiene norms or because their production techniques are not considered ‘authentic’ and are not included in the production protocol”.

4.7.6. Taste (*de*)limitation

Origin food standardization is subordinated to consumers’ taste and demand for homogeneous and relatively regular food. Our results show that taste standardization is meant to comply with market demand for consistency in the case of Ossau-Iraty, Chefchaouen goat cheese GI, as well as in the case of the Piacentinu Ennese Presidium. Although Siniscalchi (2013a) argues that the Slow Food Presidia are ‘singular products’—rare, produced in limited quantities, following ‘traditional’ techniques—our results show that taste diversity is limited within this singularity. The story of the first cheese Presidium, Sardinian *casizolu*, gives a further account of such dialectic between taste diversity and market needs, resulting in standardization of cheeses that were acidic and bitter for modern market, although responding to local habits³⁷ (SFFB website). Although Slow Food considers ‘taste’ as locally constructed and evaluated, it simultaneously judges potential Presidia on the basis of non-local parameters of taste and behaves as a guarantor of taste, resulting in the exclusion of traditional tastes as defaults³⁸ (MacDonald 2013; Lotti 2010; West and Domingos 2012). Similarly, Ossau-Iraty experts tasting panels tend to create a homogeneous and recognizable taste, excluding animal scents usual to local or specialty consumers, but not to the average consumers. This confirm what Faure (1998) showed about the progressive elimination of traditional bitter tastes in Abondance and Raschera PDO cheeses because considered as defaults by experts. Taste authorities, such as GI tasting panels or the SFFB, validate the right/good taste on the basis of standards that are themselves standardized and result in disciplining consumers’ senses (Busch 2000).

4.8. Concluding remarks

Current research has extensively explained the factors that make GIs, Presidia and other collective origin food initiatives successful in shaping *another* rurality in which small producers can organise themselves to compete on the market and food is re-embedded in social relations. Local governance has been addressed as a key element in the initiation and

³⁷ ‘*The producers were initially perplexed by Slow Food. Frowning faces expressed a mix of worry and annoyance: What did we want to do? Why were we taking the trouble to give advice when they had been making their casizolu the same way for centuries? They didn't see why they should change a thing. "Casizolu is bitter because that's how we like it here," they told us, cutting off all our attempts to suggest improvements. In reality, casizolu wasn't bitter. It was an extraordinary cheese, but out of the four or five forms we tasted, some were excellent, some were average and some were flawed (too bitter or too acidic). This is normal for non-standardized production, but without making an effort to eliminate serious defects, products have no chance of succeeding on the market. That day marked the start of a challenging journey towards improving the average quality without flattening out differences, raising the profile of this unique product and promoting the work of the producers.*’ (Slow Food 2018)

³⁸ See the effect of wine experts and critiques on the standardization of wines (Ulin 1995).

development of OFS, raising questions about the balance of power between very heterogeneous stakeholders. Our study builds on these works and addresses the process of codification of knowledge into specifications because it reveals the logics of the development of the scheme and helps forecast undesirable outputs. Whilst the findings from the cases may not be generalisable, our analysis aims to conceptually reflect on issues that may have wider implications beyond the research sites.

In conclusion, we have shown that specifications are the result of long-lasting and hard negotiations among local actors, including national, local institutions, and international movements, such as Slow Food. The heterogeneity of the stakeholders and their motivation to start the quality scheme are key elements in defining the strategic development of the scheme and hence in forecasting the effects on local practices and knowledge.

In this context, although specifications may successfully preserve genetic resources, tastes, knowledge, and landscape as resources for a collective project, we found that they inevitably reduce the traditional diversity of admissible practices or variations that such schemes—also the most keen to value it—specifically aim to protect. In a collective effort to reach to new or extralocal markets demanding minimum costs, food safety, regular qualities and tastes, practices are standardized and the nature of products is changed.

In this way, we contribute to the growing debate on the unintended consequences of ethical labelling by providing a better understanding of alternative food governance systems. Most importantly, it is necessary to recognise that knowledge codification is highly politicised and GI and Slow Food Presidia schemes are generated in a neoliberal world, a world of property rights and markets, where traditional knowledge plays a role in relation to its market value. Further research would help assess if more participatory systems of governance of origin food may contribute to strengthening local rural communities and encouraging innovation towards a wider consideration of cultural biodiversity in the long term.

CHAPTER 5

Knowledge on the move: learning and changing practices in origin food communities

This chapter has been the basis for an article that will be submitted with the same title to the *British Food Journal*, co-authored by Mariagiulia Mariani, Claire Cerdan, and Iuri Peri. The authors concede that at least 80% of the work has been done by Mariagiulia Mariani.

Chapter 5

Knowledge on the move: learning and changing practices in origin food communities

5.1. Introduction

Food consumption is becoming a political act, as consumers choose food not only for quality and taste, but to espouse certain production methods and engage with producers (Counihan and Siniscalchi 2013). Origin Food Schemes (OFS) address the contemporary search for food knowledge by setting up innovative and locally-anchored relationships of production and consumption. Examples of OFS that are developing worldwide are Geographical Indications—the international legal system of protection of food names with a direct link to a geographical place—and Presidia—projects developed by the international Slow Food movement to protect endangered food, local cultures and economies.

OFS have a double interest in terms of knowledge. They protect local knowledge and know-how of food production from appropriation or oblivion, and guarantee consumers in local and distant markets of the authenticity of origin foods. To do this, the wide repertoire of local practices and know-how distributed in the area of production—the tacit knowledge described by Polanyi (1966) as ‘we can know more than we can tell’—is framed by specifications, or codes of practices, that are consensually established by stakeholders as well as by standards and regulations (Rangnekar 2011).

As Morgan and Murdoch (2000) argue, two opposing forces seem to act in networks of food knowledge: one towards standardisation that disseminates codified, reproducible, and transferable practices, and another towards localisation that bounds tacit or local knowledge to actors and places in a rather unplanned way (see also Bruckemeier and Tovey 2009; Storper 2002). OFS controversially operate between these two streams.

A concern emerges: how can communities engaged in the production of origin food avoid the risk of being fixed in time, but instead be resilient to changing conditions and able to innovate their practices? How is it possible to reconcile the need of institutionalizing rules that share and enhance a common identity, and the need of adapting to environmental, socio-economic conditions, which are perpetually changing?

Researchers increasingly mobilise the concept of community to discuss social implications and innovation in local food initiatives³⁹ (Gibson-Graham 2008; Feagan 2007; DeLind 2002; Feenstra 1997; Kloppenburg 1996). Some authors consider OFS as collective rights on goods, where community is a new or renewed institution for the management of the commons, understood as resources and know-how (Fonte 2010; Fournier et al. 2016).

³⁹ See for instance the ‘community governance’ of Bowles and Gintis (2002:422), and Gibson-Graham’s (2008) sociological discourse about the ‘community economy’ shaping counter-hegemonic projects.

Others underline contradictions in using market tools for protecting bio-cultural resources (Guthman 2007) and the risk of *normative localism* of idealistic alternative communities (Goodman et al. 2011). From a cognitive perspective, Grasseni (2007) suggests that ways to perceive tasks within a specific environment contribute to strengthening community members' identity, whilst Bruckmeier and Tovey (2009) qualify social movement communities as 'collective knowledge innovators' and argue that they can 'transform our understanding of the age we live in and of its future possibilities'.

Despite such general renewed attention to food communities, few studies have focused on the complementary role of practices in structuring a food community and modifying it over time. To fill this gap, this paper builds on the concept of 'community of practices' (CoP) (Lave and Wenger 1991) to explore learning processes occurring in three cheese-related OFS located in France and Morocco with an ecological perspective (Ingold 2002; Grasseni 2007) that emphasises the structuring interactions between environment and people.

Firstly, we explain how the concept of CoP has been applied to food and specifically to OFS. Based on this perspective, we question how OFS stakeholders can use specifications to shape a wider collective project, rather than a collective marketing tool. Finally, we discuss the consequences of considering OFS as CoPs.

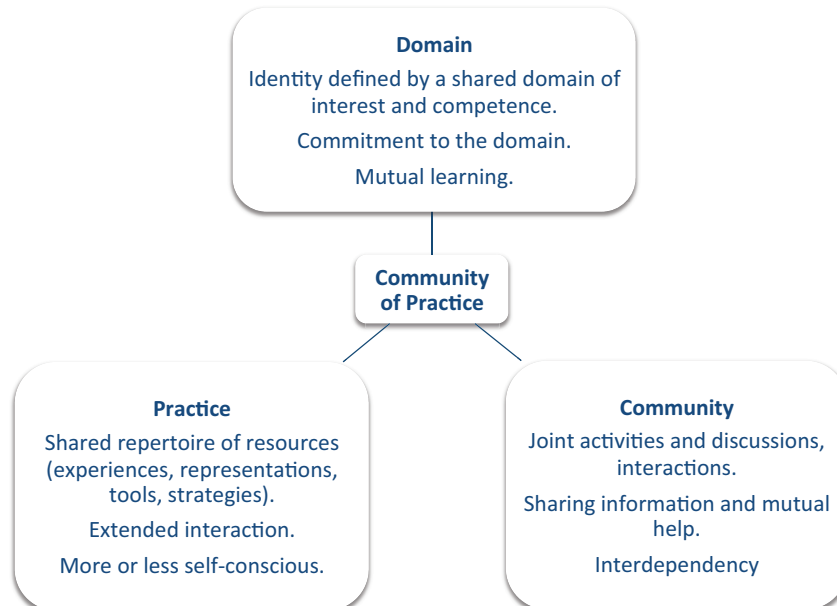
5.2. Knowing in practice

5.2.1. Roots and legacy of Communities of Practice

The concept of 'community of practice' (CoP) has been developed from the pioneering work of anthropologists Lave and Wenger (1991) on the 'situated learning' theory that considers learning as a social phenomenon constituted in the experienced world. According to this cognitive approach, learning does not take place inside the heads of individual learners, but is always intertwined with a particular place and moment or, in Lave's words (1991:64), learning is 'legitimate peripheral participation' in CoPs⁴⁰. A CoP emerges in response to a common project when different stakeholders engage in joint practices and acknowledge their interdependencies, e.g. informal groups of professionals willing to overcome a problem (Bouwen and Taillieu 2004). A CoP shares thus three main characteristics: domain, practice, community, which are further detailed in Figure 5.1.

The functioning of CoPs has informed anthropological studies with an epistemic interest in how learning happens, shedding light on different 'ways of knowing'. For example, Grasseni (2004) tells of the process of drawing a hiking map of the Italian Valtaleggio, involving different local users of the mountain together, e.g. a cheese retailer, a marathon runner, and a botanist. Grasseni shows how members of different CoPs know the same mountain through different practical experiences and negotiate a different perception of the landscape in the common project of map drawing.

⁴⁰ Several other scholars before Lave and Wenger (1991), such as Foucault, Bourdieu, Mauss, Leroi-Gourhan, and Warnier have suggested that practices of the everyday life are socially structured and learned through imitation and participation, and that any separation of knowledge and practice, or abstract knowledge and practical activities, is possible (Wenger 2010).

Figure 5.1: The three pillars of CoPs: domain, community and practice

Compiled by the authors, based on Wenger (1998)

Similar to Lave and Wenger's 'legitimate peripheral participation', concepts of 'apprenticeship' and 'imitative learning' (Downey 2010; Downey et al. 2015) are mobilised to suggest that the 'immersion in a learning environment [...], in addition to facilitating technical know-how, structures the practitioner's hard-earned acquisition of social knowledge, worldviews and moral principles' (Marchand 2008:246). Such cognitive skills 'are in turn instrumental to justify and reproduce specific contexts of action' (Grasseni 2007:206). These concerns on bringing the attention from the object (what is known) to the subject in its relational context echo Ingold's understanding of knowledge as skills, often tacit and embedded, that are acquired in 'fields of practice' (2001), i.e. networks of dynamic practical relationships with the environment and people who live in it. According to this ecological approach, people are rooted into their environment through a 'taskscape': if a landscape is to be filled with representations, a 'taskscape' refers instead to a set of tasks 'carried out by a skilled agent in an environment' (Ingold 2000:195).

After its original theoretical and analytical formulation, the concept of CoP became an operational tool in knowledge management to address the importance of peer-to-peer learning and other ways of enhancing learning processes (Hoadley 2012; Wenger 2010; Cox 2005). If initially CoPs were mobilized for the *description* of a phenomenon, then CoPs became a successful tool for *prescription* in knowledge management in different domains, from education to private sectors (Cox 2007).

In a few cases, CoPs have been used to initiate and explore local food projects. For instance, based on Weddel (2005:136–37), Friedman (2007) applies the concept of CoP to an experience of public procurement concerned with food security and sustainability. With a similar concern on sustainability in food policy, Karner et al. (2011) explore the potential of food related CoPs to implement knowledge brokerage and the (tacit) interaction

between researchers, policy makers and civil society. Blay-Palmer et al. (2016) suggest that fostering international networks of knowledge can make ‘communities of food practice’ more resilient to global pressures. From a conceptual point of view, Goodman et al. (2011) contend that the concept of CoP may offer a bridge between consumption and production by placing a certain degree of agency on both sides of the food system. This corresponds to a turn in the previous scientific trend that located agency on the production side and considered consumers as unconscious of the dynamics of production (Goodman et al. 2011).

5.2.2. CoPs in OFS: an analytical perspective on contested knowledge

OFS have the three main attributes of a CoP: (i) domain: they emerge on a common project about an origin-food, based on a shared vision; (ii) community: they connect different stakeholders with organizational and networking skills, with a certain degree of informality and sense of interdependence; (iii) practice: they are based on different forms of knowledge and competencies, including tacit knowledge, brought together in situated actions.

We used the concept of CoP as an analytical tool to explore the ‘practice of knowledge production’ (Goodman et al. 2011) in OFS for four reasons. Firstly, this concept allows us to overcome the limits of OFS institutional settings and include actors other than the governing body in our discussion. Then, the concept of CoP allows us to consider objects and places in the OFS initiative, echoing both the Actor Network approach (Latour 2005) and anthropologists bringing attention to objects in the everyday life as well as body unconscious procedures (Appadurai 1988; Grasseni 2007:207). Moreover, using the concept of CoP is a way to acknowledge the plural forms of knowledge located in food communities, including the less visible ones, such as tacit knowledge⁴¹. Finally, the concept of CoP is helpful to look at the relationships between knowledge, power relations and conflicts in the process of shaping communities (Wenger 2010), although critiques have pointed out that use of such concept seems to imply a fictive homogeneity and harmony in CoPs.

5.3. Methods and introduction to the case studies

Starting in Mediterranean Europe, OFS are now on the public agenda of number of countries in the Global South too. For the purpose of this article and in order to address a

⁴¹ Definitions of different forms of knowledge are complex and controversial (Morgan and Murdoch 2000; Curry and Kirwan 2014). This paper refers to Fonte (2008) who identified the forms of knowledge used in local food initiatives and argued that ‘local’ knowledge corresponds to two concepts, namely ‘tacit’ and ‘lay’ knowledge. Whereas tacit knowledge is [...] a form of knowledge ‘transmitted pre-discursively in a community through its social norms and habits’, lay knowledge is ‘acquired through particular experiential circumstances’ and is informally transmitted by ‘local experts’.

broad spectrum of experiences, we selected three case studies, two intertwined cases from France (*Ossau-Iraty GI* and *Béarn Mountain cheese Slow Food Presidium*) and one from Morocco (*Chefchaouen goat cheese GI*). This choice is motivated by the fact that France is the country that inspired the international GI system and has a longstanding tradition in public and private driven OFS, while Morocco is a country which has only recently been exposed to origin-food initiatives, but with an important policy making commitment (see the national agricultural development plan, *Plan Maroc Vert*). This selection allows us to address more formal and mature schemes (*Ossau-Iraty GI*), an informal one (*Béarn mountain cheese Slow Food Presidium*), and a recent experience (*Chefchaouen goat cheese GI*). The size of the initiatives vary greatly, from approximately 1500 stakeholders in Ossau-Iraty (data from Ossau-Iraty ODG 2015), including milk suppliers, on-farm producers, dairies, and *affineurs*, to approximately 50 shepherds and cheese makers in the Béarn Presidium (data from AET3V 2015), and one cheese making facility collecting the milk of 40 shepherds in Chefchaouen (data from Ajbane Chefchaouen 2015).

Table 5.1: Three case studies for a broad spectrum of experiences

	<i>Ossau-Iraty</i>	<i>Béarn mountain cheese</i>	<i>Chefchaouen goat cheese</i>
<i>Initiative</i>	GI since 1971	Slow Food Presidium since 2008	GI since 2011
<i>Location</i>	Béarn and Pays Basque, France	Béarn Valleys, France	Chefchaouen province, Morocco
<i>Members (2015)</i>	1,413, of which 1,249 milk suppliers, 141 on-farm producers, and 23 dairies and <i>affineurs</i>	51 shepherds and cheese makers	40 milk suppliers, 1 dairy
<i>Production (milk/year, 2015)</i>	25,756,366 litres	15% of the on-farm production	400,000 litres
<i>Local institutions</i>	<i>Interprofession</i> , INAO	AET3V, Slow Food Convivium, IPHB	ANOC
<i>Market</i>	National distribution.	Local consumers, tourists, specialty shops in the major cities.	Local consumers, tourists, restaurants, supermarkets in the major cities.

Authors' creation

The case studies relate to mountain areas because mountain communities, despite being recognised as an important reservoir of cultural biodiversity, are particularly exposed to marginalisation and OFS constitute an interesting form of economic development (Romeo et al. 2015). Moreover, cheesemaking was chosen because it is a complex process underpinned by lay and tacit knowledge (Bérard and Marchenay 2006).

We conducted empirical research to describe and analyse specific processes, according to the case study method defined by Gerring (2004:341) as ‘an intensive study of a single unit—a spatially bounded phenomenon—for the purpose of understanding a larger class of (similar) units.’ The cross comparison of the different selected cases allowed us to unfold the repetition and discontinuities of patterns in diverse contexts. Data were collected by

means of the classical anthropological enquiry, between 2014 and 2016, opting for a (limited) temporal perspective that implies the observation of changes.

In order to study tacit practices and knowledge, we adopted an apprenticeship perspective. Coy (1989)'s pioneer work justifies apprenticeship in anthropology as both a topic and a field method. Other scholars further develop this perspective and outline the apprentice-style method of learning about practices by practically doing (Wacquant 2005; Downey et al. 2015; Pink 2015). Marchand (2010), for instance, considers apprenticeship 'both a mode of learning and a field method'. Similarly, Ingold (2008:82) argues that anthropology should be a *learning with* rather than a *learning of*, pointing to the importance of a researcher's phenomenological engagement with the actors and environment. Therefore, in Béarn, the participant observation typical of the anthropological enquiry became apprenticeship with shepherds and cheese makers. One of the authors entered the CoP as a novice, somebody who wanted to be trained. This stance helped address learning processes in the real context, where verbal communication is complemented or even surpassed by physical communication. This stance also allowed exposure to the learning environment and its physical consequences.

We now introduce the three cases of OFS mountain cheeses in chronologic order, starting with the oldest, and focus on the nature of the collective bond that brings CoPs together in a shared commitment.

5.3.1. Ossau-Iraty GI: unifying practices beyond differences

Ossau-Iraty is a large ewe milk cheese GI set-up over two geographical and cultural regions: Béarn and Pays Basque. Béarn and Pays Basque have strong—oppositional to a certain extent—regional identities that are reflected in this GI cheese: approximately 5kg cheese with a reddish crust in Béarn, smaller and harder in the Basque Country. The first specifications have been defined under the impetus of industrial leaders over two years—very quickly, compared to the average time of 10 years for obtaining the recognition of a French GI—when Roquefort left the area at the end of the 70s. On-farm producers were poorly involved in the negotiations of the new GI and accused industrials of stealing the Ossau mountain people's identity, highly renowned for their cheesemaking skills, by defining permissive specifications⁴². The market drove the definition of the cheese towards an industrial model of production and distribution, searching for consistency of quality and annual production, and towards an easy to stock and sell product, e.g. intensification of milk production, specialization on sheep milk exclusively, pasteurization of milk, long shelf life of cheeses.

However, the GI initiative partially reconciles such oppositions between artisan and industrial or Basque and Béarn practices. The main community bond is not the goal of reaching an added value for cheese through a collective initiative, because the Ossau-Iraty

⁴² The Ossau valley's shepherds have tried to get the recognition of a GI for the cheese produced in Haut-Béarn exclusively, but the INAO rejected such project because the preceding Ossau-Iraty GI stands on the same area.

cheese and the non-GI generic sheep cheese, on-farm and industrial cheese, are not effectively differentiated on the marketplace. The collective conservation of local breeds is what mainly unites the GI stakeholders. According to GI leaders, the main success of the GI is the priority given to local sheep breeds (Manech tête rousse and noire, and Basco-béarnaise) over the spread of the Lacaune breed, bringing together shepherds and farmers with different economic strategies (i.e. cheesemaking or selling milk to dairies) (Authors' interview 2015).

Local breed names were not mentioned in the first specifications, and in the 80s the more productive Lacaune started to increase in the Pyrenees until 1996 when a change in the specifications allowed only the three local breeds. In the past decades, several genetic selection programs consolidated the breeders' bond to local breeds, well adapted to the weather conditions and mountain life, while searching for an increase in milk production (Millet 2017). Non-mandatory use of raw milk for the whole GI is also a crucial element in the community bond. An on-farm cheesemaker with a first level political role in the GI told us about the recent intense debate that took place among the on-farm producers:

We [on-farm cheesemakers] agreed not to fight to forbid pasteurisation because we want to strengthen the cooperation among all the farmers of the region, the ones producing cheese and the ones selling milk, without penalizing those who decided to sell milk to dairies that have to pasteurize. (Authors' interview 2015)

5.3.2. Béarn mountain cheese Slow Food Presidium: old practices on the stage

In 2008 the Slow Food movement launched a Presidium in Haut-Béarn, a touristic hiking area in the Pyrenees National Park, with a stance alternatively complementary or oppositional to the Ossau-Iraty GI. While the Ossau-Iraty GI exclusively authorizes ewe milk, the Slow Food Presidium also includes mixed cow and goat milk cheeses, although marginally. The Presidium was meant to distinguish and increase the added value of the cheese produced in the summertime high-mountain pastures (*estive*) in connection to the practice of the transhumance and the daily cheese production in mountain huts (*cabane*). Since the launch of the Presidium, unchanged minimal specifications define the daily mountain production and the goal of abandoning the use of starter cultures.

The Béarn mountain cheese Presidium is a CoP where information, knowledge, collective representations, and problems are shared. Members of the Presidium are transhumant shepherds and cheesemakers who share similar interests and visions. Their material conditions of production are similar: farming activity relies on family work and often one employee, members have approximately 300 sheep and get access to mountain huts equipped by public institutions with cheesemaking essentials, and generally outsource cheese-maturing to professional caves.

The promoters of the Presidium project were the leaders of the Three Valleys Transhumant Association ('Association des Eleveurs Transhumants des 3 Vallées', AET3V), supported by the Slow Food local chapter. Local shepherds created the AET3V in 1990 with the aim of increasing the political stance of their profession. The AET3V home page recalls:

Tired of listening to other people speaking in our place about our profession and our future, we take our destiny in our own hands in order to defend our mountain legitimacy, and say that it is our turn, we shepherds, to talk about our profession, to decide and defend our future on the mountain.

Today the AET3V includes 88 members, of which 79 transhume and 51 make cheese on the high-mountains. In summertime shepherds have few opportunities to meet because they are scattered in mountains and daily chores last from 5am to 11pm. However, interconnections and collaboration are frequent, beyond rivalry and the refrain ‘mountain people are stubborn’. The AET3V provides shepherds with an exchange platform to improve their mutual understanding and solve problems, as a shepherd of many generations explained:

The AET3V was born as a militant association, based on solidarity. When a shepherd was in need, we collectively helped him out. For instance, one year a shepherd lost 30 sheep to illness, and 50 to a bear attack. In one season, he lost 80 sheep... that means a lot. So we decided to each give a sheep to him. For us, one sheep is not a lot, for him, 80 sheep was a way to continue. (Authors’ interview 2014)

5.3.3. *Chefchaouen goat cheese GI: spreading innovation of practices*

In the Rif mountain city of Chefchaouen, Northern Morocco, shepherd families historically sold goat milk in the weekly market or door-to-door. In the late 90s, a cooperative dairy, the Ajbane Chefchaouen, was built to generate added value through the transformation in fresh cheese, the so-called *jben*. The targeted potential market were local consumers used to fresh cheese for breakfast, local hotels and restaurants keen to offer local food (*produits de terroir*) to their customers, and also urban consumers concerned about having healthy cheese. The initial project held by a local shepherds’ cooperative failed in the goal searched by local authorities, i.e. producing a safe, modern, and profitable cheese. Consequently, it was replaced by the current cooperative dairy managed by the National association for sheep and goat breeders (‘Association nationale ovine et caprine’, ANOC). The initiative of a GI—recognised in 2011—was promoted by ANOC, supported by the national and regional government as well as by international development programs to collectively build a local development initiative.

This cheese, rooted in a vibrant tradition of pastoralism, has become an emblematic element of the regional marketing strategy based on the promotion to tourists of the gastronomic heritage of Chefchaouen. The Ajbane Chefchaouen has elaborated cheesemaking practices highly influenced by technicians from France and Belgium. A pasteurized fresh cheese made with imported industrial techniques adapted to local tastes is marketed with the mythic image of the mountain blue city, its particularly clean environment, and the healthiness of goat milk.

The GI is not currently operational and provides limited connection to the local dairy stakeholders. Local breeders and a large number of the staff of the dairy are still unaware of the initiative, although ANOC has promoted several trainings about the potential of the GI. Moreover, specifications tend to formally exclude other potential local stakeholders from the project, while appropriating the efforts of the first collective management

experience. Highly exclusive practices, e.g. industrial animal rennet and pasteurisation, are mandatory: rennet must be sourced in bulk from other regions and pasteurization is an expensive technique that small farmers cannot afford.

5.4. Community bonding: co-producing practices and belonging

The above introductions show that the three case studies of OFS cheeses differ in terms of their stakeholders' interests, motivations, and development strategies. Despite this, in the three case studies, collective learning processes contribute to defining cheesemaking practices and create a community based on a common project, a sense of interdependency, and a 'shared identity' (Lave 1991). Through the prism of the concept of CoP, we give examples of the elements nourishing the process of community bonding.

5.4.1. Beyond specifications: tacit knowledge and places

GIs and Presidia's specifications result from negotiations among stakeholders to outline a reference for building a common project and a CoP. A shared repertoire of resources, including stories, places, and tacit knowledge, contribute to the goal of building a community beyond shared norms.

The case of the Béarn mountain cheese Presidium best exemplifies how material and immaterial elements build a strong community despite minimal specifications. Practices whose importance are underestimated by the greater society, e.g. transhumance and cheesemaking in rustic huts, are the fulcrum of the shepherds' project of gaining social recognition for their work, skills, and cheese quality.

Festivals, competitions, and markets are example of places that contribute to enhancing the bond and the perception of sharing a destiny with a community, by renewing the local heritage. If past generations of shepherds often met with a bottle of wine in neighbouring mountain huts, nowadays several public initiatives facilitate relationships. An example is the shepherds-exclusive festival on August 15th in the Arlet mountain lodge that closes the labour-intensive cheesemaking season, after which shepherds will continue to take advantage of the mountain pastures for another month. Another example is the revival of cultural events, such as La Pastorale, a theatre show performed in dialect where shepherd families join as actors together with their animals, sheep in particular. Performing common practices and sharing them with local people or tourists strengthen the community bond.

Cheese competitions, such as the one in the renowned Cheese Festival in Laruns, are an occasion to meet and compare cheeses. Taste appreciation is an important arena through which to evaluate and negotiate cheesemaking practices. In August 2014, this paper's authors joined the tasting jury of a cheese competition in Tardets. The winner was a very peculiar cheese in which the jury recognised a smoky flavour, absent from all the other cheeses. A recurrent question, *how was that taste obtained?*, was finally answered. As in the old times, before stricter regulations about the safety of cheesemaking facilities, the winning cheesemaker hangs cheeses next to the fireplace. In such public contexts dedicated to cheese appreciation, consumers and experts realized a change in the way cheese makers perceive and talk about their cheese.



Picture 5.1: Goat herder with cross-breed Alpine goats (Ksar el Kbir, Larrache)
The young shepherd brings the goats in a chamomile field. The aromatic herbs of the pastures make the reputation of his father cheese.

Photo credit: Mariani, M.



Picture 5.2: Manual milking in the high-mountains (Aspe Valley, Béarn)
A shepherd is milking his 300 sheep alone, twice per day, and his son is appropriating the gestures.

Photo credit: Mariani, M.

Intergenerational transmission of the farm ownership and farming practices is a common concern with all the interviewed shepherds who want to ensure the continuity of their knowledge, work, and professional community. Nowadays it is common to see children joining the mountain life during the two-month school holiday thanks to the improvements promoted by public institutions to the mountain hut facilities. Children are stimulated by their parents to observe, repeat gestures, and absorb a certain worldview and values, as a shepherd explained:

You don't learn how to become a shepherd, either you are one or you are not. You need observation and memory abilities, and this is something you don't learn, you train and develop them. I was born among sheep and mountains, and that has always surrounded me. My son B. knows my sheep by heart, even though they look all the same to you. I learnt the same way I am teaching my sons and daughters, suggesting tasks and how to accomplish them. This is a job you have to like and choose, otherwise it is slavery. You don't have a distinction between personal and professional life, you are always mixing them up. (Authors interview 2014)

The Presidium community has a transnational dimension too. Slow Food facilitates the contact and sharing of experiences among producers to foster peer-learning among local and non-local cheesemakers within the Slow Food network, for example at the international events Cheese and Salone del Gusto-Terra Madre, where producers feel their belonging to a transnational community.

5.4.2. Fluid practices across borders

The practices developed within the OFS also have an influence on producers who are not members of the OFS but progressively and voluntarily adopt them. The case of a highly exclusive GI such as the Chefchaouen goat cheese GI best emphasises that also producers who do not belong to the OFS are peripheral members of the learning community. Nowadays traditional goat milk sale has disappeared from Chefchaouen markets because of the processing monopoly of the Ajbane Chefchaouen dairy. However, cheesemaking practices spread in the area. A cow milk dairy value chain builds on the Chefchaouen goat cheese's growing reputation and progressively appropriates cheesemaking standards, practices, and representations first constructed and promoted by the Ajbane Chefchaouen. Following its example, all the interviewed professional cheesemakers use artificial rennet, generally of vegetal origin, instead of traditional rennet (animal paste, coagulating plants or spontaneous acidic coagulation) and make cheeses that are less salted and dried than traditional ones. Peer-learning among producers of the area tend to homogenize processes and choices, a phenomenon that Sylvander (1996) calls the 'normalization space' where the adoption of the same practices and standards involves all enterprises and groups of producers in the same geographical area.

Moreover, people previously employed in other sectors now consider cheesemaking as an appealing business or an informal complementary source of revenues. Unconventional and home-cheesemakers are multiplying in the area, experimenting and challenging the GI rules and codified practices. During fieldwork we recorded more than a dozen variants of fresh cheese manufactured in the area surrounding Chefchaouen and in the whole district of Tetouan. If traditional recipes seem to be lost, a large variety of recipes are now based

on actors' doing, sharing, and experimenting practices. For example, a librarian and home-cheesemaker told us:

My grandmother used to make cheese, but I don't know her recipe. Myself, I learned from a woman in the mountains, three hours walk from here [Chefchaouen]. I spent some days with her for family reasons and I watched and helped her while she was making cheese. Then, I tried to make it by myself at home, adapting her recipe to my facilities and daily tasks. (Authors interview 2014)

A young professional of local development explained:

I freeze my *leben* [naturally fermented and acidified milk] and then I thaw it, I strain it, and I form the solid part in a cheese shape. It is a quick, safe, and effective way. I am studying how to start a business out of it... It is time to leave my job with NGOs, too much uncertainty. (Authors interview 2014)

5.4.3. *Engaging consumers in practices*

The two French case studies show that CoPs actively engage consumers in dynamic knowledge relations. For instance, a leader of the Ossau-Iraty GI underlines the importance of engaging with consumers in order to highlight, rather than hide, the differences that exist beyond the GI unified identity:

The GI is firstly a Syndicate [i.e. the union of the stakeholders, including on-farm cheesemakers, milk suppliers, dairies and *affineurs*], providing protection and rules that producers can improve. Without it, it would not be possible to talk about mountain cheesemaking in the Pyrenees anymore. The common rules must characterize a quality cheese linked to our territory. It is important people stay together and quality is what will allow us to survive in the future. A primary need of the GI is to foster communication. We know, but we don't know how to let other people know. (Authors' interview 2015)

In addition, the effort of including consumers as an active part of the Ossau-Iraty CoP is shown by the *route du fromage Ossau-Iraty*, the cheese route connecting cheesemaking farms, dairies, *affineurs*, and mountain farmsteads from the coast of Basque Country to the peaks of Béarn. OFS stakeholders explain the practices of sheep breeding, cheesemaking, and maturing to consumers by means of demonstration, active participation, and guided tasting. The interviewed producers contend that such an initiative based on physical contact and practice-sharing fosters consumers' learning about their labour conditions and product qualities. At the same time, we were told that consumers give important feedback in terms of taste appreciation and consumption practices that change the producers' vision of their work.

In Béarn, the cheesemaking culture is also shared with consumers through several learning initiatives, marking the fact that mountains are no more exclusively a pastoral place, but a place shared by different users, hikers, or tourists. For instance, at the end of June, the *transhumance* is an occasion to share the tacit knowledge, the activities, and a collective representation: shepherds leave their farms to reach the high mountain pastures with a long procession of animals and local people. Such practice that was seen as retrograde and was restricted to shepherds is increasingly attracting the attention of non-professionals as a

community-building occasion. Similarly, *Cabanes ouvertes* (Open mountain huts) is a AET3V initiative, built on the example of the days of open wineries, that allows people to follow shepherds in their mountain activities throughout a day. During *Cabanes ouvertes*, producers and consumers share practices through hands-on experience, and physically engage with each other's knowledge. In this way, a place like a mountain hut, for instance, can be considered as a mediator of the heritage: a place that increases meetings among consumers and producers, and contributes to the transfer of tacit knowledge and representations (Faure 2008).

Slow Food has a pioneering role in the production of connoisseurship among consumers based on tasting and practical engagement with producers (e.g. farm tours). For three decades, 'taste education' programs provided consumers with tools to understand the intrinsic/material qualities of food and to appreciate differences. More recently, Slow Food claimed that consumers should become 'co-producers' because production and consumption are integrated and consumers' choices shape the production side (Petrini 2010). A member of the Béarn Presidium and activist shepherd told us:

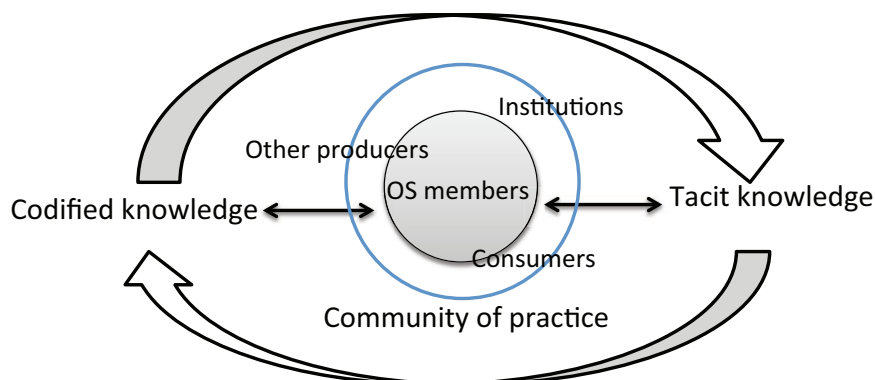
The Presidium gives recognition to us [farmers]. We need to see that our cheese is recognised as different, our work as uncommon. It is part of the support needed to change the farming world. (Authors' interview 2014)

Slow Food thus contributes to foster society's appreciation of agricultural labour by developing a media discourse and activities located at the interface between production and consumption.

5.5. Discontinuities of codified and tacit knowledge

The ecological stance adopted by this article leads us to consider local practices and knowledge related to OFS as fluid, and focus on discontinuities, context-dependency, and processes. We consider OFS as a framework for learning, where innovations are discussed to define which are acceptable and which are not. Figure 2 provides a conceptual representation to understand such discontinuities.

Figure 5.2: Discontinuities between tacit and codified knowledge



5.5.1. Specifications change following market or cultural streams

Although specifications codify practices that are recognised as historical and shared by a community, it is possible—yet complicated in practice—to change specifications. Following established procedures, both GIs and Presidia may decide to change their specifications to be resilient to modifying contexts and leave a space to collective innovation. Changes might occur to adapt to the market or regulatory framework, meet consumers' expectations, or include new concerns, such as environmental issues (Thévenot-Mottet 2010; Chapter 3). These changes mirror learning processes that bridge different forms of knowledge within a specific place, in a 'continuity of localised experimentation' (Ganjee 2012:115).

The case of the Ossau-Iraty GI provides an example of decennial revisions of specifications that contested some of the practices allowed in the first, more permissive, specifications and resulted in new specifications in 1996, 2000, 2010, and 2014 (Moity-Maïzi and Amilien 2007; Millet 2017). The organization for defence and product management ('Organisme de Défense et de Gestion', ODG) reacted to several crises of overproduction by discussing how to challenge the previous paradigm of mass-production. The ODG engaged with specialty consumers and research to define new cheesemaking practices, increase the cheese quality, and target a market niche. For instance, the use of silage has been forbidden since November 2017 to reduce the resulting milk acidity and, therefore, prevent taste defects, following the example of several other French cheese GIs (Bureau and Valceschini 2003). In practice, by 2015 the majority of milk producers had already stopped using silage, resulting in an improvement of farming practices (Authors' interview 2015). Moreover, new specifications forbid treatments to the rind (polyvinyle acetate and natamycine) used to prevent mould and reduce weight loss during maturing.

At the same time, the 90s are an institutional turning point in the management of French cheese GIs: following the example of wines, newly established GI cheeses have to prove their link to the origin (Marie-Vivien et al. 2017). Several previous GIs, including Ossau-Iraty, accordingly reviewed their specifications to specify natural and human factors unique to their area of production and responsible for the product quality⁴³. For instance, the Ossau-Iraty specifications limited the milk production to a maximum of 300l/sheep/year, fixed a minimum of grazing days and a percentage of local feed. As one GI producer explained, even this collective choice was not without controversy among farmers who have different individual farming practices:

Paradoxically, I cannot buy feed from the Aragon region [Spain], anymore, which is organic, better quality, less expensive and geographically closer to my farm than many other areas of the Ossau-Iraty GI production area. I am penalised towards my regular consumers, because my sale price is now higher and quality inferior, to the advantage of regional large cereal producers. (Authors' interview 2015)

⁴³ In 1992, the French National Institute for quality and origin (INAO), created to deal with the protection of wines, becomes in charge of the cheese and all foodstuffs.

In the Ossau-Iraty, producers' practices stimulated changes in specifications. Marginal practices became collectively accepted and then mandatory. Conversely, the case of the Chefchaouen goat cheese shows that the OFS is a framework for collective experimentation of innovative practices that can also result in their rejection. The OFS initiative started with discarding the numerous local cheesemaking variations because they were considered too divergent from its target market (Zantar et al. 2013). The Ajbane Chefchaouen cheesemaking practices, later codified into specifications, have been revised to guarantee the production of a regular cheese that matches local tastes. The staff of the dairy undertook training periods in Europe, whereas French and Belgian cheese technicians regularly come to Chefchaouen to monitor and implement the production process. Experimentations continued also after the establishment of the GI, specifically to cope with the seasonal overproduction of milk. Ajbane Chefchaouen diversified its range of products with a French style hard cheese, but local consumers rejected its unusual strong taste and moulded rind. In 2014, a new practice was introduced, as an employee of the dairy explained:

We tried to freeze the fresh cheese in order to stock the wintertime overproduction of milk, during the peak of goat lactation, and to match the increased demand of fresh cheese of the summertime. But the frozen fresh cheese was not successful: the texture changed, becoming less creamy and spreadable. (Authors' interview 2014)

Hence, building on local consumers' feedback gathered by marketing staff, Ajbane Chefchaouen abandoned the projects of maturing cheese and freezing the curd to instead develop fresh flavoured cheese and yogurts, outside the framework of the GI.

Presidia also allow changes in specifications. Slow Food intends Presidia's specifications to be an on-going learning process and not a fixed regulatory framework. As in the case of the Béarn mountain cheese, a Presidium can be launched before completing the codification of practices, on the basis of trust and mutual engagement between the group of producers and Slow Food. In addition, Presidia's specifications include what is mandatory and also what is desirable. For instance, the Béarn Presidium aims to abandon the widespread use of selected cultures (starters) in the mountain production season by stimulating the creation of alternative locally rooted practices. Slow Food promoted this technical change through knowledge exchanges among farmers and technicians from its international network. However, only few shepherds are experimenting with the self-production of starters and sharing results, whereas the majority is still using selected cultures (Chapter 3). Beyond the rhetoric of protecting traditional practices, this Presidium promotes an innovation based on technical knowledge that is meant to improve the production process.

These examples shed light on the learning processes occurring among the OFS practitioners and suggest that practices are not a translation of codified knowledge where knowledge is fully handed off as in a knowledge transfer model (from experts to learners). Even in a highly top down OFS such as the Chefchaouen goat cheese GI, practices are co-constructed. Experts and technicians take part in the OFS, but do not generate and transfer knowledge to practitioners because standardised procedures cannot be applied in all circumstances. Practitioners rely instead on joint problem solving, establishing similar patterns of behaviour and practices (Ingold 2000). The gap existing between what is

written and what is done is source of alternative or marginal practices that might become mainstream and be eventually codified and made mandatory.

5.5.2. *Becoming part of a CoP: challenging the peripheries*

The three case studies show that the OFS members vary along the development trajectory of the OFS, alternatively as a result of conflictive processes, top-down decisions, and through different learning processes. The borders of CoPs are porous and may be crossed by producers willing to enter the OFS, as shown by the following examples.

The on-farm cheesemakers were initially a marginal group in the Ossau-Iraty GI, largely excluded from the ODG governing body, but they have used the OFS to challenge their socio-economic status. Long-lasting and adversarial negotiations resulted in specifications that further recognise their identity and in an increased representation in the ODG. For instance, their cheese and cheese production practices (e.g. based on raw milk processing) have been recognised as different from the practices of dairies. Since 2015 on-farm cheesemakers are entitled to a logo that marks the cultural and technical added value of their cheese. Consequently, a growing number of on-farm producers joined the Ossau-Iraty GI (from 1 in 1981 to 141 in 2015) and an emerging group of milk suppliers is learning new skills to become on-farm cheese producers. Moreover, the ‘mountain’ designation recognised in 2014, although not exclusively limited to on-farm producers, is *de facto* used only by on-farm producers who are also transhumant⁴⁴. It is a differentiation tool appropriated by GI on-farm producers that increased the appeal for new on-farm producers to join the initiative.

Since 2015, the extension of the area of production of the Chefchaouen goat cheese GI is discussed to include a new area bordering the province of Chefchouen. The declared goals of this change in the specifications are to increase milk volume to be processed and to strengthen a development project offering specific training to young women. The formal modification of specifications will result in the inclusion of new actors in the GI as an ANOC’s top-down decision that reflects a rural development goal.

In the Béarn Presidium, shepherds with different study backgrounds and worldviews join from other regions. Increasingly in Béarn family work is no longer a social obligation and interns have fixed the resulting problem of lack of labour. Programs of apprenticeship for candidate shepherds and *parrainage* (i.e. patronage, a formal system of support that helps old farmers to transfer their knowledge to newcomers) institutionalize peer-learning among farmers. The knowledge that was traditionally shared between the uncle to the youngest nephew⁴⁵ is nowadays also transmitted in professional schools, blended with scientific inputs, and made accessible to newcomers, ‘democratizing cheesemaking traditions’ (Bowen and DeMaster 2014). A Shepherd School⁴⁶ has been training new generations of shepherds in Béarn since 1991. Learning is based on practical training with different

⁴⁴ The ‘*Estive/Mountain*’ stamp was first created in 1994 to support the transition towards the technical implementation of mountain huts.

⁴⁵ The youngest born of a rural family normally inherited the task of taking caring for the family sheep.

⁴⁶ The Shepherd School in Soeix provides the ‘*formation berger vacher pluriactif*’.

professionals, in valley farms and in mountain huts, as a vehicle for transmission of knowledge that is not formalised and has to be embodied to become effective. A non-local shepherd explained his experience in training interns:

In 2007 I started welcoming interns coming from the Shepherd School for an eight-month training. It is not a codified internship, interns have to follow all the daily tasks: milking, veterinary treatments, cheesemaking, maturing, shepherding, chores on the farm. I don't waste my time with somebody who is not motivated. On the contrary, I love to offer my time to someone interested in learning. Interns have also brought me openness to the world, a daily exchange with urban people with other educational backgrounds. It is important to allow people to experience this job even though they won't practice it: if they know, they could be influential people. I am not the son of a local farmer and I have been an intern myself and often dealt with difficult masters, not speaking many words. I had to observe and steal knowledge; I was mistreated, transmission of tasks and procedures was not clear and it was purposefully unclear. Some other tutor was instead interested in my theoretical knowledge and finally we ended up becoming partners.

Besides formal learning, newcomers are trained and appropriate the community's practices through the practical daily engagement with the environment: becoming an apprentice and experimenting with the 'taskscape'. However, apprenticeship occurs also through the negation of knowledge transfer, motivated by the goal of safeguarding the cheese uniqueness. For instance, the same shepherd told us:

During my first training, I was not allowed to enter the maturing cave with the cheesemaker who wanted to guard secrets, even though she didn't have any follower. So, I started wondering what she used to make to her cheeses so special, and I guess I figured it out: she was adding beer to the brine, and sometimes I do the same!

Such negation of knowledge, such silence, generates experiences and innovations.

5.5.3. Changes in practices: status and tacit knowledge

OFS can produce a change of the status of practices. Practices first considered as retrograde change their status and are then positively qualified, giving rise to local pride, as in the case of the transhumance and pastoralism in Béarn, that nowadays attract people not raised in a local rural family. If in the old times transhumance was a necessary practice due to the small size of farms, nowadays it is a resource, the justification for capturing added value for the cheese and pride in its quality based on mountain tastes and representations. In addition, transhumance gained public recognition and is valued by national and environmental institutions as a strategy to contain the growth of ferns, make mountain landscapes more accessible to users, and prevent fires.

Similarly, in Chefchaouen, goat-breeding practices are changing status and becoming more socially accepted. For instance, cheesemaking is becoming socially appealing and also the profession of shepherd is undertaking a change of status. Shepherds who deliver milk to the Ajbane Chefchaouen dairy have obtained a valid reason to use the forests surrounding Chefchaouen, which are of common use (*Jmu3*) and situated in a natural protected area, the Talassemtane National Park. Their activity, although generating less revenue than other businesses (i.e. tourism and cannabis growing) and sometimes insufficient to guarantee the

family livelihood, is legitimized and socially recognised. Moreover, institutions and private actors promote goat-breeding practices within the regional marketing of the area, and a biannual Goat Festival has been introduced in Chefchaouen.

The case of the Chefchaouen GI shows that local knowledge itself is constantly undergoing reassessment and change, in discrepancy or entanglement with codified rules. For instance, breeding and veterinary practices have changed concomitantly with the implementation of the Ajabane Chefchaouen dairy. Several development programs, and an ANOC experimental farming and training centre located in the Bellota nearby hamlet, progressively imposed a shift from local goat breeds to more productive imported breeds, mainly Alpine and Mourciana, with the aim of increasing the milk production at the expense of reducing the milk's cheesemaking qualities. Together with the new breeds and their genetic standards, also the knowledge related to the farming system progressively changed. Veterinary treatments are overlapping traditional practices of animal health management. As an agronomist implementing a local research project on the goat value chain explained to us:

The spreading of European goats is complicated here. Farmers are not in the position to adequately control the reproduction system. Feeding is another problem: Alpine goats are big eaters, need abundant easy feed and are not content with the difficult grazing these arid mountains offer. So farmers are crossbreeding and by doing so they are probably mining the genetic diversity and bringing more economic dependency and uncertainty to their farming practices. (Authors' interview 2014)

The distribution of stainless milking pots to the cooperative milk suppliers, imposed by the dairy standards, had an impact on the management of the milk resulting in an overall improvement of its microbial quality. However, incompliance with established rules is common when rules tend to reduce milk-suppliers' revenue. The technical manager of the dairy complained: 'Just as an example, milk suppliers dilute milk with water and avoid stopping milking after using antibiotics' (Authors' interview 2015).

In the three case studies, we observed that cheesemaking evolves throughout the year to adapt to changes in the microbiology of milk, exposure to different techniques, and local experimentation. Practices change according to the sensory analysis of cheesemakers and their personal experience: all the senses are used for interpretation, e.g. curd is observed, touched, tasted. As a cheese technician used to working with Béarn transhumant shepherds explained: 'Shepherds can't use the pH tester in the mountain huts because there is too much humidity and little room to organise tools. Senses are crucial to partially control the acidification' (Authors' interview 2015). Such seasonal changes can eventually contradict codified rules. For instance, at the end of the lactation season, Béarn shepherds often add water to their milk when it becomes too dense and fatty to curd properly.

5.6. Discussion

Substantial research has been conducted on the direct impacts of the OFS specifications on the production process and final product. Authors have shown that OFS are built upon local practices (*art de la localité*), a common repertoire of practices embedded in a specific time and place, that are stabilized by the compliance to shared specifications (Bérard and Marchenay 2006 and 2008; Rangnekar 2011; May 2013). The negotiation of specifications, while generating a stabilization of practices, also privilege or exclude practices that correspond to different production logics and diverging interests (Barjolle 2006). However, very few comprehensive studies have been carried out on the dynamic gap existing between codified and tacit knowledge in OFS.

Mobilising the concept of CoP allows us to explore the constant negotiation and creation of knowledge and practices in OFS, in case studies that differ in terms of size, economic power of stakeholders, and motivation of the initiative. By looking at OFS as CoPs, our results help challenge the idea that OFS stabilise practices through the conformity of the OFS members with specifications. OFS are not unalterable initiatives that immobilise knowledge and practices, but—at least to a certain extent—OFS are framework for envisioning possible and changing futures. In a tension between past and future, OFS stakeholders engage in a cognitive process of selection of elements of their natural and cultural environment to valorise in new or renewed visions of their future. OFS may hence provide local communities with the tools to react to changes in their socio-economic context, and also strengthen the link between the community and the natural and cultural resources of their territory. Our results show, in fact, that: (i) beyond the specifications, a larger repertoire of tacit knowledge contributes to creating and strengthening a community; (ii) the borders of communities are dynamic places for testing and contesting practices; (iii) the discontinuities between specifications and tacit knowledge create spaces for change and innovation. In this section, we will discuss these three conclusions with reference to the current state of research.

Firstly, our results emphasize the importance of tacit knowledge, places, events, together with specifications, to strengthen the community, by building the perception of members' interdependence and promote trust and social cohesion. The negotiation of specifications is a pivotal aspect for the creation of the common project underpinning an OFS because—beyond setting the rules of the game and who may participate—it also determines the plurality of trajectories of its development. On one hand, being a community based on shared practices and common goal is a pre-condition of OFS because the preparation specifications implies a preliminary high level of collective action to undertake a collective self-reflection, as Barham and Sylvander (2011) argued. On the other hand, being a community is also a result of the specifications because the underpinning multi-stakeholder negotiation increases the 'collective appropriation' (Bienabe 2009) of the initiative. Through such reflection processes, producers enhance the perception of belonging to a place and a community, of sharing the same past and destiny, according to a 'logic of belonging' (Torre 2014) in a 'community of destiny' (Zimmermann 1995; Frayssignes 2005; Grasseni 2017:150). The case of Ossau-Itaty shows that even opposing stakeholders may converge and establish a common trajectory, formalized in specifications or in informal choices. Specifically, stakeholders have decided to anchor their activity in a

specific region (e.g. by determining the origin of the feed or the use of local breeds), aware of the fact that they will share the economic and environmental and cultural results of these choices. Demossier (2011:702), who unfolds the shared strategic discourse behind the prestigious Burgundy wines, addresses the same paradox:

By telling a story of a seemingly collective and well-organized community, which in reality was heterogeneous and fractious, the Burgundian elites have created a sense of belonging and have mobilized specific values to foster solidarity, rootedness, and cohesion while at the same time confirming their own individual economic and social status and selling their uniqueness at a global level.

Thus, our results are in line with Demossier, who emphasizes the cohesive role of a common narrative, stories, and collective representations. Moreover, our results are in line with authors who suggest instead the importance of tacit knowledge and physical proximity in strengthening interpersonal bonds and in facilitating transactions and collective action (Stuiver et al. 2004; Sonn and Storper 2008; Fonte 2010 and 2012; Storper and Venables 2004; Bruckemeier and Tovey 2009). Moreover, evidence from the case study of the Béarn mountain cheese Presidium confirms Grasseni's (2009) study that addresses the importance of 'contexts' and 'places' in which OFS operate, as cognitive and performative elements. For instance, a mountain hut can be seen as mediator of heritage structuring perception and interaction. These results echo Ingold's (2000) ecological approach on cultural belonging, suggesting that becoming part of a cultural group is a process of 'enskillment' and not enculturation⁴⁷.

Secondly, our results shed light on one of the natures of OFS as flexible communities with porous borders, where marginal groups of producers may challenge the trajectory of the OFS, outsiders are also influenced by the practices of the OFS, and consumers contribute to the definition of such shared practices. OFS are the result of a never-ending learning process occurring among various groups, including peripheral members of the CoP: local and migrant farmers, old and new generations, private and public organisations, extension services, and political institutions, experts, farmers, and tourists. By saying so, we overcome the idea that OFS are clubs (Torre 2002), strictly reserved to members holding a monopoly, or only a sum of individuals with converging interests, like in a network (Murdoch 2000; Goodman et al. 2011 and 2013).

Other authors have already noticed that practices adopted and promoted on the basis of voluntary regulation are able to influence larger groups of producers in the long term (Morgan and Murdoch 2000; Bager and Proost 1997). Our results complement such insight and suggest that consumers might be an active part of CoPs and engage in their food choices as 'co-producers' (MacDonald 2013; Grasseni 2014) or 'reflexive actors' who determine the quality of the product through their buying choices (Callon 1998). Scholars of the AFN have already emphasized that modified relations between consumers and producers are crucial to AFN initiatives where increasingly consumers engage with food with 'embedded relations' and, on local markets, share more bonds and belonging with producers (Murdoch and Miele 2004; DeLind 2002). Our results go a step further in

⁴⁷ See Bloch (2005) and its critique of cultural transmission.

focusing on the learning process occurring between producers and consumers (Opitz et al. 2017; Lamine 2015; Brunori et al. 2012; Morgan and Murdoch 2000). We found out that when producers and consumers share practices, they join in a mutual learning process where the tacit knowledge of context-based experiences—that is not easily codified—is transferred and renewed, as the case of the public event of the transhumance in Béarn showed. Sharing the project with consumers through direct experiences leads to a shared identity, the building and renewing of a common repertoire of practices and representations. We concur, therefore, with Goodman et al. (2011) who argue that it is possible to

conceptualize alternative networks as reflexive ‘communities of practice’ of consumers and producers whose repertoires create new material and symbolic spaces in food provisioning and international trade.

Third, instead of focusing on the continuities and repetition of patterns, as a large percentage of the literature on OFS, our results focus on gaps between codified and tacit knowledge. We observe that the resources mobilized in OFS, including knowledge and know-how, are under constant re-assessment. Specifications undertake revisions to mirror or to lead changes in practices, which are themselves under constant evolution. Practitioners build on previous experiences to react to contexts of production and consumption that have changed significantly; tacit knowledge is a large repertoire upon which to build changes, through daily practices. This flexibility of codified practices confirms Gade’s (2004) outline of the change of the specifications of Cassis wine, whilst the flexibility of tacit knowledge confirms Paxson’s (2010) insights on how US artisanal cheesemakers adjust ‘methods to work with rather than against seasonal and climatic variations in milk’.

Such changes in practices also occur by borrowing and learning processes based on contestation, confrontation, forgetting, and exclusion of knowledge. In particular, we found that the common project undertaken by OFS does not translate into constant cooperation, nor in places with ‘conflict-free, communitarian values of reciprocity and fairness that unproblematically “incubate” alternative economics forms and promote social justice and environmental sustainability’ (Goodman et al. 2011). Limits of OFS as communities built on economic interests have been already underlined. For instance, May (2013) argues that the community of 13 cheesemakers behind the Allgäuer Emmentaler GI is much less a community than what it shows. Beyond common training centres and shared consultants, self-interest dominates the initiative that generated the exclusion of the smallest producers. Siniscalchi (2013a) shows that Presidia may suffer similar problems. Unfair price calculation, inflated production volumes, or fraud may oblige Slow Food to close a Presidium. Our results confirm that the studied OFS communities are heterogeneous and conflictive, but suggest that conflicts might be seen as a positive resource. Gaps of knowledge and conflicts can lead to overcoming the risks of institutionalizing OFS, fixing practices and blocking innovation (Goodman et al. 2011). From the open or hidden confrontation of practices, in dialogue with scientists, public authorities and other stakeholders, innovative farming models can be envisioned and outlined whereas members’ interdependence is not undermined.

5.7. Concluding remarks

We began this article asking how communities engaged in the production of origin food can overcome the apparent paradox of institutionalising rules and sharing a common identity while adapting to ever-changing contexts. Considering OFS as CoPs allows us to overcome such paradox and discuss how origin food communities mobilise OFS for the multipurpose of sharing, challenging, and innovating their daily practices. Our results show that, starting from a collective self-reflection, specifications and tacit knowledge contribute to a stabilization of practices among practitioners engaged in an OFS or exposed to the practices of the OFS. Such self-reflection also results in a change of practices and representations, and paves the way for innovation in constant learning dynamics with the environment. We argued that the gap between what is codified and what is done leads to a dynamic redefinition of the specifications while challenging the community collective borders without necessarily weakening the community bond. As practices are highly context-dependent, the trajectory of change does not rigidly follow what is written in the specifications; practices are created in a dynamic twine.

To conclude, the findings in this paper contribute to some general comments on important yet underestimated elements in the study of food practices and knowledge in OFS. First, further research is encouraged to look at OFS initiatives with an approach surpassing the market interest (OFS as market tools) and the cultural interest (OFS as cultural phenomenon). Indeed, such communities also have an important cognitive and political dimension that this paper contributed to unfold. People involved in OFS share reflection and practices that contribute to outline a destiny, a vision of their future. Consumers can be potentially included in such communities as they become ‘enskilld’, share the practices and the commitment, with a sense of interdependency.

Second, after decades of neglect in favour of formal knowledge, fostering the sharing of practices and local knowledge offers an answer to the public concern of making origin food systems stronger and more resilient. As in other CoPs, OFS’s members support one another, create new knowledge in practice, and share an intentional commitment to improve their project, building on the shared experience. Tacit knowledge is an effective repertoire upon which origin food communities can draw on in times of crisis, compared to conventional agricultural chains that exclusively mobilise scientific knowledge, underestimating or stigmatizing the local and tacit forms of knowledge. Combining diverse forms of knowledge might result in further empowering farmers to manage their resources in more sustainably innovative ways.

Third, CoPs mobilising OFS are locally rooted, but also have a transnational dimension that is also change-generating. Social food movements like Slow Food might be considered as catalysers, offering transnational platforms for sharing and innovating practices of the communities involved into the Presidia project. Food movements might outline innovative forms of local territorial management and offer a repertoire of practices to pick from on a larger scale, to be adapted to local needs. Moreover, such social movements have a role in designing and disseminating innovative practices of consumption and, most importantly, generate a change in the appreciation of rural work.

CHAPTER 6

Synthesis and conclusions

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Synthesis and conclusions

6.1. Introduction: the aim of the study

This Thesis has been undertaken under the Agricultural Transformation by Innovation (AgTraIn) joint PhD programme that was financed by the European Commission. Its main topic was to foster innovation in farming systems addressing issues ranging from agricultural production and processing to value-addition and market access. Within this framework, this Thesis intended to explore Origin Food Schemes (OFS), and namely the Geographical Indication system and the Slow Food Presidia model, as collective tools for protecting cultural biodiversity, especially in mountain rural areas in France, Italy, and Morocco.

The literature review (Chapter 1) highlighted that there are limited studies on bio-cultural outcomes of OFS since research has mainly focused on their market outputs. Studies that addressed food qualities, practices, and knowledge in OFS focused on their contribution to the competitive strategies of economic actors (Sauvé and Valceschini 2003; Bramley et al. 2009). Beyond the programmatic aim of preserving local knowledge and biodiversity underlying OFS, their effects on knowledge (production and transmission) and practices in the local community have not been extensively studied. Moreover, we observe a gap in the literature on the confrontation between different OFS, except for the political and legal frameworks (Parasecoli 2017), and on how local actors understand them.

Therefore, the Thesis' overarching objective was to identify and explain the gap existing between the objectives and discourses developed by OFS on cultural biodiversity (CB) and their actual outcomes, and more specifically: (i) to further characterize the GI system and the Slow Food Presidia model in relation to their effects on CB; (ii) to explore the status of local knowledge within the knowledge dynamics underlying OFS; (iii) to assess major conditions of maintenance of CB within the OFS framework. A further underlying goal was to unfold the power relations underpinning OFS knowledge dynamics.

Chapter 3-5 presented the major findings of this Thesis that addressed our main topic from three analytical perspectives. First, Chapter 3 looked at the gap between the emergence of institutional discourses on CB within the GI system and Slow Food, and specific projects and practices aiming at its defence. Next, Chapter 4 looked at OFS collective governing bodies to assess the process of codification of knowledge and its effects on practices. Then, Chapter 5 explored knowledge dynamics considering a collective dimension that surpasses the OFS governing body and includes other relevant actors.

The remaining part of this chapter first answers the research questions based on the main findings of this research. This is followed by the discussion of the Thesis goals and more general conclusions, considering the contributions of the research towards the theory, methodology, and policies. Finally, this chapter provides suggestions for further research and concludes with some major statements.

6.2. Main findings

1. Which are the institutions and logics that determine the definition and practice of cultural biodiversity in origin food schemes?

The research began with the study of the emergence of a discourse on CB within the GI system (a state driven initiative) and Slow Food (a consumers' movement), and addressed how such discourses inform specific projects. This topic was explored through the lens of the management of cheese microbiodiversity, and in particular the debate on the use (or not) of selected bacterial cultures, or starters, which turned out to be a very interesting topic in which to read the diverging strategies of the selected schemes in relation to CB. A discursive perspective rooted in Foucault (1971) made it possible to understand CB as a historical and political discourse, differently elaborated and appropriated by institutions and local actors. The study went through the differentiation elements between OFS institutional discourses and showed that both GIs and Presidia are market tools with varied associated values, giving different meanings to the defence of CB. GIs underline the 'healthiness' and 'cultural' value of cheese microbiodiversity to develop an institutional and inclusive strategy of qualification based on common biological and cultural resources, understood as heritage. On the other hand, Slow Food mobilises the topic of cheese microbiodiversity to further develop its discourse on CB and capitalise on 'naturalness' as an exclusive moral value attached to food, omitting the constant technical management of microbiology and the reference to health benefits and risks. Table 6.1 sums up the main elements and values mobilised by the two OFS to refer and shape a practice on cheese microbiodiversity, and in particular on the use of bacterial cultures.

Table 6.1: Discursive elements referring to origin cheese microbiodiversity

	GIs	Presidia
<i>Taste</i>	Link to the origin	Unique to each farm, provides diversity and pleasure
<i>Health</i>	Immunity: human health benefits, safe cheese	-
<i>Status</i>	Heritage, depends on collective practices and knowhow	In extinction, natural
<i>Politics</i>	-	Key for farmers independence from industries, consumers' right to be informed
<i>Economics</i>	Key for collective market differentiation	Key for individual market differentiation
<i>Management</i>	Old collective practices and new institutional efforts (public research)	On-farm starters vs starters as shortcuts that good farmers and artisans are able to avoid

Source: author's creation

Moreover, the management of cheese microbiodiversity in three of the case studies selected in this Thesis (Piacentinu Ennese Presidium and GI, Ossau-Iraty GI, and Béarn mountain cheese Presidium) allowed us to show the diverging appropriation of CB by the actors of the same OFS. The analysis of the specifications suggested that the studied OFS

are at the forefront in integrating issues related to microbiodiversity and that they are generating changes in producers' practices. However, some practices that could further attach CB to the product are still unregulated (e.g. the management of the pastures in the two GIs and the transformation of raw milk in Ossau-Iraty) whilst other specifications do not have a consensual application (e.g. avoiding using starters in Presidia or the use of wooden tools). Moreover, numerous practices are tacit, not codified, revealing a more complex and adaptive 'ecology of practice' (Paxson 2013).

By doing so, the study disclosed the existing gap between these institutional discourses and what happens on the ground of CB. We found out that specifications alone are not enough to produce an effective change of practices, but time and personal sets of values are needed to assimilate new discourses and emerging societal concerns. This confirms the results of Caron and Boisvert (2010) and Bienabe (2009) that suggest that the search for a 'desirable' biodiversity, including microbiodiversity, plays an important role in the negotiation of both codified practices and individual strategies. Another insight gained from this third study is that market plays a prominent, but often hidden, role in shaping this gap. Diverging interests of local stakeholders, as well as those of institutions driving the OFS, and asymmetries of power between the stakeholders leading the project are crucial to the creation of a gap between the institutional discourse and practices in the field. This complements the results of some authors who have previously addressed the risk of the GI system of becoming just a market tool failing to attach origin food to CB and influence local practices (Durand and Fournier 2017; Vitrolles 2011; Fonte 2008); and of other authors who have underlined that actors in search of new markets may appropriate the Slow Food's discourse on biodiversity (Fonte 2006; Grasseni 2011; MacDonald 2013). The study has also demonstrated that despite limitations, the institutional narrative on biodiversity mediated by Slow Food as a pillar of its activity can offer local actors renewed political voice and empowerment by fostering the creation of communities of interests that include consumers.

2. How are knowledge and practices codified, and are rules applied?

Subsequently, the ambition was to come to a deeper understanding of the relationship between OFS and CB by looking at the practices that are shared and codified in the specifications of the four case studies (Chapter 4). This second study identified specifications as places where the unique qualities of origin food are objectified, and thus a crucial framework to explore the process of emergence of standardised practices associated to CB. In both GIs and Presidia, a collective governing body negotiates specifications within the framework of general rules: in the GI system, mandatory rules are linked to health and safety standards and to the quality link, whereas specifications of Slow Food Presidia are based on the best practices that producers can find in their territory, framed by guidelines aiming to improve the multilevel quality of food, i.e. its organoleptic, environmental, and social quality.

From this preliminary insight, we found that local actors have a wide freedom in the definition of the allowed and forbidden practices in the specifications, and this is in accordance to specific environments, or, in other words, OFS are highly context-dependent. On an institutional level, contexts vary because OFS initiatives have different

scopes. Two of the selected case studies represent the extremes of such differences: in Morocco, which is recently and rapidly implementing a national GI system, the main scope of the Chefchaouen goat cheese GI initiative is rural development through the implementation and marketing of an innovative product meeting the modern concerns on health and safety; in the French Pyrenees region of Béarn, renowned for its vibrant landscape of livestock and cheesemaking activities rooted in the past, the Presidium aims at changing the status of the marginal practice of transhumance and associated practices of daily mountain cheesemaking into an element generating added value and social recognition. On a local level, then, actors promoting and leading the OFS initiatives have different interests and understandings of heritage, locality, and quality that are reflected in the elaboration of the specifications, and consequently on the shared production practices underpinning the OFS.

The specifications of the four case studies have been analysed to show how traditional knowledge was differently taken into account, according to the analytical framework proposed by Ilbery et al. (2005) that considers the *3P* (*product, place, process*) as the main elements to ‘constructing difference’ in the market, thus as crucial elements to be defined and communicated. Results indicated that (i) confrontations of different strategic economic models underpinned by plural forms of knowledge challenge the primacy of local knowledge and determine its selection and delimitation, (ii) there is a gap between codified practices and the large variety of practices underpinning origin food depending on a judgment on the utilitarian value of local knowledge.

With regards to these two points, the study shows that the outputs of the codification of knowledge in specifications, as for traditional knowledge and practices, are controversial. As it is widely recognised, specifications directly preserve some genetic resources, taste, and know-how, but paradoxically the process of codification also results in adapting and reducing existing diversity, including in the OFS that are more attached to localised practices and to promoting diversity, such as the Béarn mountain cheese and the Piacentinu Ennese GI and Presidium. We recorded (de)limitations of process of production, local knowledge, stakeholders’ power, place, social inclusion, and tastes. For instance, the study found out that the studied OFS undergo a reduction of tastes that is functional to market demand: complex or unusual tastes that do not match market preferences are discarded. Moreover, the use of old labour-intensive tasks, the use of traditional cheesemaking tools that contravenes new health and safety regulations, and a variety of maturing styles are compromised by the effort of market promotion attempted by the OFS.

Further investigation of the capacity of producers and other stakeholders to influence the development of common rules showed that governance of the OFS and negotiations among operators is a determining factor in forecasting the effects of OFS on knowledge and practices. Our work disclosed the prominent role of the negotiations among operators’ opposing motives, strategies, and forms of knowledge, and confirmed the results of Parasecoli (2017), Rangnekar (2011), Barjolle (2006), and Fonte (2008), among others. These negotiations generate specifications where traditional practices of production are differently taken into account. The governing bodies of our case studies mediated the stakeholders’ strategies to reach a difficult agreement. We showed that when the actors’ heterogeneity increases and there is imbalance in their bargaining power, negotiations

became conflictive, confirming Dentoni et al. (2012) and Tregear et al. (2007) who underlined the effects of OFS heterogeneity on the restrictiveness of GI specifications. However, we also showed the possibility for less powerful actors to influence decisions, building strategies and supporting their claims with various forms of knowledge. Another important insight in relation to issues of power and knowledge is that, in the studied OFS, specific ‘authorities’ (e.g. cheese experts, Slow Food, GI tasting panels) justify the reduction of tastes and hide its market-driven implications, as concluded by Ulin (1995) about the role of wine experts on the standardisation of wines.

3. To what extent are codified and tacit knowledge and practices modified and re-created within OFS?

Understanding the knowledge dynamics in OFS at the level of the governing body is, however, insufficient to assess the impact of OFS on CB, unless a dynamic perspective is taken. The difficulty in understanding the effects on practices by looking exclusively at the negotiation and application of the specifications are twofold. Firstly, the borders of OFS are larger than the ‘club’ (Torre 2002) of OFS operators because other producers and stakeholders based in the area are also influenced and/or take active part in the initiative; then, specifications and the related codified and tacit knowledge are perpetually adapted and changed by operators. Therefore, the third study (Chapter 5), addressed the main research topic with a wider focus, i.e. on a collective dimension that includes also non-OFS members. In addition, we focused on dynamic aspects of knowledge. Chapter 5 considered OFS as ‘communities of practice’ (Lave and Wenger 1991) where OFS stakeholders, including consumers and other producers located in the region, interact in a learning process. The adopted dynamic and ecological perspective on practices and knowledge (Ingold 2000), allowed us then to explore dynamics of innovation of practices and production of CB in three case studies, the two intertwined from France (Ossau-Iraty GI and Béarn mountain cheese Slow Food Presidium) and the Moroccan one (Chefchaouen goat cheese GI). Such a study is based on apprenticeship as a method of investigation, that proved to be a privileged mode to access tacit knowledge and the creation of practices through the researcher’s direct involvement in the studied practical environment or ‘taskscape’ (Ingold 2000).

The study provided different insights on the knowledge processes underpinning OFS. We showed that learning experiences have a ‘bonding’ role, because they contribute to strengthening the shared identity and collective bond, and specifically: (i) dynamic and co-constructed specifications are used, together with tacit knowledge and places, as a tool to shape a community that shares a common interest; (ii) community borders are fluid: OFS also influence producers who are not members/operators and also engage consumers in shared practices and experiences, in particular in the case of Slow Food Presidia (iii) tacit knowledge is a precondition of the OFS initiative, but also the result of shared practices and activities.

A complementary contribution of the study is to the understanding of how learning processes are based on the ‘dynamic’ role of discontinuities that produce new local knowledge. These discontinuities lead to innovation and changes of practices, allowing OFS not to be crystallised initiatives. In this sense, OFS are a learning framework where

innovations are discussed and challenged to define which are acceptable and which are not, according to an ever changing context. Specifically, the main findings of the study show that (i) the daily practices of producers are underpinned by a large repertoire of tacit knowledge that surpasses and sometimes contradicts codified practices, (ii) the gaps or discontinuities of codified and tacit knowledge allow for innovation, (iii) specifications change to follow market or cultural concerns often in a conflictive way; (iii) the borders of CoPs are porous and may be crossed by producers willing to enter the OFS or outsiders/opponents of the OFS; (iv) practices change status and tacit knowledge is redefined.

These findings on the complementary role of learning in OFS complement the findings of other authors who have focused either on the first ‘bonding’ aspect (Barham and Sylvander 2011; Frayssignes 2005) or on the ‘dynamic’ aspect (Gade 2004; Paxson 2010; May 2013). In addition, the focus on ‘experiences’ for understanding the learning process occurring between producers and consumers complement the findings of Lamine (2015), Brunori et al. (2012), Morgan and Murdoch (2000).

A final relevant insight gained from this third study is the recognition of OFS as framework for envisioning possible and changing futures through practices, expanding what Goodman et al. (2011) argue. In fact, the analysed OFS have provided local communities with the cognitive tools to react to changes in their socio-economic context based on the renewed awareness of the link between a local community and the local natural and cultural resources of their territory.

6.3. Conceptualising the effects of OFS on cultural biodiversity

With these main findings from the studies based on the selected case studies, the analytical gaps underpinning the relationship between OFS and cultural biodiversity identified by this research are discussed below according to the main objectives of this Thesis.

6.3.1. Contrasting the GI system and the Slow Food Presidia model

The first objective was to further clarify the rich phenomenon of OFS in relation to CB and local knowledge, and to shed light on two relevant examples of OFS, started in Southern Europe and increasingly developing in the Global South: the GI system and the model developed by Slow Food with Presidia. Concerning this, we conclude that both initiatives have crucial commonalities and differences on two levels, i.e. (i) the institutional framework and (ii) the underpinning motivation and values, although, on the ground, differences are less clear-cut than expected.

A first level of confrontation relies on the institutional features of both schemes. Table 6.2 below, offers an overview over the two types of OFS and highlights their main differences. In common with the GI system, Slow Food Presidia involve public-private interaction and collaborative processes among various local actors. However, while GIs are mainly considered a public right and are owned and/or enforced by states or parastatal entities, Presidia are controlled by a consumer movement. Moreover, in the case of GIs, the right to

use the brand is collective, owned by a state on behalf of the producers leading the initiative in conformity with specifications. However, in the case of Presidia, Slow Food owns the project (and the Presidia brand, in the case of Italy and Switzerland) and gives the right to use the name of the Presidium to producers who respect the specifications, submitted to the movement for evaluation. A major difference is thus the form of protection provided by the two OFS: legal protection in the case of GIs *versus* activism based on personal engagement in Slow Food (Parasecoli 2017). This different form of protection is mirrored by a different control system, which is managed by a third party in GIs whereas it is based on producers' motivation and participatory methods in Presidia.

Our results suggest that such institutional features of the two OFS generate distinct problems in relation to traditional practices. In GIs, we observed the problem of access of the smallest producers and their most traditional practices, due to the barriers imposed by the OFS, e.g. safety standards and money contribution (Bowen 2010; Fonte 2008; Mariani et al. 2015; Mancini 2013). Conversely, regarding Presidia, practices and producers may be excluded by the Slow Food authority, according to its arbitrary judgment (Lotti 2010; West and Domingo 2012).

Table 6.2: GIs and Presidia institutional features

	Geographical Indications	Slow Food Presidia
<i>Creation</i>	Paris Convention 1883, incorporated into TRIPS 1994	2003
<i>Diffusion</i>	All TRIPS countries, 84 countries developed a <i>sui generis</i> system	69 countries
<i>Status</i>	Collective IP rights owned by states or a parastatal entity	Projects; <i>Slow Food Presidium</i> brand in Italy, Switzerland, and for coffee, owned by Slow Food association
<i>Duration</i>	Unlimited in time	Until the objectives are met or conditions change
<i>Delivery</i>	Approved by a public procedure, the state	Slow Food Foundation for Biodiversity
<i>Applicant</i>	Formally recognised producers' organisations	The Foundation assesses the launch following a request from national or local Slow Food associations or, when network is weak, by NGOs or public institutions.
<i>Control</i>	Self-auditing carried out by the GI operators, internal controls carried out by the governing body of the GI, and inspections carried out by third party control bodies, according to the control plan defined by each GI	Collective self-auditing, including inspections by Slow supporters, 'participatory certification', no third-party controls
<i>Enforcement</i>	State enforcement. In EU, the European Court of Justice resolves conflicts among member states, under the TRIPS framework.	The Slow Food Foundation resolves conflicts.

Created from multiple sources (Author's research; Grote 2009; SFFB 2018, OriGIn 2018)

On a second level of confrontation that relates to values and motives, our results show that both OFS aim at increasing competitiveness in a market niche by justifying an added value on the valorisation of local biological and cultural resources (see Table 6.3). Both OFS mobilise CB by referring to similar ‘ontologies of nature’ (Escobar 1998), based on its market value. On one hand, GIs insist on the link between CB and the uniqueness of products, and their cultural and geographical environment, as main attributes of quality. Traditional knowledge and practices prove the authenticity of the link between a place and the product, protecting against imitations. Moreover, the collective selection and recognition of traditional practices to be included into the specifications strengthen the GI farmers’ organisation. While doing so, the GI system attempts to hide the reduction of diversity and standardisation effects generated to guarantee a certain degree of homogeneity and recognisability of products, and the collective, inclusive aspect of the initiative.

On the other hand, Slow Food Presidia value traditional knowledge *per se* and emphasise the rareness of engendered products, based on the best practices that exist in a territory, in an economy of singularity (Karpik 2010). Communication about endangered foods is thus focused on the exceptionality of local traditional practices and the moral goodness related to the effort of preserving CB. While doing so, Slow Food communication aims at hiding or minimising the market influence in consumers’ eyes. Specifically, the need of a traditional endangered food to be sold on the modern segmented market and, thus, to meet its quality criteria, is voluntarily underestimated.

Table 6.3: GIs and Presidia main motives and values

	Geographical Indications	Slow Food Presidia
<i>Objectives</i>	Protection of the use of a name against fraud or unfair competition.	Protection of a traditional product, production practice, rural landscape or ecosystem at risk of extinction.
<i>Selection criteria</i>	Reputation or quality linked to a place. Exceptions are place names which have become generic names, and place names referring to plant or animal varieties.	<ul style="list-style-type: none"> • Organoleptic excellence according to local criteria and SF • ‘Identity’ or ‘memory’ products linked to a place for history and culture • Produced in limited quantities by small farms or producers. • Real or potential risk of extinction • Environmental sustainability of production techniques • Producers’ wish to collaborate together and with Slow Food
<i>Product characterisation</i>	Origin link: direct link between the place and the product characteristics Definition of the area, specifications, control plan and authorities, proof of origin	Guidelines for each category of product Definition of the area Definition of the specifications based on the best practices selected by producers and SF Foundation
<i>Associated outcomes</i>	<ul style="list-style-type: none"> • Added value - competitiveness 	<ul style="list-style-type: none"> • Environmental: defending biodiversity and improving

<ul style="list-style-type: none"> • Rural development • Defending agri-food diversity • Benefit to less-favoured rural areas • Developing environmentally sustainable food systems 	<ul style="list-style-type: none"> • sustainability • Economic: increasing producer income and employment • Social: improving the social role and self-esteem of producers • Cultural: strengthening food culture and rural identities
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Created from multiple sources (Author's research; Peano and Sottile 2012)

The above-mentioned features demonstrate that these types of schemes offer considerable flexibility and opportunities in the recognition and valorisation of traditional knowledge. However, beyond this overall confrontation, the OFS features and potentials vary depending on the national economic and legal context. While the legal definition of GI in Italy and Morocco is almost identical to that used in France⁴⁸, it diverges in 'the way that the legislation has been enforced and translated in practice' (Bowen 2010). Moreover, different countries are more or less open to bottom-up initiatives in rural development (Donner et al. 2017). In France, since the beginning of the twentieth century, producers' organisations have been highly supported by national institutions defining an institutional space for developing origin food within a general widespread industrialisation of agriculture (Delfosse 2007; Allaire et al. 2005). Italy boasts a more diverse origin food landscape, characterized by persistence of traditional products and practices (Fonte 2008; Grasseni 2016). The governmental support to origin food initiatives is more recent and formal initiatives outside state control have emerged (Grasseni 2016; Siniscalchi 2013). For instance, private initiatives like Presidia seem to be more successful than the GI system in Sicily (Lactimed 2013). Very differently, in Morocco, rural development in the origin food domain is characterized by top-down initiatives, reflecting a wide institutional effort in initiating and implementing the GI legal protection system for at least two reasons: the search for alternatives due to the growing competition for conventional products on European markets (and increasingly on the national market too) and an institutional desire to promote products from specific know-how in disadvantaged rural areas (Hamimaz 2009). Our results show that local stakeholders insufficiently appropriate such institutional efforts.

In addition, our analysis underlines some of the peculiar features that distinguish OFS from other market tools meant to differentiate quality food on the basis of its origin, namely institutional or collective place brands, or trademarks referring to a place (Grote 2009; Donner 2016). Although all these initiatives (i.e. GIs, Presidia, place brands and trademarks) rely on the same mainly economic rationales, i.e. protection against free riding by other economic actors, reduction of consumer asymmetric information, and promotion of several place-specific assets, we hereby summarize some crucial points that exclusively characterize GIs and Presidia.

- Production is locally rooted. A multilevel connection to the territory is guaranteed, not only the manufacturing place.
- The link between 'product and place' derives from a specific process of production,

⁴⁸ This also applies to the large majority of *sui generis* GI systems developed worldwide (Bowen 2010; CIRAD 2017; WIPO 2004).

local knowledge, and culture embodying food (production and consumption) habits.

- Food quality is well known, documented, and linked to a geographical region that makes the product different from another manufactured elsewhere. Historical data are mobilised in GIs whereas oral memory is also crucially taken in account in Presidia.
- The production process is a collective heritage that belongs to the producers' community. Specifications are public and fully accessible. GIs are IP rights on the use of a place name, but not on the production process. Communicating the production process to consumers and other producers, including potential competitors, is crucial.
- GIs and Presidia cannot be sold or licensed, and are generally not subject to renewal (Josling 2006).

These elements should be considered to determine which is the best place-based market tool according to specific goals. They may suggest that OFS are the most suitable initiatives for the defence of traditional practices.

6.3.2. Knowledge dynamics and status of local knowledge

The second research objective was to understand the relevance of traditional knowledge, both in theory and practice, in the knowledge dynamics that characterize the GI system and Slow Food Presidia. This Thesis is nurtured with the idea that knowledge and practices mobilised in OFS are the result of confrontations where local actors, on all levels, have agency in appropriating, interpreting, reinventing different forms of knowledge. As a consequence, the development of a collective initiative such as OFS is the result of complex dynamics, and not linear processes, where discontinuities (or gaps) between policy (and the related discourse) and practice can be observed.

This insight into OFS is rather new, although single aspects have already been covered in literature (success factors of OFS: Acampora and Fonte 2007, Giovannucci et al. 2009, Barham and Sylvander 2011; codification of knowledge *versus* innovation: Mancini et al. 2016, Bérard et al. 2016, Vuylsteke et al. 2005; heritage: Grasseni 2016, Faure 1998, Bessièrè 1998). This Thesis has gone further by considering OFS as both an initiative of rural development rooted into a socio-economic context and a framework for knowledge exchange and cognitive envisioning.

Combining the relevant (i) (Anglo-Saxon) literature on AFN, embeddedness, and rural sociology, (ii) (French and Italian) studies on heritage and *terroir*, and (iii) recent approaches to 'ways of knowing', allowed us to gain a broader understanding of knowledge dynamics in OFS. This suggests that the study of OFS should incorporate approaches from different academic cultures and disciplines to effectively consider the fundamental link between cultural and economic outputs of OFS. This is necessary for explaining the complex and context-dependent nature of OFS, as well as on the outcomes on traditional knowledge, practices, and foods.

Gap between tacit and codified knowledge

Firstly, the findings from the research show that in both GIs and Presidia, traditional knowledge enters a process of 'heritage making', starting from the identification of intangible cultural heritage and ending with its promotion. 'Heritage making' results in

gaps between tacit and codified knowledge that can be understood in two complementary ways. On one hand, this means that OFS operate choices and exclusions of practices and knowledge, according to context-dependent rationales. On the other hand, this means that OFS regulate only a few aspects of food knowledge leaving many elements open to determination and recreation by individual actors. This research emphasized in fact that a large variety of practices is framed and limited by specifications (Chapter 4), and then that specifications are a core instrument in the (re)creation of practices within a learning-by-doing process of constant adaptation (Chapter 5). By doing so, our results shed light on the specifications as a crucial element in the knowledge dynamics of OFS. In fact, specifications operate a selection and reduction of the variety of local practices and variants; create awareness among actors of the relevance of a selection of practices; and determine the final result, i.e. the intrinsic and extrinsic quality attributes (Esejel 2008) of the product, and more in general the organisation of the production system. All such features of specifications constantly change according to changing environment and individual trajectories. Such process is framed by cultural and economic dynamics, that make it peculiar to each initiative, and that this research contributed to unfold. For instance, in the Chefchaouen area and in the Béarn Pyrenees, tourism emerges as an element intertwined and enhanced with local foods. Food practices and representations are selected to be appealing to the target customers (see also Bessièrè 1998).

Our conclusion here is that in any case, linking an OFS to specific varieties or breeds, as a consequence of the search for productivity or market demands, ends in marginalising other genetic resources despite being biologically and culturally relevant (Larson 2007). The necessary standardisation of know-how appears to be not fully compatible with the requirements of maintaining biodiversity.

Gaps between production and consumption knowledge

A second relevant gap disclosed by this research is the one between food production and food consumption, also illustrated by a gap of knowledge. Literature agrees in emphasising the role of OFS in reducing consumers' misinformation and correcting the information asymmetry (Akerlof 1970; Dupuy and Torre 1998; Goodman et al. 2010). In this sense, knowledge exchanges between producers and consumers are key to embeddedness (Polanyi 1966), trust among producers and consumers, and the reduction of the 'anonymity of the market' (Fine 2004:20) exclusively based on profit. Our conclusion on this aspect is that rural knowledge cannot go without another type of lay knowledge, the one of consumers, especially urban, in the successful alternative local configurations of the food systems. This is particularly true in the case of food made with demanding traditional techniques. We found that the gap between the food knowledge embodied by producers and the one embodied by consumers is reduced by the studied OFS in two main intertwined ways, i.e. informative labels and direct relationships. We discuss below these attempts to outline 'new ways of knowing' and generating knowledge supporting the project of creating an alternative food economy (Fonte 2010:5).

First, from the case studies analysis, it became evident that when consumers and producers lose their direct relationship, labels are drivers for knowledge and increased consumers' awareness with outputs that depend on the degree of institutional commitment. In Europe, for over two decades, the CAP has driven a narrative on the diversity of food products,

coupled with sustainability and food identity, by means of the GI system. Marketing, research⁴⁹, and communication initiatives have highly supported this key competitiveness strategy for EU rural areas. Differently, we showed that in Morocco, the GI system is still not recognised by local stakeholders despite a growing institutional effort to educate consumers about the meaning of the GI system as well as producers about the advantages of the GI legal protection. Nevertheless, findings from our case studies suggest that in the European cases as well as in Morocco, institutional communication driven by GI labels alone can fail in making consumers more aware of the specific practices of production and their implications (in terms of labour, tastes, and environmental outputs). The Slow Food model underlines the limits of a synthetic labelling system that is referred to as hermetic and misleading because it provides information on the production practices only implicitly, i.e. by allowing public consultation of specifications. A corrective action designed by Slow Food are the 'Narrative labels', back-labels that give details about the varieties or breeds, cultivation techniques, processing, place of origin, and animal welfare. These labels provide a tool for community building, based on storytelling, pictures of the producer and of the place of origin. Findings from this research allow us to hypothetically conclude that a more narrative, comprehensive labelling strategy would increase consumers' awareness and knowledge in particular when the message is customized in relation to the specific audience, coming from different cultural and productive background.

Then, OFS promote direct relationships between producers and consumers, and, by doing so, foster exchanges and creation of knowledge between them (Ilbery and Kneafsey 2000). Our findings showed that GIs and Presidia can be thus considered 'communities of practice' that include consumers and are strengthened by practical experiences (Chapter 5). Although sharing knowledge within a renewed network of personal and practical relationships is a main feature of both studied OFS, our conclusion here is that Slow Food surpasses the GI system in this respect for two reasons.

First, Slow Food, more than GIs, tends to operate in a 'geography of regards' (Sage 2001), where consumers and producers meet: people, with their bodies and senses, are back. Farmers markets (Earth Markets in Slow Food jargon, where people meet producers 'getting more than food in exchange for their money') and educational programs and events, for children and adults, are the tools to build a community where producers and buyers join in long-lasting relationships.

Then, Slow Food shapes and reproduces reciprocal knowledge communities based on an 'imagined trust'⁵⁰. The Slow Food Presidia are underpinned by shared communitarian values, or 'domestic trust' (Torre and Dupuis 2004) despite operating also beyond spatial proximity. The community of Slow Food is cosmopolitan and its network of 'imagined trust' works on an international level: Terra Madre meeting, tourism happening along the Slow Food communities, collective action promoted by campaigns (like that of raw milk),

⁴⁹ This Thesis also meets to the EU effort in implementing the GI system in relation to contemporary societal needs, including outside the EU borders.

⁵⁰ The Italian term used to refer to the leader of a local group of Slow Food supporters, i.e. the Convivium, is 'fiduciario', where 'fiducia' means trust. 'Fiduciario' is the person producers and consumers, i.e. the Slow Food community, rely on.

creation of a new awareness (e.g. on the use of starters), and a widespread communication effort.

Gap between narrative and experience

Our research shows that market factors provide limits to the potential of OFS to promote knowledge exchanges between producers and consumers through labels and direct relationships. As suggested by Guthman (2004) about other labels, such as Fair Trade and organic, '[e]thicality becomes a fetish itself in that the consumer is left simply to trust that the label speaks for itself'. Differentiating labels risk becoming a type of façade to manipulate how consumers interpret the quality of goods (Guthman 2004).

We found out that OFS can be used as vectors of values and evaluation easily manipulated for market purposes. For instance, the interconnection between standardisation and differentiation of food is voluntarily hidden to strengthen OFS marketing strategies, as shown by the misunderstandings generated by the new labelling system that distinguishes onfarm from industrial Ossau-Iraty GI (Chapter 5). In addition, consumers tend to accept without reflection that Presidia products are better, although Slow Food wants to surpass label 'aesthetic veneers' (Murdoch and Miele 2004) and train consumers about the intrinsic quality of food. Taste Workshops aim to educate consumers' palate to a codified approach to food that is shaped by the Slow Food quality values and developing strategy (Chapter 3). This leads to another gap disclosed by this research, a gap between narrated and experimented taste, as illustrated by the narrative of Piacentinu Ennese as a traditional cheese and its current taste that is much more consensual, milder, than it used to be. Similarly, Grasseni (2005) points out that a discourse on taste diversity, and on the capacity of discerning good and complex tastes, is recurring within quality schemes. In the cheesemaking Alpine region that she studied, '[l]ocal development seems to be bound to its capacity to produce a vision of locality and a discourse of taste that suits the expectation of tourists and deli customers' (Grasseni 2005). Our conclusion here is that all the studied experiences of OFS strengthen a system where differentiation of food is mediated by labels and told, more than experienced on a sensory basis, despite the widespread effort of Slow Food to outline a food knowledge system based on a sensorial, experiential, and personal approach to food and food choices.

Gap between product and reputation

All the above-mentioned gaps disclosed by this research illustrate a crucial conceptual point, i.e. the ambiguity of the notion of tradition underpinning OFS. The notion of tradition cannot be taken for granted but needs to be unpacked and contextualised. As Lenclud (1987) suggested, tradition can make a reference alternatively to (i) conservation over time, (ii) a cultural message, or (iii) a mode of transmission. Moreover, the idea of traditional food and practices holds different meanings in different countries. In this respect, our findings show a continuum among the case studies. On one extreme, in Morocco, *terroir* and local know-how are hardly taken in account by OFS, despite what national regulation suggests. The concept of 'tradition/traditional' hardly apply there, where notions of change and loss based on a linear and historical organisation of time seem to be less relevant to local population. We witnessed instead a different organisation of food-related values and meanings, focusing on the concept of *beldi*, i.e. made by known

and trusted people in a close rural area, in opposition to industrial and anonymous production standards, *roumia*. ‘*Produits de terroir*’, such as the Chefchaouen goat cheese, however, hardly fit the category of *beldi* and the related market niche. On the other extreme, in Italy, Piacentinu Ennese is made with wooden tools forbidden by the EU regulation, and, in France, Béarn mountain cheese valorises the marginal practice of transhumance. The concept of ‘tradition/traditional’ applies there to the persistence of techniques from the past and, to a lesser extent, to a mode of knowledge transmission highly valued by locals. Ossau-Iraty, between the extremes of the continuum, illustrates the case of a (mainly) industrial product that built on the image of a traditional mountain cheese production, allowing the combination of artisan and industrial practices, in a country where ‘tradition/traditional’ are marketing attributes. Evidence on this issue suggest that questioning the coherence between market and tradition allows the disclosure of gaps between product image, representations, and local practices, that reflect forms of alignment or shifts in different contexts. This mirrors a gap between product and reputation, in particular when it becomes long distance trade relations that compromise relations based on trust.

6.3.3. *Conditions to maintain cultural biodiversity*

The third objective was to gain insights into the potential of OFS to influence CB and, based on this, to develop a framework for assessing which conditions are needed to have positive effects, while guaranteeing potential for change and innovation.

A first conclusion is that a preliminary aspect needs to be considered, i.e. the ontological dimension of CB. This research confirms that OFS and cultural biodiversity are both fluctuating social constructs. It is widely recognised that the setting up and use of OFS are splintered between the understanding and interests of different local stakeholders and institutional choices, and framed by socio, technical, economical realities (Barjolle 2006). On the other hand, the discourse on CB is not singular and has an ontological and narrative dimension (Chapter 3). CB seems to be, translating the words of Bruckmeier and Tovey (2009:7) about sustainable development, a common ‘symbolic platform [...] on which the different actors can meet, using the same concepts while still following their specific aims and purposes’. The results of this Thesis, thus, outline an analytical approach aiming at understanding the role of OFS in maintaining CB by considering institutional discourses and local stakeholder appropriation, without searching for a unifying vision directing the production of knowledge and action.

Here we summarize the main CB success factors that this research disclosed.

- (i) Institutional awareness and commitment to value and protect CB. It is evident from the research that the effect of OFS on CB is highly influenced by the national context. Whereas in Europe, the GI system and Presidia have a long history and have included institutional concerns on CB, heritage, and traditional knowledge, in Morocco the GI system has been recently initiated to answer to a demand of productivity and safety that does not favour CB. Our results suggest that the Chefchaouen goat cheese corresponds to an institutional strategy of development based on a relatively new product, an invented tradition (Hobsbawm and Ranger 2012), rather than at the defence of the cultural and biological resources.

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- (ii) Comprehensive design of specifications. Local actors' appropriation of the goal of maintaining CB can be successfully reflected in the definition of the design of the specifications about production area, techniques, and final product characteristics. All these elements contribute to affect the value of local resources in the supply chain and its externalities, such as the protection of the Pyrenees mountains. Conversely, the imposition of rigid barriers due to an excessive institutionalisation of OFS would limit 'adjustments and cross-fertilization' (Abarca 2004).
 - (iii) 'Enskilling' consumers to complement the labelling strategy. Public policies can contribute to make consumers' choices more informed about origin food CB by fostering the sharing of practices and knowledge. This state effort can be successfully complemented by consumers associations, such as Slow Food, or by producers themselves, though the development of sensorial experiences such as the Cheese Route of the Ossau-Iraty. Sensorial experiences are key elements in learning processes, transforming information into embodied knowledge, and possibly a deeper awareness of complex dynamics related to CB.
 - (iv) Favouring local consumption and local economies. CB is rooted into a place and culture and emerges in connection to local identities. Bounding the OFS (also) to local markets, instead of exclusively privileging more appealing long distant markets, should have a positive effect on CB, understood also in relation to the diversity of consumption habits. In addition, the local communities, besides the codified norms, have an important role in enhancing CB by both preserving and generating new diversity.
 - (v) Joint conservation initiatives on multiple resources. Activating joint conservation initiatives to promote and safeguard varieties excluded from the specifications could counter the over exploitation of a single resource. This includes seed banks, botanical gardens (Roussel and Verdeaux 2007), and also the participation of OFS producers' organisations in local network of actors devoted to preserving rural activities and creating added value for their region (for instance, through correct water and pesticide management, and landscape planning).
 - (vi) The coexistence of both studied OFS. The cases of Piacentinu Ennese and Ossau-Iraty allow for a further insight about the coexistence of both OFS on the same (or similar) product⁵¹. Authors have emphasised risks of cognitive overload and confusion among consumers exposed to a growing number of voluntary labels (Parasecoli 2017), what Goodman (2004) refers as 'label fatigue'. However, our findings suggest that such coexistence produces a dynamic reflection in relation to

⁵¹ Several Presidia have been launched in Europe for products that are already protected by a GI. In these cases Slow Food considered protecting particular techniques of production or territorial borders that are not adequately defined by the GI. Formally, all Presidium producers must adhere to the GI and the Presidium specifications is thus an extension of the denomination that fixes more restrictive rules. In these cases, the Presidium name must correspond with that of the GI, without any other addition. Differently, when the distance between the trajectory of the Presidium and the GI are divergent, as in the case of Bitto cheese GI in the Italian Alps, Presidium producers have decided to exit the GI and renounce the use of the historical name.

CB, on the reasons and ways to manage local resources. In the case of Piacentinu Ennese, the two initiatives were launched in the same year, in a complementary and consistent strategy, and are based on the same specifications. In Béarn, limits of the Ossau-Iraty GI in relation to traditional practices motivated the creation of two Presidia to value the mountain cheeses produced in Béarn and in the Basque Country. The efforts on specific marginal resources have multiplied without undermining a collective initiative such as the Ossau-Iraty that has positive effects on the conservation of local breeds and pastoralism. A lack of consistency between the GI and Presidia stimulated a progress in the Ossau-Iraty strategy on CB.

As a general conclusion, it became evident from this research that conditions needed for OFS to have a positive impact on CB are not crucial in every circumstance.

6.3.4. Underpinning power relations

The introduction to our study declared the underpinning goal of unfolding power in OFS knowledge dynamics, based on the assumption that language does not describe, but creates reality (Escobar 1995) and that all kinds of knowledge are not neutral, but are shaped and reproduced by power (Foucault 1981). The notion of discourse was used in this Thesis to examine how the OFS discourse on CB embodies elements of geopolitics, as post-structuralist critiques suggest (Ferguson 1990; Hobart 1993; Escobar 2005). However, our approach recognises local actors' room for action (Schönhuth 2002; Mosse 2004). Understanding these systemic and dynamic relations of power is key in assessing the setting up and non-market related outputs of OFS.

First, we showed that OFS are 'technologies of governmentality', providing a major insight into OFS that is not commonly covered in socio-economic literature. With the notion of 'governmentality', formulated by Foucault (1991), we illustrated how states design the government of territories and populations, directly (as in the case of state-owned and controlled GIs) or indirectly (through a consumers' movement mainly financed by public funding). Understanding OFS as 'technologies of governmentality', and thus of power, demonstrates their contribution to transform a common belonging to a community into a 'common good with limited property' (May 2013), 'inspired and justified by one or more scientific rationales, according to contingent 'strategies'' (Silva and Santos 2012). By doing so, OFS define a conduct and limit possibilities for action (Chapter 4). For instance, producers located outside the Piacentinu Ennese production area are excluded from the use of the traditional name of Piacentinu. Consequently, they reduce their cheese price by importing cheaper saffron and pasteurising milk because competition on the same category of (origin) product, without referring to the traditional name, would be arduous.

Conversely, in Morocco, we showed that the Chefchaouen goat cheese GI threatens traditional practices, knowledge, and identities. The implementation of the GI system is entangled with Western categories of development and transferred knowledge, coupled to a specific discourse, a set of knowledge and interventions. Notions and practices of safety and productivity contribute to shaping and controlling the reality where they are applied, while depreciating local practices. Such transferred discourse embodies geopolitics. This confirms, among others, Van der Ploeg's (1993) work on Andean farming that shows that

development programs transferring knowledge to farmers threaten their identity, hidden by a strategy of empowerment.

However, two considerations limit such critical insights into the implementation of OFS as ‘technologies of governmentality’. Firstly, as Fonte (2010) argues, ‘to avoid a commons, a *res universitatis* (i.e. a thing belonging to everybody in a community) becoming *res nullius* (a thing belonging to nobody), it is necessary to devise protective institutions’, like the ‘new regimes of regulation’ described by Rose (1986). Anonymous market pressures would highly threaten mountain people’s CB in absence of institutional efforts to reverse the trend. Then, recognizing that OFS are also ‘technologies of governmentality’ of people and territories does not exclude local agency and contestation, as our findings and ethnographic literature on cultural heritage show (Grasseni 2017; Herzfeld 1991). Cultural heritage, indeed, ‘is a major social arena of struggle between individuals and groups that make use of their power relations in order to promote their particular and often divergent interests or withdraw’ (Silva and Santos 2012).

Next, as we have already developed, findings show that OFS trajectories are influenced by power imbalance between stakeholders’ and their knowledge. The negotiation of specifications is a highly controversial moment in which power relations are displayed and stronger local stakeholders can overcome and exclude marginal actors and practices.

Then, the trajectories of OFS are influenced by authorities of knowledge whose contribution is often hidden to consumers’ perception. Our results showed, for instance, that Slow Food is acting as an authority defining the framework of which (moral) qualities have to be valued and which discarded. Taste is a crucial element on which Slow Food has built its influential role on producers and consumers by educating palates to discriminate and justify production choices. In Ossau-Iraty, similarly, tasting panels have a crucial role in building homogeneity of tastes and practices and excluding diversity, although not as much as in French and Italian GI wines, where tasting panels are mandatory to monitor the typicality of wines recognised by the same GI on an annual basis (Gade 2004).

Finally, our findings suggest that OFS are interesting tools for reducing the asymmetry of information and the ‘deskilling effects’ on producers and consumers generated by the modernisation of agriculture. In particular, OFS include consumers as a part of the learning community and empower them, unlike labels providing information to passive consumers.

6.4. Methodological implications (and limits)

This Thesis has emphasised the advantage of using ethnographic tools to explore different case studies and understand the contemporary and complex knowledge dynamics in OFS. The selection of case studies was done on purpose to outline a diversity of settings where OFS have been developed on mountain cheeses with divergent results. Differently from Yin (1994), who advocated for a case study method where generalisation is based on deduction, this Thesis carried out a multi-site data collection nurturing a cross-cultural confrontation. A cross-cultural confrontation approach was used, thus, to juxtapose data and interpret them in a broader perspective. This approach also differs from the

comparative method widely used in anthropology in the past, from the seminal work of Tylor (1889), to analyse different cultures of the same period and understand similarities and differences of a phenomenon across cultures, or the origins of specific cultural facts (Bock 1966). Despite critiques⁵², an interesting modern legacy of the comparative method is widely practiced, although not always acknowledged, to verify general hypotheses and explore cross-cultural repetition (Schneegg 2014).

This Thesis, instead, did not apply the comparative method to prove a general theory, but it is based on the assumption that the data collected are specific and context-dependent. Therefore, we demonstrated the potential of nurturing the interpretation of data with multiple points of view based on primary data collected among few cases. While the conclusions drawn from this study are only applicable to the selected case study, we hope that policy recommendations drawn from this study can help to understand the variability, context dependency, and flexibility of OFS.

Two methodological choices were made to investigate cultural biodiversity in origin cheese. We prioritized the role of traditional knowledge and practices, and thus have looked only partially at the biological resources. In addition, we focused on a level of biodiversity that is less covered by literature: the microscopic one that concerns micro-organisms, a biological ‘capital’ that is part of the *terroir* (Bérard and Marchenay 2006), and that is nevertheless highly manipulated and controlled by human practices. Participant observation was particularly fruitful to be consistent with these two methodological choices, because it allowed us to capture the abundant tacit knowledge underpinning the management of cheese microbiodiversity that escapes codification and that microbiological studies cannot fully disclose. In making these choices, we are aware of the fact, only partially emphasised, that cheesemaking is also about creating synergies between a landscape, pasture, and breeds, and thus we shed light on the relevance of choices of the husbandry system, including pastoralism or the reintroduction of local breeds threatened with extinction.

This Thesis shed light on another methodological issue: how to deal with tradition. Anthropologists are dedicated *par excellence* to the analysis of the most traditional facts and forms of social life. However, following a large stream of literature (Lenclud 1987; Hobsbawm and Ranger 1984; Rocha 2005), this Thesis has pointed out that the terms ‘tradition/traditional’ are ambiguous both in terms of theoretical approach (outlined in 6.3.2.) and in terms of methods of investigation. Regarding the methodological ambiguity, our goal of understanding the controversial role of tradition/traditional practices in OFS raised the concern of how to consider traditional knowledge. This preliminary question continued appearing during the research process. Some researchers have explored and given account of traditional knowledge through a discursive ‘thick description’ (Geertz 1973), based on interpretative approaches (Roncoli et al. 2002; Fernando 2003), whereas other authors have built a systematic, quantitative evaluation related to the creation, distribution, and erosion of traditional knowledge (Rocha 2005). This research, instead, did not attempt to extensively describe nor to measure what is traditional, because both approaches would have failed in revealing dynamics of knowledge in constant production.

⁵² See Boas’ (1896) opposition of the evolutionary approach underpinning the comparative method.

This research aimed instead at investigating how local OFS stakeholders deal with and consider traditional knowledge relevant by asking where it is learnt (the so-called cultural imprinting), who are the authorities recognised in case of problems, and their willingness to embrace change. In addition, instead of questionnaires, repeated observations and informal interviews as close to private conversations as possible allowed the informant to freely express and allowed this Thesis to better capture gaps and discrepancies between discourses and practices. Apprenticeship proved to be a key method in revealing knowledge of the process of being interpreted, recreated, and shared, and thus giving account of context-dependent dynamics.

6.5. Practical implications for policies and OFS management

The implications for policies and OFS management are derived from the key findings of this Thesis: confronting two types of OFS, understanding the processes and dynamics of knowledge and practice within OFS, from production to consumption, and understanding the conditions of maintenance of CB.

Regarding policy, the evidence provided suggests that the defence of cultural assets of biodiversity, beyond genetic resources, should be strongly recognised as of public interest, and thus targeted by public policies. The attachment of OFS to CB is a controversial feature that adds barrier of cost, collective management, and effective enforcement as the reasons for the controversial success of OFS in the Global South. Results from this research can provide clues to efficiently adapt and foster OFS as tools for the defence of CB, whereas, at this time, GIs are not conceived as legal tools for the defence of CB. States could highly influence the use of GIs to be more environmentally and culturally friendly. Thus, we recommend that public policies provide a regulatory framework that addresses the goal of the defence of CB through OFS. This should be complemented by fixing minimum requirements for specifications, like the indication of using local specific resources when available, as is prescribed by Presidia.

Public recognition of traditional practices as heritage and ‘public richness’ is a preliminary element to have policies that take into account diversity of food related practices. OFS that successfully consider CB could provide a model for recognizing traditional practices (and practitioners) to design food trade, and health and safety regulations that critically assess the gap between safety standards and traditional practices that centuries of consumption have proved the product safe and not condemn producers who refuse or cannot employ industrial standards.

Then, the elements of confrontation between different origin food initiatives (6.3.1.) suggest that policy makers and rural developers should evaluate which are the best type of initiatives to develop according to specific contexts and considering both the overall goal of the initiative and the motivation of local actors. It seems that combining GIs and Presidia that have different governance systems and public-private partnerships could be an effective strategy when OFS have complementary scopes, as in the case of Piacentinu Ennese.

Moreover, due to the specificities of the mountain cheese production, evidence suggest that fostering communication and public understanding of a ‘mountain’ label could add a significant contribution in correcting the information asymmetry, and also have a larger impact on the territory being used as a tourist asset. Based on the evidence collected, we hypothesise that a specific label could be designed, such for instance a Heritage Label Mountain, to be adapt and communicated in relation to specific areas (e.g. Pyrenees, Rif).

A crucial recommendation to policy makers engaged in OFS and CB is considering people not as objects of policies by active actors. This has methodological and ontological implications. Policy should favour the creation of space for exchange and participation, such as Salone del Gusto-Terra Madre, and build on producers’ understanding and strategies related to CB, being the first experts and users of it. In Morocco, in particular, the potential of developing successful OFS is high, but the Chefchaouen case study witnesses the limits of a top-down initiative that is hardly acknowledged by local actors that, if engaged from the beginning, could have provided different (and more CB friendly) GI specifications and have further appropriated and used the scheme.

Regarding the local management of OFS, the case studies located in the French Pyrenees—a landscape characterized by high CB—provide insights to make two alternative recommendations. One recommendation is to set up OFS based on the delimitation of small size area of production, corresponding to distinctive products. This should be associated with multiplying the number of OFS on the same product category and thus valorising a multiplicity of territories and specific biocultural resources, instead of reducing diversity. Alternatively, another option is to consider the whole system of production beyond the product, for example associated crops, or other usages of the territory necessary to be maintained. OFS, in that case, would protect the whole ecosystem and it would be more difficult to overexploit or erase resources because this would alter the ecosystem.

6.6. Suggestions for future research

The relevance of OFS as tools for sustainable rural development is worldwide phenomenon. In this Thesis, we confronted old (France and Italy) and new (Morocco) settings of OFS establishment, but we limited our scope to the Mediterranean area where a considerable cultural biodiversity is commonly appreciated. Further research could look beyond the Mediterranean area, where traditions and legal systems favour collective dimensions over individual, innovative choices and trademark protection (Parasecoli 2017:27). How are OFS differently understood and set up in relation to traditional practices in such non-Mediterranean contexts?

In addition, research should be conducted on how to combine GIs and Presidia with other schemes that protect food and bio cultural heritage with a territorial approach, e.g. labelling of cultural landscape under UNESCO World Heritage, or the Globally Important Agricultural Heritage Systems (GIAHS) Partnership Initiative coordinated by FAO. The combination of several initiatives, levels and types of protection, and diversity of public-

private actors could be further explored to assess their potential to valorise traditional practices.

Finally, the issue of control systems (see Guthman 2004; Bonnaud and Joly 2012) was only partially covered by this Thesis, despite its relevance in the current debate about the outcomes of GIs and Presidia. Marie-Vivien et al. (2016) explored the outcomes of the 2006 reform establishing a third party control for French GIs and showed the limits of such systems of control in transforming practices and cultural elements into standards. Conversely, Presidia are based on participatory certification of local supporters, educated to understand the cultural aspects of origin food, but it could be difficult to scale up (Olson 1956). Considering the limits of the current GI system and the experience of Presidia, further research could help to design effective auditing system for GIs, that rely on local 'connoisseurs', besides laboratory analysis and inspections (de Sainte Marie and Bérard 2005).

6.7. Perspectives and conclusions

This Thesis started by asking how to identify and explain the gap existing between the institutional objectives and narrative developed by OFS on cultural biodiversity and their actual outcomes on local traditional knowledge. We showed that GIs and the Slow Food Presidia are voluntary labels giving new meaning to food products with a discourse that capitalises on cultural biodiversity, knowledge and practices to different extents. These discourses shape what GIs and Presidia projects are, and the maybe contradictory effects they have, such as an opposition to traditional practices and meanings.

Although CB offers a unifying vision and discourse capable of directing the production of knowledge and action, we showed the confrontations of actors and knowledge determining the creation, appropriation, and outcomes of such discourse. As a result of the previous analysis, we identified several analytical gaps in the relationship between OFS and cultural biodiversity that are dynamic and changing with time and contexts. Being OFS context-dependent devices, no fixed answer can be given to our research question. The gap depends on the cases (institutional context, involved actors, including consumers, and societal concerns); it varies between countries and within countries.

As the most common factor among our case studies, we showed that OFS exist between local and global dynamics. OFS meet complementary efforts in localisation and embeddedness, and the interaction with a non-local or distant markets, and that this double, apparently contradictory, trend has to be understood together. CB is important for food security and resilience of communities, but it takes on new meaning when cultural and biological resources leave the locality, the identity of a community, and become commercially relevant on a global scale. As Parasecoli (2017:15) contends, 'globalization provides the cultural space for localities to acquire cultural relevance and for biodiversity resources to become commercially relevant outside their place of origin'. Writing product specifications, thus, means making an effort to craft the locality into a food that can then enter a (relatively) distant market. It implies "the 'translation' of marginal agriculture into

a globalised practice” (Grasseni 2005). But to do that, the good has to fit into the marketplace and, consequently, is limited by its rules.

In this conclusion, we want to stress two final points to put our results in a broader perspective. First, this Thesis suggests that origin cheeses are potential factors to reconnect urban and rural communities facing industrial standardisation and disconnection from food production. Cheese OFS establish a strong link between the process (i.e. process of production and the techniques) and place, and this generates more outcomes than competitiveness in a market niche. OFS cheeses are potentially interesting tools in protecting biodiversity because they are based on complex production systems, ranging from grazing management to the choice of maturing facilities. The various resources make up an interdependent system and, thus, the risk of overexploiting one single resource is inferior. Comprehensive product specifications, as designed in several studied cases, can help to consolidate these interdependent systems over time, progressively including new practitioners. It is interesting to ask if OFS built around mountain origin cheese, that integrate several elements of the ecosystem and landscape in their product specifications, could be a model for other products.

Second, this Thesis contributes to the open debate on the potential of alternative food initiatives to scaling up and not involve only “the ‘interstices’ (Renard 1999) of globalisation: the spaces left empty by the standardisation process of the agro-industry” (Fonte 2010). Our work suggests that a fixed answer would be reductive. As Appadurai (1988) contends, things may change status and be fetish or not according to use, although both studied OFS are a product of neoliberalism. The possibility to scale up seems difficult, based on the numbers of market constraints disclosed by this research. However, changes in those ‘interstices’ can be seen as resistance and ‘an offensive strategy’ (Fonte 2010) against globalisation, in so far as OFS provide the institutional tools to avoid commodification of cultural resources by big players. In addition, OFS that are successful in re-embedding and re-localizing food give a relevant cognitive contribution. Based on those experiences, it is possible to envision a different future and empower producers and consumers in relation to the food system. In that sense, OFS become tools that are interesting because they recognise the importance and create communication channels for CB and traditional practices, rather than ‘protect’ or ‘fix’ them. Consequently, policies could frame, without condemning local practices.

FRENCH AND ITALIAN SUMMARIES

Résumé détaillé de la thèse

Les frontières contestées de la biodiversité culturelle: une exploration des connaissances et savoirs dans les produits d'origine. Exemples de fromages méditerranéens.

1. Introduction

En réponse aux besoins croissants des marchés, des stratégies organisées de qualification des produits sur la base de l'origine sont devenues une nouvelle tendance institutionnelle à partir des années 80 et un atout important dans le modèle agricole européen (Tregear et al. 2007; Fonte 2010). En plus, de nouvelles formes de réglementation (semi-)privée menées par des organisations non gouvernementales ont été mises en œuvre via des systèmes volontaires de labélisation de l'origine. Ce phénomène, nommé dans cette thèse, Systèmes de Valorisation de l'Origine (SVO), est illustré par les Indications Géographiques (IG) et les Sentinelles Slow Food qui, bien que provenant de l'Europe méridionale, deviennent également économiquement et politiquement pertinentes dans les pays du Sud. Les IG sont un instrument de propriété intellectuelle qui confère à des groupes de producteurs le droit exclusif d'utiliser le nom d'un lieu lors de la commercialisation de produits dont la réputation et la qualité sont directement imputables à cette origine culturelle et géographique. Les Sentinelles sont des projets mis en œuvre par l'organisation internationale Slow Food dans le but de protéger des aliments locaux menacés.

Dans un contexte général d'érosion de la biodiversité agricole et de perte de spécificités alimentaires locales, les décideurs politiques, les mouvements sociaux et les chercheurs se sont penchés sur les atouts potentiels des SVO pour préserver ou valoriser la biodiversité, que l'on qualifie de biodiversité culturelle (BC) pour souligner l'importance accordée aux pratiques et aux savoirs locaux (Bérard et Marchenay 2006). Les SVO sont considérés donc comme l'une des réponses politiques, juridiques et économiques pour faire face à l'érosion de la BC, parce qu'ils donnent une reconnaissance économique et culturelle à des ressources et pratiques locales spécifiques tout en encourageant le développement durable, en particulier dans les zones rurales marginalisées (Blakeney 2013). Cependant, la littérature scientifique remet en cause et questionne l'efficacité de ces SVO. Il semble y avoir un certain écart, ou un *gap*, entre ce que ces initiatives racontent et les pratiques qu'elles produisent (Bowen 2010). Cette thèse vise donc à explorer l'écart entre les « discours » (Foucault 1971), c'est-à-dire les objectifs politiques, les connaissances systématisées et les narratives qui sous-tendent le développement des SVO, et les pratiques locales (explicites et implicites). Elle contribue ainsi aux débats scientifiques et politiques sur la contribution bio-culturelle des SVO.

La thèse repose sur deux prémisses : (i) que la biodiversité culturelle est affectée par le système agroalimentaire, en particulier la gouvernance des SVO, et (ii) que les connaissances et pratiques locales sont ancrées et construites localement, et non héritées ou transmises. Par conséquent, en examinant les communautés locales impliquées dans plusieurs IG et Sentinelles Slow Food en France, en Italie et au Maroc, cette recherche

tente de qualifier les conditions d'émergence et les conséquences de ces discours sur la biodiversité culturelle. L'effet des SVO est-il celui qu'ils aspirent à avoir ? Quels sont les facteurs qui pourraient améliorer ou, au contraire, figer ces expériences de localisation des aliments au regard de la préservation de la diversité ?

Cette thèse justifie la pertinence d'étudier les SVO en les plaçant dans un large contexte sociétal: (i) l'émergence des SVO dans des différents contextes géographiques; (ii) la prévalence de deux SVO, à savoir les IG et les Sentinelles Slow Food; (iii) la pertinence croissante de tels systèmes dans les politiques rurales récentes en faveur du développement durable, en particulier dans les zones de montagne; et (iv) le rôle croissant du savoir traditionnel dans le débat sur le développement durable.

La question de recherche qui sous-tend cette thèse émerge donc d'un domaine scientifique multidisciplinaire axé sur les relations entre l'économie, le territoire et la culture, que l'on peut qualifier de *Food Studies*. Dans notre approche, l'analyse du phénomène des SVO et la dynamique sous-jacente des connaissances sont intrinsèquement pluridisciplinaires, mais elles sont néanmoins très centrales dans le débat de la géographie contemporaine abordant les relations entre les sociétés et leur espace dans la dimension économique également. Les différentes composantes interdépendantes des SVO (politiques publiques et politiques privées indépendantes, systèmes de production agroalimentaire, composantes socioculturelles et cognitives) ne peuvent être comprises qu'en faisant référence à différents modèles d'interprétation mobilisés au niveau de la géographie, de l'anthropologie et de la socio-économie. La question de recherche a donc été examinée en faisant référence à la littérature scientifique de la géographie et de l'anthropologie des aliments sur les implications socioculturelles des produits d'origine, la littérature sur les études rurales et les réseaux alimentaires alternatifs (AFN), et les études des connaissances, afin de fournir des idées diverses et complémentaires, dans une approche multidisciplinaire.

Déroulement de la thèse

La question de recherche est explorée à travers trois angles différents qui correspondent à trois unités d'analyse (c'est-à-dire trois niveaux principaux de *gap*). Comme point de départ, nous décrivons l'écart entre les discours institutionnels et les pratiques dans les cas français et italiens (Chapitre 3). Deuxièmement, nous caractérisons l'écart entre le discours co-construit dans les cahiers des charges et le savoir tacite, au sein des organisations collectives, en mobilisant quatre études de cas (Chapitre 4). Enfin, nous explorons l'écart entre les discours collectifs et les connaissances tacites des membres du SVO, en utilisant des données provenant de France et du Maroc (Chapitre 5).

Ces unités d'analyse sont associées à trois autres objectifs transversaux. Le premier objectif est de caractériser le système IG et le modèle des Sentinelles Slow Food, la prise en compte de la BC par ces systèmes et leurs effets. Le deuxième objectif est d'explorer la dynamique des connaissances associées aux pratiques de production et de comprendre le statut des connaissances locales dans le développement des SVO. Le troisième objectif est d'évaluer les conditions pour la préservation de la BC. Afin de répondre à ces objectifs, un autre aspect est abordé simultanément, à savoir l'exploration des relations de pouvoir qui sous-tendent le lancement, le développement et les effets d'un SVO.

2. Méthodologie

Le Chapitre 2 de cette thèse présente la méthodologie de recherche adoptée pour saisir et illustrer les récits et les pratiques quotidiennes sur la biodiversité culturelle des parties prenantes des SVO. Compte tenu de la pluridisciplinarité des références théoriques, de la complexité des phénomènes qui relient la production, la transformation, nous mobilisons plusieurs méthodes pour explorer quatre études de cas, qui sont des SVO de fromages d'origine de montagne reconnus comme IG et/ou Sentinelle Slow Food. Le cœur de cette étude s'est basé sur des enquêtes anthropologiques et a consisté en 24 mois de travaux de terrain ethnographiques multi-sites, en France, Italie et au Maroc. Un objectif important est de défendre la valeur de l'observation participante, et en particulier l'utilisation de l'« apprentissage » comme outil de recherche pour étudier les pratiques incarnées, *embodied*, et fondées sur l'expérience (Marchand 2010).

La justification de la sélection des études de cas, à la suite d'enquêtes territoriales, est discutée : (i) la sélection des pays : Italie, France et Maroc, (ii) l'identification d'un produit alimentaire (fromage de montagne artisanal) et (iii) le choix final des études de cas : une IG (fromage de chèvre Chefchaouen, Maroc), une Sentinelle qui recoupe partiellement une IG (fromage d'estive du Béarn et Ossau-Iraty, France), et une IG qui est également une Sentinelle (Piacentinu Ennese, Italie).

Ce chapitre présente de manière critique le processus de recherche. Premièrement, nous examinons comment la préparation du travail sur le terrain repose sur une réflexion sur l'éthique de la recherche et la négociation de l'accès aux lieux et aux informateurs appropriés. Ensuite, nous décrivons la phase de collecte de données principalement ethnographiques sur plusieurs sites pendant le travail sur le terrain (à travers l'observation participante, des entretiens semi-structurés et informels avec producteurs, consommateurs et autres parties prenantes locales, et le repérage de sources écrites). Ensuite, nous présentons l'analyse des données qui a pour but de façonner une réflexion sur chaque étude de cas et ensuite de la placer dans une perspective plus large en tenant compte de la manière dont les expériences locales sont liées aux processus nationaux et mondiaux, à travers une approche interprétative.

La deuxième partie du Chapitre 2 présente et situe les quatre études de cas. Nous décrivons le contexte économique et institutionnel du lancement et du développement des SVO (système IG et Sentinelles Slow Food). Nous présentons ensuite les quatre études de cas sélectionnées quant à leur localisation géographique, l'origine historique du produit et du SVO, les caractéristiques du produit et des producteurs impliqués dans le SVO : le fromage de chèvre de Chefchaouen (IG), au Maroc, le fromage d'estive du Béarn (Sentinelle) et le fromage Ossau-Iraty, en France, le fromage Piacentinu Ennese (Sentinelle et IG), en Italie.

3. La biodiversité culturelle expliquée, (non) correspondance de discours et pratique

Ce chapitre explore l'émergence d'un discours sur la biodiversité culturelle dans le cadre du système des IG (une initiative menée par l'État) et de Slow Food (un mouvement de consommateurs), et examine comment ces discours influencent des projets spécifiques. Il s'appuie sur l'analyse des discours sur la gestion de la biodiversité du fromage, en particulier les débats sur l'utilisation (ou non) de cultures bactériennes sélectionnées, ou

« starters ». La mobilisation de la perspective discursive de Foucault (1971) permet de comprendre la BC en tant que discours historique et politique, élaboré et approprié différemment par les institutions et les acteurs locaux. L'étude présente les éléments de différenciation entre les discours institutionnels des SVO, montrant que les IG et les Sentinelles sont des outils de marché avec des valeurs associées variées, donnant des significations différentes à la défense de la BC. Les IG soulignent l'aspect « santé » et « culture » de la biodiversité du fromage pour développer une stratégie institutionnelle inclusive de qualification basée sur des ressources biologiques et culturelles communes, considérées comme patrimoine. Slow Food, quant à lui, mobilise le sujet de la biodiversité du fromage pour développer davantage un discours sur la BC et capitaliser sur le « naturel » comme valeur morale exclusive attachée à l'alimentation, en omettant la gestion technique constante de la microbiologie et la référence aux bénéfices et risques pour la santé. En outre, la gestion de la biodiversité du fromage dans trois des études de cas retenues dans cette thèse (la Sentinelle et IG Piacentinu Ennese, l'IG Ossau-Iraty et la Sentinelle du fromage d'estive du Béarn) a permis de montrer l'appropriation divergente de la BC par les acteurs d'un même SVO. L'analyse des études de cas a montré que les SVO étudiés étaient tous à l'avant-garde au niveau de l'intégration des questions liées à la biodiversité et ont engendré des changements dans les pratiques des producteurs. Cependant, certaines pratiques qui pourraient davantage valoriser la BC (par exemple, la gestion des pâturages dans les IG ou la transformation du lait cru à Ossau-Iraty) continuent à ne pas être réglementées et d'autres pratiques codifiées dans les cahiers des charges sont contournées lors de l'application (par exemple, la prohibition d'utiliser des « starters » dans les Sentinelles ou l'utilisation d'outils en bois). De plus, un grand nombre de pratiques sont tacites, non codifiés, révélant une « écologie de la pratique » particulièrement complexe et adaptative (Paxson 2013).

Ce faisant, l'étude a révélé l'écart existant entre ces discours institutionnels et ce qui se passe sur le terrain. Nous avons découvert que le cahier des charges seul ne suffit pas à produire un changement efficace des pratiques, mais que le temps et l'ensemble des valeurs personnelles sont nécessaires pour assimiler les discours émergents et les nouvelles préoccupations. Cela confirme les résultats de Caron et Boisvert (2010) et Bienabe (2009) qui suggèrent que la recherche d'une BC « désirable », y compris au niveau de la biodiversité, joue un rôle important dans la négociation des pratiques codifiées et des stratégies individuelles. Cette étude montre aussi que le marché joue un rôle important, mais souvent caché, dans la détermination de cet écart en raison des intérêts divergents des parties prenantes locales et des institutions qui dirigent le SVO. En effet, les asymétries de pouvoir entre les parties prenantes menant le projet sont déterminantes dans la création de l'écart entre le discours institutionnel et les pratiques sur le terrain. Cela complète les résultats de certains auteurs qui ont précédemment abordé le risque que le système IG ne devienne qu'un outil de marché qui ne fait pas le lien entre le produit et la BC, éloigné des pratiques locales (Durand et Fournier 2017; Vitrolles 2011; Fonte 2008); et d'autres auteurs ont également souligné que les acteurs en quête de nouveaux marchés peuvent s'approprier le discours de Slow Food sur la biodiversité (Fonte 2006; Grasseni 2011; MacDonald 2013). L'étude a également démontré que malgré des limitations, le discours sur la biodiversité mobilisé par Slow Food comme pilier de sa communication et de son activité peut offrir aux acteurs locaux une voix politique et une autonomisation

renouvelées tout en favorisant la création de communautés d'intérêts incluant les consommateurs.

4. Le paradoxe de la réduction de la diversité pour la défendre

Le Chapitre 4 vise à mieux comprendre la relation entre SVO et CB en examinant les pratiques partagées et codifiées dans les cahiers de charges des quatre études de cas. Le cahier des charges est considéré ici comme un objet où les qualités spécifiques et uniques du produit d'origine sont objectivées, et donc comme un cadre crucial pour explorer le processus d'émergence des pratiques standardisées associées à la BC. Dans les IG comme dans les Sentinelles, un organisme collectif de gouvernance négocie des règles spécifiques dans le cadre de règles générales. Dans le système IG, les règles spécifiques doivent respecter les normes d'hygiène et de sécurité alimentaire, ainsi qu'au lien de la qualité à l'origine, tandis que les cahiers des charges des Sentinelles contiennent une sélection des meilleures pratiques qui peuvent être trouvées localement, encadrées par un guide visant à améliorer la qualité organoleptique, environnementale et sociale des aliments.

À partir de cet aperçu préliminaire, nous montrons que les acteurs locaux jouissent d'une grande liberté dans la définition des pratiques autorisées et interdites dans le cahier des charges, conformément à des environnements spécifiques. Autrement dit, le SVO dépend fortement du contexte. Sur le plan institutionnel, les initiatives peuvent montrer des objectifs différents. Deux des études de cas sélectionnées représentent des situations extrêmes: au Maroc, qui a récemment mis en place un système national d'IG, l'initiative sur le fromage de chèvre de Chefchaouen a pour principal objectif le développement rural à travers la promotion d'un nouveau produit qui répond aux préoccupations modernes en matière de santé et de sécurité ; à l'opposé, dans la région pyrénéenne française du Béarn, réputée pour son paysage d'élevage et ses activités fromagères enracinées dans le passé, la Sentinelle vise à défendre la pratique marginale de la transhumance associée à la fabrication de fromage en haute-montagne, en transformant leur statut en élément générant une valeur ajoutée et une reconnaissance sociale. Au niveau local, les acteurs qui dirigent les SVO ont des intérêts et des compréhensions différents du patrimoine, de la localité et de la qualité, qui se reflètent dans l'élaboration du cahier des charges et, par conséquent, des pratiques de production partagées. C'est le cas de l'Ossau-Iraty, où des bergers transhumants côtoient des groupes industriels dans le développement de l'IG, dans le but de rendre le produit plus typé.

L'analyse des cahiers des charges des quatre études de cas repose sur le cadre analytique de Ilbery et al. (2005) qui considère les trois éléments du *produit*, du *lieu* et du *processus* comme les principaux éléments de la « construction de la différence » sur le marché. Elle permet de vérifier comment les connaissances traditionnelles sont prises en compte. Les résultats montrent que (i) les confrontations entre différents modèles économiques stratégiques étayés par des formes plurielles de connaissances remettent en cause la primauté des connaissances locales et déterminent leur sélection et leur délimitation (par exemple, la pratique locale d'emballer les fromages frais dans du palmier nain est exclue du cahier de charges de l'IG de Chefchaouen, car elle est considérée non-conforme à la demande d'hygiène des consommateurs modernes), (ii) il existe un fossé entre les pratiques codifiées et la grande diversité des pratiques tacites qui relèvent de la nourriture

d'origine en fonction d'un jugement sur la valeur utilitaire des connaissances locales (par exemple, la pratique lourde et dangereuse de la fabrication sans ferments n'est pratiquée que par des rares bergers béarnais, malgré ce soit l'objectif de la Sentinelle).

En ce qui concerne ces deux points, cette analyse contribue à montrer que les résultats de la codification des connaissances sont controversés. Le cahier des charges préserve directement certaines ressources génétiques, des goûts et des savoir-faire, mais, paradoxalement, le processus de codification entraîne également l'adaptation et la réduction de la diversité existante des pratiques et des goûts, y compris dans les SVO les plus attachés à promouvoir la diversité, comme la Sentinelle du fromage d'estive du Béarn et la Sentinelle et IG du Piacentinu Ennese. Nous avons relevé plusieurs niveaux de (de)limitation: dans le procédé de fabrication du fromage, au niveau des connaissances locales, du pouvoir des parties prenantes, de l'aire de production, de l'inclusion sociale et des diversités organoleptiques. Par exemple, les SVO étudiés témoignent d'une réduction fonctionnelle des goûts par rapport à la demande du marché : les goûts qui ne correspondent pas aux préférences du marché sont rejetés. En outre, les efforts de promotion du marché déployés par les SVO compromettent la survie de tâches traditionnelles exigeantes, l'utilisation d'outils anciens de fabrication de fromage, et les divers styles d'affinage et goûts complexes.

L'étude de la capacité des producteurs et des autres parties prenantes à influencer l'élaboration des règles et le processus de normalisation montre que la gouvernance du SVO et les négociations entre opérateurs sont des facteurs déterminants dans la prévision des effets du SVO sur les connaissances et les pratiques. Les négociations parmi les opérateurs, opposant différentes motivations, stratégies et formes de connaissance, jouent un rôle prépondérant ; cela confirme les résultats de Parasecoli (2017), Rangnekar (2011), Barjolle (2006) et Fonte (2008), entre autres. Ces négociations génèrent des cahiers des charges où les pratiques de production traditionnelles sont différemment prises en compte. Les organismes de gestion des SVO de nos études de cas ont assuré la médiation des stratégies des parties prenantes pour parvenir à un accord (souvent difficile à obtenir). Nous vérifions que lorsque l'hétérogénéité des acteurs augmente et qu'il existe un déséquilibre dans leur pouvoir de négociation, la négociation devient conflictuelle, confirmant Dentoni et al. (2012) et Tregear et al. (2007) qui ont souligné les effets de l'hétérogénéité des SVO sur le caractère restrictif des cahiers des charges des IG. Cependant, nous montrons également la possibilité pour des acteurs moins puissants d'influencer les décisions, de développer des stratégies et de soutenir leurs revendications avec différentes formes de connaissances. Un autre aperçu important de cette étude par rapport aux questions de pouvoir et de connaissance est que des « autorités » spécifiques justifient une telle réduction de pratiques et notamment de goûts en cachant les implications du marché dans les SVO étudiés, comme conclu par Ulin (1995) sur le rôle des experts du vin sur la normalisation des vins.

5. Savoir en mouvement : apprentissage et changements de pratiques

Comprendre la dynamique des connaissances dans les SVO au niveau de l'organisme de gestion est cependant insuffisant pour évaluer leurs effets sur la biodiversité culturelle, à moins qu'une perspective dynamique ne soit prise en compte. En effet, se limiter à la négociation et à l'application du cahier des charges relève d'une difficulté double.

Premièrement, les frontières du SVO sont plus amples que celles du « club » (Torre 2002) des opérateurs, car d'autres producteurs et parties prenantes basés dans la région sont influencés et/ou participent activement à l'initiative ; en plus, les cahiers des charges ainsi que les connaissances codifiées et tacites correspondantes sont perpétuellement adaptés et modifiés par les opérateurs. Par conséquent, la troisième étude (Chapitre 5) aborde la relation BC et SVO avec un angle plus large. L'accent est mis sur une dimension collective du SVO qui dépasse ses membres et sur les aspects dynamiques de la connaissance. Le Chapitre 5 considère le SVO comme une « communauté de pratique » (Lave et Wenger, 1991) où les parties prenantes, y compris les consommateurs et les autres producteurs de la région, interagissent dans un processus d'apprentissage. Ce chapitre propose d'explorer les dynamiques d'innovation des pratiques et de production de biodiversité culturelle dans trois études de cas, les deux françaises (la Sentinelle du fromage d'estive du Béarn et l'IG Ossau-Iraty) et la marocaine (l'IG du fromage de chèvre de Chefchaouen). Pour ce faire, nous mobilisons une perspective dynamique et écologique des pratiques et des connaissances (Ingold 2000). Cette perspective se base notamment sur l'apprentissage en tant que méthode d'investigation, considéré comme un mode privilégié d'accès à des connaissances tacites et à la création de pratiques grâce à l'implication directe du chercheur dans l'environnement pratique étudié ou « taskscape » (Ingold 2000).

Ce chapitre montre d'abord que les expériences d'apprentissage ont un rôle de « liaison » car elles contribuent à renforcer l'identité partagée et le lien collectif des SVO: (i) les cahiers des charges, dynamiques et co-construits, sont utilisés avec les connaissances tacites ainsi que des objets et des lieux partagés dans la formation d'une communauté qui poursuit un intérêt commun (comme dans les cas des fêtes et des concours fromagers au Béarn) ; (ii) les frontières communautaires sont fluides : les SVO influencent également les producteurs qui ne sont pas membres/opérateurs et engagent également les consommateurs dans des pratiques et des expériences partagées, en particulier dans le cas des Sentinelles Slow Food (où les consommateurs sont davantage mis en relation avec les producteurs, lors de visite de fermes, ateliers du goûts et marchés paysans) ; (iii) la connaissance tacite est une condition préalable, ainsi que le résultat de pratiques et activités partagées.

En complément de l'analyse des processus d'apprentissage qui sous-tendent les SVO, il est démontré que les processus d'apprentissage sont « dynamiques », donc basés sur des discontinuités qui produisent des nouvelles connaissances locales. Ces discontinuités contribuent à l'innovation et à des changements de pratiques, permettant aux SVO de ne pas être des initiatives sclérosées. En ce sens, le SVO est un cadre d'apprentissage où les innovations sont discutées afin de définir celles qui sont acceptables et celles qui ne le sont pas, selon un contexte en constante évolution. Plus précisément, nous vérifions que (i) les pratiques quotidiennes des producteurs sont étayées par un vaste répertoire de connaissances tacites qui dépasse et parfois contredit les pratiques codifiées ; (ii) l'écart ou les discontinuités entre connaissances codifiées et tacites engendrent de l'innovation ; (iii) les modifications des cahiers des charges afin de suivre les préoccupations marchandes ou culturelles passent souvent par un processus conflictuel (comme dans le cas des conflits dans l'Ossau-Iraty visant à transformer un produit de masse dans un produit de niche) ; (iii) les frontières des communautés de pratique sont poreuses et peuvent être franchies par d'autres producteurs (comme l'arrivée de nouveaux bergers hors-milieu montre sur les

Pyrénées béarnaises) ; (iv) les pratiques changent de statut et la connaissance tacite est redéfinie.

Ces éléments d'analyse du rôle de l'apprentissage dans les SVO ont abouti à des conclusions complémentaires à celles d'autres auteurs qui se sont concentrés sur le premier « aspect de liaison » (Barham et Sylvander 2011; Frayssignes 2005) ou sur l' « aspect dynamique » (Gade 2004; Paxson 2010; May 2013). De plus, l'accent mis sur les « expériences » pour comprendre le processus d'apprentissage entre producteurs et consommateurs complète les conclusions de Lamine (2015), Brunori et al. (2012), Morgan et Murdoch (2000).

Enfin cette approche par les apprentissages et la dynamique des connaissances contribue à la reconnaissance des SVO comme cadre cognitif pour envisager des futurs possibles et changeants par le biais de pratiques, faisant écho aux conclusions de Goodman et al. (2011). En effet, les SVO analysés ont fourni aux communautés locales, les outils nécessaires pour réagir aux changements de leur contexte socio-économique, basés sur la prise de conscience renouvelée du lien entre une communauté locale et les ressources naturelles et culturelles locales de leur territoire.

6. Synthèse et conclusion

Ce chapitre, après avoir répondu aux questions de recherche sur la base des principales conclusions présentées aux Chapitres 3, 4 et 5, discute les trois objectifs de la thèse, en soulignant en dernier point les aspects de pouvoir sous-jacents aux dynamiques de la connaissance au sein des SVO ; puis, il conclut par des considérations générales sur la méthodologie, les applications et l'ouverture de nouvelles perspectives de recherche.

Le premier objectif était de clarifier davantage la contribution des SVO dans la préservation et la valorisation de la biodiversité culturelle et les connaissances locales. Nous concluons que les IG et les Sentinelles ont des points communs et des différences cruciales à deux niveaux, à savoir (i) le cadre institutionnel et (ii) la motivation et les valeurs sous-jacentes des membres. Nous démontrons que ces systèmes offrent une flexibilité et des opportunités considérables dans la reconnaissance et la valorisation des connaissances traditionnelles. Toutefois, les caractéristiques et les potentiels des SVO varient en fonction du contexte socio-économique et juridique national.

Le deuxième objectif de la recherche était de comprendre la pertinence des connaissances traditionnelles, dans la théorie comme dans la pratique, des IG et des Sentinelles Slow Food. L'analyse de la littérature pertinente (i) (anglo-saxonne) sur les AFN, *embeddedness* et la sociologie rurale, (ii) et des études (françaises et italiennes) sur le patrimoine et le terroir, et (iii) des approches récentes en matière de « modes de savoir », a permis de révéler plusieurs écarts : (i) entre les connaissances tacites et codifiées, (ii) entre les connaissances sur la production et celles sur la consommation, (iii) entre le récit que l'on fait des caractéristiques organoleptiques d'un produit d'origine et l'expérience sensorielle que l'on a de ce produit, (iv) entre l'appréciation locale et historique d'un produit et sa réputation dans un marché non-local. Les SVO étant des dispositifs dépendant du contexte, les écarts dépendent des cas (contexte institutionnel, acteurs impliqués, y compris les

consommateurs, et préoccupations de la société) ; cela varie selon les pays et à l'intérieur des pays.

Le troisième objectif consistait à élaborer un cadre permettant d'évaluer les conditions nécessaires pour que les systèmes SVO aient un impact positif sur la biodiversité culturelle, tout en garantissant leur potentiel de changement et d'innovation. Une première conclusion est que la dimension ontologique de la biodiversité culturelle doit être prise en compte. Les principaux facteurs de réussite que nous avons relevés sont : la sensibilisation institutionnelle et l'engagement à valoriser et à protéger la biodiversité culturelle ; une conception multi-niveau du cahier des charges ; le complément de la stratégie d'étiquetage par une implication pratique/expérientielle des consommateurs ; la prévalence de la consommation locale et des économies locales ; le développement d'initiatives conjointes de conservation des ressources multiples ; la coexistence des deux SVO étudiés.

En ce qui concerne les implications méthodologiques (et les limites) de cette recherche, nous avons souligné l'intérêt d'explorer différentes études de cas en utilisant des outils ethnographiques avec une approche de confrontation transversale. Nous avons discuté de l'intérêt et des limites de privilégier des connaissances et des pratiques traditionnelles plutôt que des ressources biologiques, en particulier au niveau microscopique.

En ce qui concerne les implications pratiques pour les politiques et la gestion des systèmes SVO, nous avons souligné surtout l'importance d'une conception participative et globale du cahier des charges, soutenue par des institutions conscientes de la valeur de la CB.

Les recherches futures pourraient viser à comprendre les SVO dans des contextes non méditerranéens ; évaluer l'intérêt de combiner les IG et les Sentinelles avec d'autres systèmes qui protègent le patrimoine alimentaire et bioculturel ; concevoir un système de contrôle efficace dans le but de préserver la biodiversité culturelle.

En conclusion, cette thèse a indiqué que les fromages d'origine sont des facteurs potentiels permettant de reconnecter les communautés urbaines et rurales confrontées à l'homologation industrielle et à la déconnexion de la production alimentaire. En plus, elle a contribué au débat ouvert sur la potentielle augmentation de taille des initiatives alternatives en matière de nourriture (*scale-up*), en suggérant leur dimension cognitive.

Riassunto

I confini contesi della biodiversità culturale: un' esplorazione di saperi e pratiche nei prodotti di origine. Esempi di formaggi mediterranei.

1. Introduzione

A partire dagli anni '80, si assiste all'emergere di strategie di qualificazione di prodotti agroalimentari basate sull'origine, intense come una tendenza istituzionale e una risorsa rilevante nel modello agricolo europeo (Tregear et al. 2007; Fonte 2010). Inoltre, iniziative di etichettatura dell'origine proposte da organizzazioni non governative determinano nuove forme di regolamentazione (semi-)privata di questi mercati di nicchia. Questo fenomeno, qui riferito come Sistemi di Indicazione dell'Origine (SVO), è esemplificato dalle Indicazioni Geografiche (IG) e dai Presidi Slow Food. Le IG fanno riferimento a un tipo di proprietà intellettuale che conferisce a gruppi di produttori il diritto esclusivo di riferirsi a un luogo per commercializzare prodotti le cui reputazione e qualità sono attribuibili a tale origine culturale e geografica. I Presidi sono progetti dell'associazione internazionale Slow Food che hanno lo scopo di proteggere cibi locali in via di estinzione. Sia le IG che i Presidi, sebbene provenienti dall'Europa meridionale, stanno diventando economicamente e politicamente rilevanti anche nel Sud del mondo.

In un contesto generale di erosione della biodiversità agricola e perdita di specificità alimentari locali, decisori politici, movimenti sociali e ricercatori mostrano un crescente interesse per le conseguenze dei SVO sulla biodiversità, riferita in questa tesi come "biodiversità culturale" per sottolineare la rilevanza che pratiche e conoscenze locali rivestono nella biodiversità dei prodotti tipici (Bérard e Marchenay 2006). I SVO sono annoverati tra le possibili risposte alla perdita della biodiversità culturale, dando un riconoscimento economico-culturale a risorse e pratiche locali specifiche e incoraggiando allo stesso tempo lo sviluppo sostenibile, specialmente in aree rurali marginalizzate (Blakeney 2013). Ciononostante, la letteratura scientifica mette in discussione l'efficacia dei SVO a tal fine e sembra che esista una certa distanza, un certo *gap*, tra ciò che queste narrative raccontano e le pratiche che generano (Bowen 2010). Contro un approccio omologante, questa tesi mira a colmare tale lacuna affrontando il divario tra il "discorso" (Foucault 1971), cioè gli obiettivi politici, conoscenze sistematizzate e narrative che sottendono allo sviluppo dei SVO, e le pratiche locali (esplicite e implicite). Si intende contribuire così al dibattito scientifico e politico sui risultati bio-culturali dei SVO.

Questa tesi si basa su due premesse: (i) che la biodiversità culturale sia influenzata dal sistema agroalimentare, in particolare dalla *governance* dei SVO, e (ii) che conoscenze e pratiche locali siano radicate e costruite localmente, e non ereditate o trasmesse. Pertanto, guardando alle comunità locali coinvolte in diversi IG e Presidi in Francia, Italia e Marocco, questa ricerca intende qualificare le condizioni di emergenza e le conseguenze dei discorsi sulla biodiversità culturale. Gli effetti dei SVO sulla biodiversità sono quelli che aspirano ad avere? Quali sono i fattori che potrebbero migliorare o, al contrario, potenzialmente cristallizzare queste esperienze di localizzazione del cibo in merito alla conservazione della diversità?

L'importanza del tema di studio è giustificata da: (i) l'emergere di SVO in diversi contesti geografici; (ii) la prevalenza di due SVO, ovvero IG e Presìdi Slow Food; (iii) la crescente rilevanza di tali iniziative nelle politiche rurali volte allo sviluppo sostenibile, in particolare nelle zone di montagna; e (iv) il ruolo crescente delle conoscenze tradizionali nel dibattito sullo sviluppo sostenibile.

Il quesito centrale della ricerca emerge da un ambito scientifico multidisciplinare incentrato sulle relazioni tra economia, territorio e cultura, indicato come *Food Studies*. Nel nostro approccio, l'analisi del fenomeno dei SVO e delle soggiacenti dinamiche della conoscenza è intrinsecamente multidisciplinare, ma tuttavia centrale nel dibattito della geografia contemporanea, incline ad affrontare il rapporto tra società e spazio, anche nella dimensione culturale ed economica. Le diverse componenti interdipendenti dei SVO (ad esempio, politiche pubbliche e private, sistemi di produzione agroalimentare, componenti socio-culturali-cognitive) possono essere comprese solo facendo riferimento a diversi modelli interpretativi geografici, antropologici e socioeconomici. In particolare, il quesito di ricerca è stato esaminato facendo riferimento alla letteratura di geografia e antropologia del cibo sulle implicazioni socioculturali del cibo tipico, alla letteratura sugli studi rurali e le reti alimentari alternative (AFN) e gli studi sulla conoscenza (*Knowledge Studies*) al fine di fornire approfondimenti complementari in un approccio multidisciplinare.

Svolgimento della tesi

Il quesito della ricerca è esplorato attraverso tre diverse angolazioni che corrispondono a tre unità di analisi (cioè tre livelli principali di *gap*) e ai tre capitoli centrali della tesi. Innanzitutto, considerando il livello istituzionale, affrontiamo il divario tra discorsi istituzionali e pratiche, basato su dati relativi ai casi studio francesi e italiano (Capitolo 3). In secondo luogo, esaminando la dimensione collettiva dei SVO, affrontiamo il divario tra il discorso collettivo co-costruito nei disciplinari di produzione e la conoscenza tacita, all'interno del "club" SVO, basandoci su dati relativi ai quattro casi studio (Capitolo 4). Infine, a un livello locale più comprensivo, esploriamo il divario tra i discorsi collettivi e le conoscenze tacite che spaziano al di fuori del "club" SVO, utilizzando dati dai casi-studio in Francia e Marocco (Capitolo 5).

Queste unità di analisi sono associate a tre obiettivi ulteriori. Il primo è di caratterizzare il sistema delle IG e il modello dei Presìdi Slow Food in relazione ai loro effetti sulla biodiversità culturale. Il secondo è di esplorare le dinamiche della conoscenza associate alle pratiche di produzione e comprendere lo stato delle conoscenze locali nello sviluppo di SVO. Il terzo è di valutare le principali condizioni che favoriscono la conservazione della biodiversità culturale. Per rispondere a questi obiettivi, è contemporaneamente affrontato un altro aspetto, trasversale agli altri: le relazioni di potere che sussistono nell'avvio, nello sviluppo e negli effetti di un SVO.

2. Metodologia

Questo capitolo si propone di spiegare la metodologia adottata dalla ricerca per catturare e illustrare le narrative e pratiche quotidiane degli attori del SVO riguardo alla biodiversità culturale.

Considerando l'interdisciplinarietà dei riferimenti teorici, la complessità dei fenomeni che collegano gli aspetti di produzione, trasformazione e mercato alle dinamiche territoriali e all'appropriazione di queste da parte degli attori, abbiamo ritenuto utile applicare un approccio multi-metodologico basato su metodi qualitativi per affrontare quattro casi di studio di formaggi di origine riconosciuti come IG e/o Presidi Slow Food. Il nucleo centrale di questo studio, è consistito in 24 mesi di lavoro di campo etnografico multisito, in Francia, Italia e Marocco. Un importante obiettivo del capitolo è di argomentare il valore dell'osservazione partecipante etnografica e, in particolare, dell'uso dell'"apprendistato" come strumento di ricerca per studiare le pratiche incarnate, *embodied*, e basate sull'esperienza (Marchand 2010).

La selezione dei casi di studio è avvenuta a seguito di indagini territoriali, in tre fasi: (i) la selezione dei paesi: Italia, Francia e Marocco, (ii) l'identificazione del prodotto alimentare: formaggio di montagna artigianale e (iii) la scelta finale dei casi studio: un'IG (formaggio di capra di Chefchaouen, Marocco), un Presidio che si sovrappone parzialmente a un'IG (formaggio di montagna del Béarn e Ossau-Iraty, Francia), un'IG che è anche un Presidio (Piacentinu Ennese, Italia).

Il capitolo espone criticamente il processo di ricerca. In una fase preparatoria al lavoro sul campo, abbiamo affrontato l'etica della ricerca e negoziato l'accesso ai siti più appropriati e ai primi informatori. Quindi, esponiamo com'è stato svolto il lavoro sul campo e la raccolta dati, che consistono principalmente di informazioni etnografiche da più siti, raccolti attraverso osservazione partecipante, interviste semistrutturate e informali con produttori, consumatori e altre parti locali interessate, e fonti scritte). In seguito presentiamo l'approccio interpretativo utilizzato per l'analisi dei dati, che ha avuto lo scopo di delineare una riflessione su ogni caso di studio inclusa poi in una prospettiva più ampia, tenendo conto di come le esperienze locali sono collegate ai processi nazionali e globali.

La seconda parte del Capitolo 2 introduce e situa i casi di studio, delineando il contesto economico e istituzionale dell'avvio e dello sviluppo dei SVO (sia per il sistema IG che per i Presidi Slow Food) a supporto della giustificazione della selezione dei casi di studio. Infine, presentiamo i quattro casi studio selezionati in merito alla loro posizione geografica, origine storica del prodotto e del SVO, caratteristiche del prodotto e dei produttori coinvolti.

3. La biodiversità culturale spiegata, (non) corrispondenza tra discorso e pratica

Questo capitolo presenta uno studio volto ad esplorare l'emergere di un discorso sulla biodiversità culturale all'interno del sistema delle IG (un'iniziativa statale) e in Slow Food (un movimento di consumatori), e affronta il modo in cui tali discorsi informano progetti specifici. L'argomento è esplorato attraverso la lente della gestione della microbiodiversità dei formaggi, e in particolare il dibattito sull'uso (o meno) di colture batteriche selezionate, dette "starters". Una prospettiva discorsiva basata su Foucault (1971) rende possibile comprendere la biodiversità culturale come un discorso storico e politico, diversamente elaborato e appropriato da istituzioni e attori locali. Lo studio evidenzia gli elementi di differenziazione tra i discorsi istituzionali di IG e Presidi, entrambi intesi come strumenti di mercato associati ad altri valori complementari. Le IG sottolineano l'aspetto "salute" e

“cultura” della microbiodiversità del formaggio per sviluppare una strategia istituzionale inclusiva di qualificazione basata su risorse biologiche e culturali comuni, intese come patrimonio. Dall'altra parte, Slow Food sfrutta il tema della microbiodiversità del formaggio per sviluppare ulteriormente il suo discorso sulla biodiversità culturale e capitalizzare sul “naturale” come valore morale esclusivo legato al cibo, omettendo la costante gestione tecnica della microbiologia e il riferimento ai benefici e ai rischi per la salute. Inoltre, l'analisi della gestione della microbiodiversità del formaggio in tre dei casi studio selezionati (Presidio e IG del Piacentinu Ennese, IG Ossau-Iraty e Presidio del formaggio di montagna del Béarn) permette di mostrare l'appropriazione divergente della biodiversità culturale da parte degli attori di uno stesso SVO. L'analisi dei disciplinari di produzione ha suggerito che tutti i SVO presi in considerazione integrano preoccupazioni relative alla microbiodiversità e che tali disciplinari di produzione stanno generando cambiamenti nelle pratiche dei produttori. Tuttavia, alcune pratiche che potrebbero associare ulteriormente la biodiversità culturale al prodotto (ad esempio, la gestione dei pascoli o la trasformazione del latte crudo nell'IG Ossau-Iraty) continuano a non essere regolamentate e altre pratiche codificate nei disciplinari non sono poi applicate (ad esempio, l'uso di utensili di legno o evitare l'uso di starters nei Presidi). Inoltre, le pratiche tacite, non codificate, sono numerosissime, rivelando “un'ecologia della pratica” maggiormente complessa e adattabile (Paxson 2013).

In tal modo, lo studio rivela un divario esistente tra tali discorsi istituzionali e come viene “praticata” la biodiversità culturale. I disciplinari di produzione da soli non sono sufficienti per produrre un effettivo cambio di pratiche, ma sono necessari tempo e set di valori personali per assimilare discorsi emergenti e nuove preoccupazioni sociali, come quella relativa alla valorizzazione della microbiodiversità. Ciò conferma i risultati di Caron e Boisvert (2010) e Biénabe (2009) che suggeriscono quanto la ricerca di una biodiversità “desiderata”, inclusa la microbiodiversità, sia importante nella negoziazione delle pratiche codificate e delle strategie individuali. Inoltre, il mercato svolge un ruolo importante, ma spesso nascosto, nel plasmare questo divario tra discorso istituzionale e le pratiche nel campo. A ciò si aggiungono anche gli interessi divergenti e le asimmetrie di potere tra gli stakeholders che guidano il progetto. Questi risultati convalidano quelli di alcuni autori che hanno in precedenza affrontato il rischio del sistema delle IG di diventare uno strumento di mercato che non associa il cibo locale alla biodiversità culturale (Durand e Fournier 2017; Vitrolles 2011; Fonte 2008); e di altri autori che hanno sottolineato che attori alla ricerca di nuovi mercati si sono appropriati del discorso di Slow Food sulla biodiversità (Fonte 2006; Grasseni 2011; MacDonald 2013). Tuttavia, la narrativa sulla biodiversità culturale mediatizzata da Slow Food come pilastro della sua attività può offrire agli attori locali una rinnovata voce politica e un'occasione di responsabilizzazione, promuovendo la creazione di comunità di interessi che comprendano anche i consumatori.

4. Il paradosso di ridurre la diversità per difenderla

Lo studio presentato nel Capitolo 4 si propone di giungere ad una comprensione più profonda della relazione tra SVO e biodiversità culturale osservando le pratiche che sono condivise e codificate nei disciplinari di produzione dei quattro casi studio. Questo secondo studio identifica i disciplinari di produzione come lo strumento che oggettiva le qualità specifiche e uniche del cibo tipico e, di conseguenza, li identifica come un quadro

cruciale per esplorare il processo di standardizzazione delle pratiche. Nelle IG quanto come nei Presidi, regole specifiche sono negoziate da un organismo collettivo nel quadro di regole generali. Nel sistema delle IG, le norme specifiche devono attenersi agli standard d'igiene e sicurezza alimentare, e alla dimostrazione del vincolo della qualità all'origine. I disciplinari dei Presidi Slow Food si basano invece sulle pratiche di produzione esemplari di ciascun territorio, inquadrate da linee guida volte a migliorare la qualità organolettica, ambientale e sociale del cibo.

Da questa intuizione preliminare, emerge che gli attori locali hanno un'ampia libertà nella definizione delle pratiche consentite e proibite nei disciplinari di produzione, adattandosi ad ambienti specifici, ossia, i SVO sono altamente dipendenti dal contesto. I contesti istituzionali variano, in quanto le iniziative hanno scopi diversi. Due dei casi di studio selezionati rappresentano gli estremi di tali differenze: in Marocco, paese che sta implementando rapidamente un sistema nazionale di IG, lo scopo principale dell'iniziativa di IG del formaggio caprino di Chefchaouen è lo sviluppo rurale attraverso la costruzione e la commercializzazione di un prodotto innovativo che risponda alle preoccupazioni moderne in materia di igiene e sicurezza alimentare. Nella regione dei Pirenei francesi del Béarn, rinomata per il suo vivace paesaggio caratterizzato da allevamento e caseificazione radicati nel passato, il Presidio mira a difendere la pratica marginale della transumanza e la produzione giornaliera di formaggi in montagna, cambiando il loro status in un elemento capace di generare valore aggiunto e riconoscimento sociale. Inoltre, gli attori locali che promuovono e guidano le iniziative hanno interessi e comprensioni diversi del patrimonio, della località e della qualità dei propri prodotti. Tali posizioni si riflettono nell'elaborazione dei disciplinari e, di conseguenza, nelle pratiche di produzione condivise.

I disciplinari dei quattro casi studio sono analizzati per mostrare come la conoscenza tradizionale sia stata presa in considerazione in modo diverso, secondo la struttura analitica proposta da Ilbery et al. (2005) che considera *prodotto*, *luogo* e *processo* come gli elementi principali per "costruire la differenza" sul mercato, e quindi anche come elementi cruciali da definire e comunicare attraverso i disciplinari. I nostri risultati indicano che: (i) il confronto tra diversi modelli di strategia economica, sostenuti da forme plurali di conoscenza, compromettono il primato delle conoscenze locali e ne determinano la selezione e la delimitazione; (ii) esiste un divario tra le pratiche codificate e la grande varietà di pratiche tacite alla base del cibo tipico, fondato su un giudizio sul valore utilitaristico della conoscenza locale.

Per quanto riguarda questi due punti, lo studio dimostra che la codificazione della conoscenza nei disciplinari ha conseguenze controverse sulle conoscenze e le pratiche tradizionali. Com'è ampiamente riconosciuto, i disciplinari permettono la conservazione diretta di alcune risorse genetiche, gusti e saperi, ma paradossalmente il processo di codificazione si traduce anche nell'adattare e ridurre la diversità esistente di pratiche e gusti, incluso nei SVO che sono più attenti alla localizzazione delle pratiche e alla promozione della diversità, come il formaggio di montagna del Béarn e l'IG e il Presidio del Piacentinu Ennese. Abbiamo infatti registrato delle (de)limitazioni del processo di produzione, della conoscenza locale, del potere delle parti interessate, del luogo di produzione, dell'inclusione sociale e degli attributi organolettici. Ad esempio, i SVO studiati testimoniano una riduzione della diversità gustativa funzionale alla domanda del

mercato: i gusti che non corrispondono alle preferenze del mercato sono sistematicamente scartati. Inoltre, la dinamica di mercato del prodotto tipico sostenuta dai SVO compromette la possibilità di continuare a svolgere pratiche di produzione antiche perché troppo onerose, l'uso di utensili tradizionali che contravvengono alle nuove norme in materia di salute e sicurezza alimentare, e la sopravvivenza di una varietà di stili di stagionatura e gusti considerati troppo complessi dal consumatore moderno.

Un'ulteriore analisi sulla capacità dei produttori di influenzare lo sviluppo delle regole e il processo di normalizzazione ha portato a dimostrare che la *governance* dei SVO e le negoziazioni tra gli operatori sono fattori determinanti per prevedere gli effetti del SVO sulle conoscenze e le pratiche. Il nostro lavoro ha rivelato il ruolo preminente delle negoziazioni tra operatori che contrappongono motivazioni, strategie e forme di conoscenza, confermando, tra gli altri, i risultati di Parasecoli (2017), Rangnekar (2011), Barjolle (2006) e Fonte (2008). Queste negoziazioni generano disciplinari di produzione in cui le pratiche tradizionali di produzione vengono prese in considerazione in misura diversa. Gli organismi di gestione dei nostri casi studio hanno mediato le strategie degli stakeholder per raggiungere un accordo difficile. Abbiamo dimostrato che quando l'eterogeneità degli attori aumenta e c'è uno squilibrio nel loro potere contrattuale, la negoziazione diventa conflittuale, confermando Dentoni et al. (2012) e Tregear et al. (2007) che hanno sottolineato gli effetti dell'eterogeneità dei SVO sull'esigenza dei disciplinari. Tuttavia, abbiamo anche mostrato la possibilità per attori meno potenti di influenzare le decisioni, costruire strategie e sostenerle con diverse forme di conoscenza. Infine, questo studio ha sottolineato come "autorità" speciali giustificano tale riduzione della diversità, e in particolare gustativa, nascondendo lo stretto legame tra SVO e mercato, come concluso da Ulin (1995) sul ruolo degli esperti di vino sulla standardizzazione dei vini.

5. Conoscenza in movimento: apprendimento e cambiamenti di pratiche

Limitarsi alla comprensione delle dinamiche della conoscenza nei SVO a livello del loro sistema di gestione è, tuttavia, insufficiente per valutare il loro effetto sulla biodiversità culturale, a meno che non si consideri una prospettiva dinamica. Le difficoltà di comprendere gli effetti sulle pratiche analizzando esclusivamente la negoziazione e l'applicazione dei disciplinari di produzione sono doppie. In primo luogo, i confini dei SVO sono più ampi del "club" (Torre 2002) degli operatori perché anche altri produttori e parti interessate presenti nell'area sono influenzati e/o hanno parte attiva nell'iniziativa; inoltre, i disciplinari di produzione e le relative conoscenze, codificate e tacite, sono continuamente adattati e modificati dagli operatori. Pertanto, il terzo studio (Capitolo 5) ha affrontato il quesito di ricerca principale focalizzandosi su una dimensione collettiva di SVO che supera l'insieme dei suoi membri in senso stretto e su aspetti dinamici della conoscenza. Il Capitolo 5 ha considerato i SVO come "comunità di pratica" (Lave e Wenger 1991) in cui gli stakeholder, inclusi i consumatori e altri produttori situati nella regione, interagiscono in un processo di apprendimento. Questa prospettiva dinamica ed ecologica (Ingold 2000), ha permesso quindi di esplorare l'innovazione delle pratiche e la produzione di biodiversità culturale in tre casi di studio, i due correlati dalla Francia (Presidio Slow Food del formaggio di montagna del Béarn e IG Ossau-Iraty) e quello marocchino (IG formaggio caprino Chefchaouen). Tale studio si è basato specificatamente

sull’“apprendistato” come metodo d’indagine, che si è confermato essere una modalità privilegiata per accedere alla conoscenza tacita e alla creazione di pratiche attraverso il coinvolgimento diretto del ricercatore nell’“ambiente pratico” studiato o “taskscape” (Ingold 2000).

Lo studio fornisce diversi approfondimenti sui processi di conoscenza alla base dei SVO. Le esperienze di apprendimento contribuiscono a rafforzare l’identità condivisa e il legame collettivo dei SVO (“aspetto federatore”), in quanto: (i) le comunità sono costruite su conoscenze tacite, esperienze collettive e luoghi, oltre che su un insieme condiviso di norme, che producono una stabilizzazione delle pratiche; (ii) i confini delle comunità sono fluidi: il SVO influenza anche i produttori che non sono operatori e coinvolgono anche i consumatori in pratiche ed esperienze condivise, in particolare nel caso dei Presidi Slow Food; (iii) la conoscenza tacita è una condizione preliminare, ma anche il risultato di pratiche e attività condivise.

Allo stesso tempo, lo studio contribuisce a dimostrare come i processi di apprendimento siano basati su discontinuità che producono nuove conoscenze locali (“aspetto dinamico”). Queste discontinuità portano all’innovazione e ai cambiamenti delle pratiche, consentendo all’esperienza di SVO di non essere sclerotizzata. In questo senso, il SVO è un quadro per l’apprendimento, in cui le innovazioni vengono discusse per definire quali siano accettabili e quali no, in relazione ad un contesto in continua evoluzione. In particolare, (i) le pratiche quotidiane dei produttori sono sostenute da un ampio repertorio di conoscenze tacite che oltrepassa e talvolta contraddice le pratiche codificate, (ii) il divario o le discontinuità tra conoscenze tacite e codificate consentono innovazione, (iii) i disciplinari di produzione tendono a cambiare, spesso in modo conflittuale, per adattarsi a nuove sfide di mercato o culturali; (iii) i confini delle “comunità di pratica” sono porosi e possono essere attraversati da produttori disposti ad entrare nel SVO o da estranei/oppositori del SVO; (iv) le pratiche cambiano status e la conoscenza tacita viene ridefinita.

Questi risultati sul ruolo complementare dell’apprendimento nei SVO completano le conclusioni di altri autori che si sono focalizzati alternativamente sul primo “aspetto federatore” (Barham e Sylvander 2011; Frayssignes 2005) o sull’“aspetto dinamico” (Gade 2004; Paxson 2010; May 2013). Inoltre, l’attenzione alle “esperienze” per comprendere il processo di apprendimento tra produttori e consumatori completa i risultati di Lamine (2015), Brunori et al. (2012), Morgan e Murdoch (2000).

Infine, questo terzo studio riconosce i SVO come quadro cognitivo rilevante volto ad immaginare possibili scenari futuri alternativi attraverso le pratiche, sviluppando ulteriormente quanto indicato da Goodman et al. (2011). Infatti, i SVO analizzati hanno fornito alle comunità locali gli strumenti per reagire a cambiamenti nel loro contesto socio-economico, basandosi sulla consapevolezza del legame rinnovato tra una comunità locale e le risorse naturali e culturali del territorio.

6. Sintesi e conclusione

Questo capitolo, dopo aver risposto alle domande di ricerca basate sui principali risultati presentati nei Capitoli 3, 4 e 5, discute gli obiettivi della tesi, evidenziando il dispiegamento di potere nelle dinamiche della conoscenza all’interno dei SVO, per poi

concludere con considerazioni generali su metodologia e applicazione, e aprendo nuove prospettive di ricerca.

Come primo obiettivo, c'eravamo posti quello di chiarire il ricco fenomeno dei SVO in relazione alla biodiversità culturale e alle conoscenze locali. Alla luce della presente analisi, possiamo concludere che le IG e i Presìdi hanno sia punti in comune che differenze cruciali su due livelli, cioè (i) il quadro istituzionale e (ii) la motivazione e i valori alla base, sebbene sul campo le dinamiche siano meno chiare di quanto ipotizzato. Le caratteristiche sottolineate dimostrano che questi tipi di iniziative offrono una notevole flessibilità e opportunità nel riconoscimento e nella valorizzazione delle conoscenze tradizionali. Tuttavia, le caratteristiche e le potenzialità del SVO variano in ciascun contesto socio-economico e giuridico nazionale.

Il secondo obiettivo della ricerca era di comprendere la rilevanza, in teoria come nella pratica, delle conoscenze tradizionali nel sistema delle IG e nei Presìdi Slow Food. Combinando la letteratura pertinente (i) (anglosassone) su AFN, *embeddedness* e sociologia rurale, (ii) (francese e italiana) sugli studi sul patrimonio e *terroir*, e (iii) i recenti approcci sui “modi di conoscere” (*ways of knowing*), abbiamo potuto rivelare alcune divergenze, *gap*, tra conoscenze tacite e codificate, tra conoscenze relative alla produzione e al consumo, tra narrativa ed esperienza, tra prodotto e reputazione. Essendo i SVO dispositivi dipendenti dal contesto, questi divari dipendono dai casi (contesto istituzionale e sociale, attori coinvolti, inclusi i consumatori); variano tra paesi e all'interno dei paesi stessi.

Il terzo obiettivo era di sviluppare un quadro per valutare quali condizioni siano necessarie affinché i SVO abbiano un effetto positivo sulla biodiversità culturale, garantendo al contempo il loro potenziale di cambiamento e innovazione. Una prima conclusione è che la dimensione ontologica della biodiversità culturale deve essere considerata. Inoltre, i principali fattori, non esclusivi, di successo della biodiversità culturale che abbiamo rilevato sono: consapevolezza istituzionale e impegno a valorizzare e proteggere la biodiversità culturale; design comprensivo e multilivello dei disciplinari di produzione; integrazione della strategia di etichettatura con una conoscenza empirica dei consumatori; preferenza di consumo locale ed economie locali; attivazione di iniziative di conservazione congiunte su più risorse; coesistenza di entrambi i SVO studiati.

Con riferimento alle implicazioni metodologiche e ai limiti di questa ricerca, abbiamo sottolineato le conseguenze di esplorare diversi casi di studio utilizzando strumenti etnografici e un approccio di confronto trasversale. Abbiamo discusso dell'interesse e dei limiti di privilegiare le conoscenze e le pratiche tradizionali nello studio della biodiversità, piuttosto che le risorse biologiche, concentrandoci sul livello microscopico.

Quindi abbiamo discusso le implicazioni pratiche per le politiche e la gestione dei SVO, sottolineando l'importanza di un progetto partecipativo e comprensivo dei disciplinari di produzione, sostenuto da istituzioni consapevoli del valore della biodiversità culturale.

Ricerche future potrebbero essere volte a comprendere i SVO in contesti non mediterranei; combinare IG e Presìdi con altri sistemi volti alla protezione del patrimonio bioculturale;

progettare un sistema di controllo più efficace allo scopo di tutelare la biodiversità culturale.

In conclusione, questa tesi ha indicato che i formaggi di origine sono interessanti potenziali fattori per ripristinare i legami tra le comunità urbane e quelle rurali a fronte della standardizzazione industriale e della disconnessione dalla produzione alimentare. Inoltre, ha contribuito al dibattito aperto sul potenziale delle iniziative alimentari alternative di *scale-up*, sottolineandone la dimensione cognitiva.

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APPENDICES

Appendix 1: Author's published paper used in Chapter 1 (co-authored)



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Establishing Geographical Indications without State Involvement? Learning from Case Studies in Central and West Africa

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Summary. — This paper addresses the debate on establishing GIs in weak national institutional contexts. It builds on evidence provided by six case studies in a project implemented by the African Intellectual Property Organization (French acronym OAPI) in Western and Central Africa: Oku white honey, Penja pepper, Ziama-Macenta coffee, Dogon shallots, Galmi purple onions, and Korhogo cloth. Thanks to OAPI's unique status and an appropriate methodology, three GIs have been registered. We notice a lack of sound and effective state involvement which can limit the successful development of GIs. We identify some decisive factors in successful collective action. © 2015 Elsevier Ltd. All rights reserved.

Key words — geographical indications, OAPI, Africa, Cameroon, Guinea, food quality

1. INTRODUCTION

Geographical Indications (GIs) are of growing political and economic relevance in the Global South. GIs are viewed as a way to reap market benefits from cultural identities, which are of increasing importance in a globalizing world (Ilbert & Petit, 2009), and are said to have a significant potential impact on development (Bramley, Marie-Vivien, & Bienabe, 2013).

For instance, the European Union has registered more than 14 GIs from emerging third countries (China, Colombia, India, Vietnam) and has received applications for nine more (India, Morocco, Thailand, Turkey) (European Union, 2014), whereas India alone has registered more than 200 GIs since 2003. However, nearly 10 years ago, Kerr (2006) wrote that the GI approach may lead developing countries wasting their limited resources chasing an illusive dream (p. 8).

Scholars and experts from the Food and Agriculture Organization of the United Nations (FAO) argue that origin-linked food quality schemes are an appropriate rural development tool outside of Europe and a way to minimize the risks linked to globalization (Barham, 2003; Bowen, 2009, 2010; Bowen and Zapata, 2009; Vandecastelaere, Arfini, Belletti, & Marescotti, 2009). Effective GIs could open a profitable market niche for southern producers on both domestic and more profitable international markets. GIs also offer a way to protect indigenous knowledge (Blakeney, 2009; Rangnekar, 2004), although they may also be a threat to local skills and genetic resources (Boisvert, 2006). In Africa and predominantly rural economies elsewhere, the development of GIs takes on strategic importance as a mechanism that enables agricultural development to be both environmentally sustainable and based on codified traditional knowledge.

In the wake of TRIPS (Trade-Related Aspects of Intellectual Property Rights agreement), specific legal frameworks have been progressively established by a large number of developing countries at both national and regional levels (Audier, 2008; Giovannucci, Josling, Kerr, O'Connor & Yeung, 2009; Marie-Vivien, 2010, 2012; Xiaobing & Kireeva, 2007). African countries are no exception. In West and Central Africa, the *Organisation Africaine de la Propriété Intellectuelle* (African Intellectual Property Organization [French acronym

OAPI])¹ has provided its 17 member states with a common legal framework for intellectual property (IP) rights since 1977. New regulations for the definition of GIs were adopted in 1999 (OAPI, 1999).

GIs in West and Central Africa are something of a paradox. Although consumers and producers make extensive use of place names to describe a wide range of products reflecting biodiversity, local production, knowledge, or social identities, and GIs have been instituted by the OAPI as a legal protection tool, no GI (except Champagne) was registered in this region before 2013 (Bramley *et al.*, 2013; Oguamanam & Dagne, 2014). What is more, at the time of writing, no national-level implementation plans are in place.

The scientific literature addressing the development of GIs in Africa, albeit still scant, echoes our concern about state involvement. Some authors assess the opportunities and risks represented by GIs in Africa; they focus on food commodities such as Ethiopian coffee (Schübler, 2009; Sereke-Brhan, 2010) or Ghanaian cocoa (Hughes, 2009; Oguamanam & Dagne, 2014), and consider GIs as a way to decommoify these products and thus hedge against market price fluctuations. The main aim of this literature is to evaluate the costs/benefits of the *sui generis* GI system compared to trademark schemes, or to assess the benefit of enhanced multilateral GI protection for African ACP countries (Blakeney, Coulet, Getachew, & Mahop, 2012). Some authors focus on origin foods and point to GI as a way to valorize them with benefits for local actors (Chouvin, 2005; Cormier-Salem, Juhé-Beaulaton, Boutrais, & Roussel, 2005; Cormier-Salem & Roussel, 2009; Roussel & Verdeaux, 2007; Tekelioglu, Ilbert, & Tozanli, 2009), but provide scant documentation of actual experience. To date, little

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literature has focused on the particular challenges of setting up GIs in countries where government regulatory capacity is weak, and none on setting up GIs in sub-Saharan countries. Further research is thus clearly needed into the role of the state in establishing GIs.

This paper aims to contribute to the debate on establishing GIs in Western and Central Africa. It builds on the evidence provided by six case studies conducted in the framework of the PAMPIG project (*Projet d'Appui à la Mise en Place d'Indications Géographiques* Support for the Implementation of Geographical Indications). The French Development Agency (French acronym AFD) has been funding PAMPIG, for which OAPI is the contracting authority, since 2008, and CIRAD² has been providing technical assistance since 2010 (Edou-Edou, 2009). The project methodology is detailed below. Three of the products concerned by the project have been registered as a GI (Oku white honey, Penja pepper, and Ziama-Macenta coffee), while the other three (Dogon shallots, Galmi purple onions, and Korhogo cloth) were evaluated but registration was postponed. As the first three GIs were registered very recently, their effects are not yet fully clear.

Our aim here is to build on the experience gained in these projects for the benefit of future GIs and to assess the role of the state in this process (in this paper we use “state” as national domestic state). We argue that establishing GIs without effective state involvement is possible and can produce at least some initial positive effects, as long as a clearly defined methodology is followed. However, the lack of a strong and appropriate legal framework and state involvement can be a limiting factor for the successful further development of GIs.

2. ANALYTICAL FRAMEWORK

(a) *Local and origin products in Africa: a vibrant landscape*

Attributing the name of a place to a food or craft that presents specific features is and has been a common practice in many places and historical periods (Sautier, Bienabe, & Cerdan, 2011). In Western and Central Africa, the names of many local products refer to their cultural and/or geographical origin, and are often used all over the country of origin and sometimes in several other countries as well (e.g., *Sissili* shea butter from Burkina Faso and *kilishi*, a dried meat product of Niger, Nigeria, and Cameroon). Like in the EU, the name of localities associated with local products may refer either to the place of origin of the raw material or to the cultural origin of manufacture (i.e., who does the processing and where) or both (Moity-Maïzi & Sautier, 2006). Although very few inventories exist, while assessing GI potential in the African, Caribbean, and Pacific Group of States, Barjolle, Renard, and Bernardoni (2013) found written documentation on 150 agricultural products whose quality was said to be linked to their origin. In 2011–12 a FAO/PISA project (*Programme italien pour la sécurité alimentaire* Italian food security program) conducted a thorough inventory in the small Guinean region of Kindia and identified 13 local products with a strong link to quality and/or place (Rupp, s.d.). If so many products were identified in such a small area, the number of origin-based products in Western and Central Africa is likely to be higher than reported in the literature so far.

The existence of local specialty foods and the challenge of achieving their formal recognition apply to both domestic

and regional markets. People's taste for local foods persists when they move to town from rural areas. It is influenced by availability and price, but also by people's cultural and professional identification with products linked to specific territories, one example being the Malian preference for shallots over onions. These expectations can be compared to the “new quest for identity” in urban areas identified in European countries (Amilien, 2005). In Africa, this quest for identity may reflect the feeling of a break between rural and urban areas, making some consumers want to (re)discover their roots and traditions through their food practices (Bricas, 2006; Carré, 2008).

However, local reputations can be misused or appropriated, when populations, knowhow, and products change location, and today both producers and consumers may be losing the guarantee that interpersonal relations previously provided for local products (Cheyns, 2006). In West Africa, the situation is exacerbated as rural-to-urban migrant families are gradually further removed from their village or region (Moity-Maïzi, 2006). In Africa's big cities, these dynamics underlie the increasing search for guarantees of origin via distinctive markets and networks—and for other signs based on alternative quality conventions—that guarantee the genuine origin of products, as evidenced by the case of Penja pepper.

(b) *The role of the state in establishing GIs*

Much of the literature on GIs assesses the factors that determine their success, concentrating on economic issues on local versus global markets (Arfini, Belletti, & Marescotti, 2010; Barham, 2003; Benkahl, Boutonnet, & Fort, 2005). As suggested by Bowen (2010), even the literature that considers GIs as alternative food networks, and emphasizes how these unconventional markets are embedded in social relations, often fails to clarify the power dynamics underpinning the localization of food chains. Sonnino and Marsden (2006) warned that understanding alternative food networks requires paying careful attention to the institutional context as well as to the power relations along the value chain. Bowen (2010) recommends that the commodity chain approach, applied to GIs, should be used for any analysis of the national and global institutional and political context, as well as of agricultural policies. Comparing French and Mexican GI policies, Bowen considers that to ensure that local populations share the long-term benefits “the importance of strong national support for GIs should not be underestimated” (p. 233).

In Europe, GIs benefit from a strong institutional framework. In France, the failure of first the administrative decision, and then of the judicial ruling at the beginning of the 20th century led to the setting up of a dedicated body comprising both representatives of public authorities and professionals (National Institute of Appellations of Origin, French acronym INAO) (Marie-Vivien, Bérard, Boutonnet, & Casabianca, 2017). However this original private/public “sharing” of the role is now undergoing profound changes as reported by Marie-Vivien *et al.* (2017), in which the driving forces are the privatization of controls and increased roles for the European Union and the Ministry of Agriculture. The concept of a “state-oriented” European GI model is thus no longer entirely justified.

In Latin America, the experience of Café de Colombia, one of the largest GIs in the world (and the first third country GI registered by EU) “is a producer-led effort without direct influence of international roasters, donors, or government authorities” (Xiomara, Quiñones-Ruiz, Penker, Vogl, & Samper-Gartner, 2015, p. 434). The federated coffee system dates back nearly 100 years, but Café de Colombia was only

recognized as a denomination of origin in Columbia itself in 2005, as this was a precondition for being registered as a GI by the European Union, which finally happened in 2007.

The role of the state in promoting and recognizing GIs thus differs considerably from one country to another, and continues to change over time. Like Bowen (2009, 2010), many authors have stressed the importance of the political and institutional context in implementing GIs following their legal recognition; they argue that state support plays a key role in helping local populations benefit from origin-based schemes (Giovannucci, Josling, Kerr, O'Connor, & Yeung, 2009; Sautier *et al.*, 2011; Vandecandelaere *et al.*, 2009). In addition to providing a legal framework, the state monitors and strengthens legal protection against the risks of usurpation and confusing uses, supports collective action and organization, ensures quality control, and stimulates cooperation in defining a marketing strategy (Hughes, 2009). Larson (2007) argues that in developing countries, where "the institutional context tends to be weaker or underdeveloped with regard to fraud repression, intellectual property, and natural, biological and genetic resources," (p. 7) inadequate institutional support is a major concern for the recognition and establishment of GIs. Lack of an effective institutional environment can lead to insufficient, unfairly shared benefits or even counterproductive results (Barjolle & Sylvander, 2002; Larson, 2007; Rangnekar, 2004). For instance, in a study on a GI initiative for a Nicaraguan cheese, Mancini (2013) reported that "GIs can become factors of increased marginalization" and even a "mechanism excluding the poorest" (p. 295). She points out the weakness of the Nicaraguan institutional context, including a generic legal framework and general ignorance of GI potential, as the major reason the poorest producers are excluded.

Still, some examples show that strong state intervention is not always favorable. Problems may arise when the state does not support the GI governing bodies by approving their autonomy and clearly defining their responsibilities (Larson, 2007). Zhao, Finlay, and Kneafsey (2014) argue that a strong government GI policy may not allow independent bodies to play their full role. In the Chinese GI scheme studied by these authors, many functions are embedded within government or government-supported organizations, without the necessary independence. In order to ensure that all local producers can take advantage of the GI, the government proposes minimal GI standards, adopts lax issuing procedures, and implements weak inspection programs. As a consequence the GI label does not guarantee specific quality characteristics and consumers refuse to pay a higher price. Also in Mexico, where the legal definition of GIs is strong and longstanding, Bowen and Zapata (2009) show that the Tequila GI failed to benefit the local population and environment. In such contrasted contexts as China and Mexico, GIs failed to provide the expected benefits because of excessive state intervention limiting independence (China) or the bias of the state toward more powerful supply chain actors (Mexico).

3. MATERIALS AND METHODS

This paper is mainly based on extensive observation of and direct participation in the technical support programs provided by CIRAD to OAPI from 2004 to the present. The authors are part of a research team that provides support and training in many countries across the world. Shared and

multidisciplinary reflection on this ongoing experience is at the origin of this paper, which is also grounded in an extensive review of published literature, working papers, and empirical research on the production, trading, and consumption of local specialty products in Western and Central Africa (Moity-Maïzi & Sautier, 2006).

The OAPI launched the PAMPIG project in 2008, thanks to a €1 million grant from the French Development Agency, AFD. One of the goals was to register between two and five products as a GI, four of which had already been identified: Oku white honey and Penja pepper in Cameroon, Ziamacenta coffee in Guinea, and Korhogo cloth in Côte d'Ivoire. The project assessed two other local products as potential GIs (Dogon shallots in Mali⁵ and Galmi purple onions in Niger), whose registration was postponed.

The action plan for the PAMPIG project described in the *GI Applicant's Guide* (OAPI, 2011) clearly states the steps to follow in the process of GI recognition and registration:

For each of these products, the project conducts a diagnostic analysis of the production chain and identifies the people involved. It defines the steps required for registration of a geographical indication. It writes the terms of reference for local consultants who help producers' organizations in preparing the application dossier, especially marketing strategy, in preparing the formal code of practices and defining the geographical area, and establishing control modalities. Once the dossier has been completed, it is transmitted to the National GI Committee of the country concerned.

The PAMPIG project applied a method based on the conclusions of SINER-GI (a research project and network on Geographical Indications funded by the European Community) as expressed in *Linking People, Places and Products, A guide for promoting quality linked to geographical origin and sustainable geographical indications* published by FAO (Vandecandelaere *et al.*, 2009). This guide presents a method to facilitate the positive impact of GIs on rural development by stressing some important issues to be addressed and implemented by and for the local actors:

1. Collective action and coordination between supply chain stakeholders. This must be an integral part of the entire process, from the identification and recognition of the product by enhancing community awareness, to developing marketing strategies and sharing the increased value-added.
2. Code of practices or specifications. Establishing local rules for using the GI is a keystone of the process, and has important social, economic, and environmental consequences. The code formally establishes the specific quality of the product linked to geographical origin, mainly by (i) describing the product, including natural resources and traditional practices, and (ii) defining the area of production.
3. Local guarantee system. Traceability and monitoring are crucial to the GI system and must be addressed when setting up a new GI.

4. RESULTS

In this section we describe the process that led to the successful registration of three of the GIs and explore three case studies in which registration was postponed. The main

Table 1. Key attributes of the three products which have been registered as GI

	Oku white honey	Penja pepper	Ziama-Macenta coffee
Place	Cameroon, North West Province	Cameroon, Center Province	Guinea, Forest Guinea Province
Reputation	Appreciated locally	Regarded as the best pepper by nationals, and as one of the best peppers in the world by international specialists	Recognized as a good coffee by local traders and some agronomic research specialists
Stakeholders: initial situation	Around 100 producers. One co-operative is processing, packaging, and selling "Oku honey". Some associations are supporting beekeepers	The largest producer is an international company. Other producers (200) are middle, small or very small. No collective organization. One company is importing and selling in Europe	Thousands of small producers. One small co-operative is following a quality strategy
Major constraints	Limited production potential and reputation. Low generic quality (smoke aroma, impurities, water content)	Low technical level of many producers. Usurpation of the name on national market. A trade mark is registered in France (monopoly of one importer)	Unknown on international market. Difficulty to guarantee quality of substantial quantities
2005 production	20 t	90 t	Negligible initial production of quality coffee
Potential production	Not available, but limited by the resource potential (20 km ² forest)	Much greater than the current situation if pepper is planted in place of other crops (coffee, banana, pineapple...)	Around 2,000 t
2014 production	20 t	130 t	18 t of quality coffee exported in 2013
Initial price (2008)	2,000 XAF/kg/	5,000 XAF/kg/	Following international price
2014 price ^a	4,000 XAF/kg	7,500 XAF/kg	A premium of 10% was obtained in 2013
Registration by OAPI	October 2013	September 2013	April 2014
Main limitations	Collective organization is not operational	Monitoring and quality control plan is not operational. As pepper plots are not identified and localized, traceability is not possible	As traders are not involved, pre-funding must be obtained by other means

^aInflation is estimated to 15%.

characteristics of each product are listed in Table 1, to compare and contrast the key attributes of each case.

(a) *Oku white honey*

Oku white honey is a very specific product originating from a small area in the North-West Province of Cameroon. It is obtained using specific techniques: the hives are colonized in the lowlands, then transferred to the mountain forest. White or light colored, with a fresh, lemony aroma and creamy texture, this honey is unique in Western and Central Africa. The link between the quality of the product and the area is easy to establish: the melliferous plants that grow in the protected and well-defined forest of Kilum-Ijim are the source of the product's singular characteristics. The name "Oku" has been used for decades and the product is highly appreciated by local consumers.

The British NGO Birdlife International has headed the protective Kilum-Ijim Forest Project, which is based on a participatory and community approach, since 1987. This project demonstrated that improving livelihoods and incomes can have an impact on conservation by helping to change local attitudes and behavior (Abbot, Thomas, Gardner, Neba, & Khen, 2001). The reduction in the surface area of the forest has been halted, and today the Kilum-Ijim forest covers 20 km² (Penn & Gardner, 2000). Yet it is under intense pressure, with fields starting just a few meters from the forest edge.

The PAMPIG project appointed several stakeholders and experts and coordinated the process of applying for registra-

tion of a GI for Oku honey: (i) SNV, an NGO with experience in local non-timber forest products, (ii) Guiding Hope, a Cameroonian company working exclusively on honey, certification, fair trade, and organic produce, and (iii) international experts who were called in for short-term missions relating to demarcating the zone, drawing up the monitoring plan, and setting up a sensory panel.

The Kilum-Ijim White Honey Association (KIWhA) was set up and is chaired by the head of the Oku cooperative, which is the main producer of honey for sale, which accounts for nearly a third of total production. KIWhA brought together beekeepers from the two mountain faces (Kilum and Ijim) and the three production areas (Oku, Belo, and Jakiri), as well as honey collectors, merchants, and forest protection officers. The GI was registered by the OAPI in October 2013. However, in February 2014, the collective organization behind the GI (the KIWhA Association) was not operational, with no board meetings held, no membership fees collected, and no list of members. Although Oku—where the KIWhA Association has its headquarters—shows no signs of vigorous activity, producers of honey in other production areas and the merchants outside the production zone feel that all the benefits of the GI accrue to Oku. Moreover, once every 9 years, Oku honey is not white but brown, because of a plant that only flowers every 9 years. This particularity was not included in the code of practices. In addition, some provisions in the code of practices, e.g., the need to use protective clothing, are not observed. These two details suggest that the code of practices was drawn up too quickly and with insufficient input from producers.

Nevertheless, some positive outcomes can be observed:

- The selling price has increased 100% in 5 years to reach 4,000 XAF⁴ for a one-liter pot (1.5 kg) in the production area. Based on 20 tons, this means income from Oku honey has increased from €40,000 to €80,000.
- The uniqueness of this honey is now recognized by the inhabitants of the whole region, whereas previously some local people considered the white honey defective because of its lack of color. Producers had to mix it with darker honey to sell it. "People asked: 'What is this white stuff?' fearing it was just sugar mixed with water..." Nowadays its distinctive features are appreciated across a broader territory.
- Demand is growing in large cities including Douala and Yaoundé; some traders are trying to meet this demand by using modern packaging.

(b) *Penja pepper*

Penja pepper has been produced on volcanic soil about 100 km from Douala, Cameroon's economic capital for 60 years. Renowned in Cameroon, Penja pepper is also recognized by European connoisseurs as one of the very finest peppers in the world. It has a unique character combining animal aromas with a particularly fresh flavor in the mouth. Penja pepper is sold in one-kilo bags in Europe for around €120 per kilo of peppercorns as opposed to €20 for white pepper of unspecified origin. The pepper plant, *Piper nigrum*, is a vine grown from cuttings. Post-harvest processing requires abundant pure water.

It was only in the 2000s that Penja pepper began to acquire its international renown thanks to a French spice distributor. In the 2000s, *Plantations du Haut-Penja* (PHP) emerged as the largest producer, with 50 hectares and a specialized consultant to ensure best practices. PHP is a subsidiary of the French company *La Compagnie Fruitière*, whose main activity in Cameroon is the cultivation of 3,000 hectares of banana trees. In 2008, it was the only company exporting Penja pepper to Europe, where it sent about half of its production. The rest of its pepper and the pepper produced by other planters was sold in Cameroon, where Penja pepper was often mixed with cheaper, lower-quality imported pepper (referred to as "Dubai pepper") and sold in bulk.

In 2008, when the GI project was set up, the different stakeholders had different concerns. Small- and medium-scale producers wanted access to best production practices and to break into the international market. PHP wanted to safeguard the reputation of the pepper originating from the Penja area, which was threatened by the arrival of new producers who were not familiar with best practices. They wished to achieve this by maintaining a quality standard. PHP also wished to develop other forms of relationship with its business environment. Both small producers and PHP wanted to combat the common practice in Cameroon of mixing their product with Dubai pepper. All these stakeholders felt dispossessed because a "Poivre de Penja" trademark had been registered in Europe.

The PAMPIG project entrusted the GI support mission to a Cameroonian consultancy, AgroPME, in partnership with GRET, a French consultancy. The application dossier set out the principles for demarcating the production zone (altitude and subsoil), but did not provide a map. Reference was made to a subsequent phase when plots would be precisely identified.

The GI group includes both small- and large-scale producers. There are several hundred members, who all pay a yearly fee proportional to the surface area on which they cultivate pepper. The group benefits from a dynamic management team

that is quick to take initiatives, as well as a salaried Executive Secretary. The appellation zone is divided into five production areas, each with elected delegates who organize meetings and training sessions, as well as acting as participatory communication relays. Referring to a sudden surge of interest in pepper growing, is not an exaggeration.

The GI group identified common needs, many of which are already or are in the process of being satisfied: boreholes and tractors to ensure sufficient water for the steeping process, drying yards, a sorting and packaging center, storage facilities, fertilizers, plant protection products, and so on. The group has managed to attract additional support from a variety of sources, including the government, and an exceptional ministerial authorization to import a plant protection product the group felt to be essential. The total funding represented by these various forms of support far exceeds the cost of the support activities funded by the PAMPIG project. The group has also been successful in attracting political support. The Minister for Agriculture attended the meeting to approve the GI application, and Penja pepper was one of the gifts given by the head of state to celebrate New Year 2014.

This GI has thus already had several positive outcomes. Production has increased by 50% from 90 tons in 2004 (MINIMIDT-MINADER, 2005). The producer price has also risen by 50%, yielding an annual turnover XAF 525 million (€800,000) higher in 2014 than it was in 2008. Good practices are shared, mainly benefiting small producers. As one producer put it: "Now, I know why the seedlings I planted many years ago are still not producing." In fact, pepper reproduction is vegetative: any stem can produce a new plant, but only stems taken from specific parts of a plant yield high-producing plants. Several producers now export. Several distributors in Europe now use this appellation, even though an importer registered "Poivre de Penja" as a trademark in France in 2001. In Cameroon, the widespread presence of pure authentic Penja pepper on the national market presupposes the availability of cheap, light packaging making it possible to buy (for instance) 100 CFA's worth of pepper. A sorting and packaging center is under construction. Using sealed plastic bags authenticated by a logo is the only way to combat fraud. Merchants have formed an *ad hoc* association with around 20 members and have pronounced themselves in favor of this approach.

However some limits of the GI process also surfaced. A monitoring plan was drawn up and internal monitors appointed and trained, as has a sensory panel. But the system is not yet up and running. The cultivation specifications to be respected by each producer are not yet in use, even though the producers understand their necessity. The appointed monitors are not fulfilling their function, but mainly because they do not dispose of the requisite means. Another key phase that has not yet been carried out is the drawing up of a geo-referenced map of plots, thus ensuring traceability. Jumping on the bandwagon, the Cameroonian government is now supporting this GI. The main risk ahead is a decline in quality with an increase in quantity. Traceability, monitoring of cultivation and processing methods, and quality control are clearly indispensable to avoid this risk.

(c) *Ziama-Macenta coffee*

Ziama-Macenta coffee is a high-altitude Robusta described as having a slightly acid taste with little bitterness and high aromatic intensity. It is cultivated around Mount Ziama, near Macenta, in the *Guinée Forestière* region, a traditional coffee-growing area located 800 km from Conakry.

Guinea's coffee output has been declining since 1958. A project (named RC2), to re-stimulate coffee cultivation was set up in 1989 by the government and by the AFD in which the *Institut de Recherche Agronomique de Guinée* Guinean Agricultural Research Institute (French acronym IRAG) played a key role. RC2 introduced improved plant material, drew up recommended technical operations, and helped the *Fédération Nationale des Planteurs de Café de Guinée* the Guinean Federation of Coffee Planters (French acronym FNPCG) to market the coffee. However, in 2000 the project was wound up, the price of coffee dropped, and the marketing fund dried up. In reaction, several dozen planters set up the Woko cooperative with the aim of devising a quality-based marketing strategy, drawing on the expertise of IRAG. The cooperative managed to establish a higher price on the local market, but only very small quantities were involved.

At this point the PAMPIG project became involved and applied the methodology described above, insisting in particular on three points: seeking an export outlet; involving more stakeholders than the Woko cooperative; and mobilizing local and international support and, in particular, the skills of IRAG. The support mission (2012–13) was entrusted to the *Institut de recherches et d'application des méthodes de développement* (French acronym IRAM), a French consultancy, which coordinated a team comprising the local IRAG branch, a marketing expert, and the *Maison Guinéenne de l'Entreprise* (MGE). In addition, foreign experts conducted short missions to demarcate the zone and assist with the monitoring plan. Finally, in May 2014, the Director General of OAPI presented the GI to the President of Guinea in Conakry, with a lot of media coverage.

Coordinating a large number of stakeholders and agreeing on the action plan was a complex process. An association named ADECAM that was set up as a result of training sessions and meetings conducted by MGE and IRAM, motivated both planters and collectors and drew up an application for a GI for "Café Ziama-Macenta". One of the points that gave rise to debate was the name of the product. The IRAG researchers wished to use "Ziama Coffee" i.e., the name of the mountain which gives the product its specific qualities—but on the market, the product was known only as "Macenta Coffee". As for many years, researchers and government officials had been discussing using the name "Ziama coffee," they were afraid that the name "Macenta coffee" would not reward their dedication. The name Café Ziama-Macenta is thus a compromise. Another sensitive issue was the demarcation of

the production area. Two interlocking zones were finally selected, a narrow one for the production of the coffee cherries and a larger one for the post-harvest operations. The quality of the product is also related to production methods that have been carefully detailed in the code of practice, e.g., the use of traditional clones or of the five introduced clones, planting in the shade, appropriate pruning, harvesting at maturity, and drying the coffee in the correct conditions.

In this case, the main achievement of the GI process is opening up an international market for this specific product. In 2013, the first contract was signed with a European importer, Maison Jobin. Collectively, the producers were able to export a container (18 tons), but without receiving prepayment for the coffee. Prepayment for coffee is usually made by local traders at the farm gate, but none of them wanted to be involved in the GI. On the other hand, the PAMPIG mandate did not include loans, and so it was not able to grant one. The importer planned on buying considerably more in 2014, at \$2,175 per ton *versus* \$2,000 for coffee from undesignated areas. However, financing producers until payment by the importer remained an issue. Certification as a fair trade product was envisaged in early 2014, as this would have made it possible to obtain credit at preferential rates and to sell the product at an even higher price (\$2,275 per ton); however, funding for the certification audit could not be raised in time.

(d) Other case studies

Korhogo cloth, Dogon shallots, and Galmi purple onions were rejected by the PAMPIG project during the feasibility study, since the necessary assets were lacking and not easily supplied. The main characteristics of each product are listed in Table 2, which compares and contrasts the key attributes of each case.

(i) Korhogo cloth

Korhogo cloth is one of the emblems of Senufo (Côte d'Ivoire) culture, the motifs are recognized worldwide. However, some craftsmen are shifting away from traditional techniques: they use industrial paints and fabrics and draw innovative motifs in bold colors, while traditional motifs are sometimes used on fabric produced in factories abroad. It would consequently be wholly justified to restrict the name "Korhogo cloth" to the original products.

The 2002–07 crisis in Côte d'Ivoire has had major repercussions, including the gradual disappearance of the local tourist

Table 2. Key attributes of the three products which have not been registered as GI

	Korhogo cloth	Galmi purple onion	Dogon shallot
Place	Korhogo area, extreme North of Ivory Coast	Large parts of Niger	Mali, Dogon country, 700 km East of Bamako
Reputation	Well known throughout all West Africa, known worldwide	Name known in all West Africa 4–500,000 tons produced annually in Niger, half of which is exported	Name "Bandiagara jaba" is known and appreciated in Mali and some places of Guinea and Ivory Coast
Stakeholders	Dozens of painters	Very numerous producers National value chain association	Thousands of producers. Many competing or conflicting producers' associations, NGO, development projects
Major constraints	Because of the crisis in the Ivory Coast, tourist trade and trade links were disrupted. Painters in very precarious situation	"Galmi purple onion" is a variety name registered by many countries and cannot be restricted to onions produced in Niger or in part of it	Technical issues (packaging) Lack of standardized collective action
Production	Unavailable	4–500,000 tons produced annually in Niger. Proportion of Galmi purple variety, as well as production grown in Galmi area unavailable	40,000 t

trade and the severing of the trade links which had previously made it possible to sell cloth in Abidjan and abroad. In 2010, the cloth painters thus found themselves in a precarious situation in both Korhogo, where they sold the cloth, and Fakaha, where they lived and worked. The situation meant it was impossible to set up any collective action, for which lasting security and the re-opening of trade channels were essential. This is a borderline case in which the failure of the state impeded action.⁵

(ii) *Galmi purple onion (Niger)*

“Violet de Galmi” or Galmi purple onion is an implicit geographical indication used throughout West Africa for a pinkish-purple onion that is renowned for its particularly pronounced taste and its ability to thicken sauces. In fact, the denomination “Violet de Galmi” refers to two different things: (i) onions produced in Niger, where Galmi is located, and (ii) the Violet de Galmi onion variety produced in other countries in the sub-region. For some years now the Niger government and producers have wanted to restrict the use of this denomination to onions produced in Niger, and applied for its registration as a GI. It is the country’s main agricultural export, as half of the 400,000–500,000 tons produced each year are exported. It is therefore a socially and economically strategic product. A national trade association, the *Association Nationale de la Filière Oignon* (ANFO) is already operational. However, an intellectual property issue has made it difficult to obtain GI registration, since “Violet de Galmi” cannot be granted GI protection as it is also the name of a variety figuring in the *West African Catalog of Plant Species and Varieties*⁶ (FAO, 2008). This catalog states that “Violet de Galmi” is registered under this name in the national catalog of nine countries in the sub-region, meaning that its seeds may be produced and marketed within the region under this name, without this right being restricted to any group or zone whatsoever.

This case illustrates the need for coherent state action. A country cannot both allow free use of a variety bearing a geographic name, and simultaneously seek to protect the name as a GI.

(iii) *Dogon shallots (Mali)*

Some West African populations—especially in Mali but also in Guinea and Côte d’Ivoire—prefer shallots to onions, since shallots are better for thickening sauces and have a stronger flavor. Shallots have been grown for generations in the region of Dogon. Local practice is very-intensive, involving manual irrigation and bringing soil in from elsewhere, but results in high yields per surface unit. However, over the past 10 years there has been competition from “de Niono” shallots grown in the Office du Niger zone, where shallow earth and flood irrigation techniques make cultivation easier, meaning that double the quantity is produced, and at lower cost.

In 2008–09, a feasibility study for registering a GI for Dogon shallots found that they had a long-standing reputation under the name of “bandiagara jaba” (Chabrol & de Bon, 2010). A larger scale study in 2010 confirmed the specificity of Dogon shallots, and in tests, a significant number of consumers could tell them apart from “de Niono” shallots when cooked in sauces (Meyer, 2011). An origin-based quality label could thus be justified.

However, establishing a remunerative market for Dogon shallots involves technical problems: quality definition and the need for traceability (requiring packaging facilities). Social issues also apply: two rival umbrella associations, involving several thousand producers, exist in the Dogon region,

although in practice, there is little collective action. Numerous government bodies and NGOs found it difficult to give a coherent direction to their efforts. For instance, because agreement could not be reached on the location of a packaging facility, no facility has been built. Hence a genuinely regional product with a long tradition, arising from exceptional know-how, and with a good reputation, was unable to obtain a GI for one essential reason—the lack of collective, coordinated action needed to resolve marketing, specifications, and packaging issues (Fournier, Chabrol, de Bon, & Meyer, 2010).

5. DISCUSSION

The PAMPIG project proved that it is possible to register GIs in Africa without significant involvement of the state and/or national institutions, and within a reasonable time frame, by following the internationally recognized methodology cited in this paper. PAMPIG was funded by AFD, managed by OAPI, technical support was provided by CIRAD, and consultants did the fieldwork. Governments were involved only as “invited spectators.” They were consulted when the plan of action was conceived, and informed of support programs. States were involved in the setting up of National GI Committees, which had to examine the GI application before it was passed on for examination by OAPI, and which indeed were set up in around half the member states. With the exception of IRAG in Guinea, no national technical institution was associated with the support activities. Once the support program ended and the GI application ready or registered, some of the governments endorsed it and provided political support.

In this section we assess the extent to which state support was determinant in setting up and implementing GIs in the case studies and how state support intermeshes with different levels of institutional activity.

(a) *Above the state: the primary role of the OAPI, a regional institution*

In this context, the registration of GIs was made possible by the special status of OAPI and the mandate it received from its member-states to promote GIs. The OAPI system is highly original. OAPI is the common IP (Intellectual Property) office of its member states. A sole law—the Bangui Agreement and its annexes—is the common reference of the 17 member states, which do not have national protection systems. OAPI delivers all IP titles centrally, and these are valid in all member countries.

This system has major advantages. The states are divested of certain responsibilities that are pooled in a common institution where specialized skills can accrue. Furthermore, once the OAPI has granted the GI, this provides automatic, simultaneous protection in all 17 countries. Lastly, the OAPI can drive initiatives, align national policies, and represent the entire zone in dealings with the EU or other large markets, in intellectual property matters.

Despite the fact that the promotion of GIs is linked to economic development strategies that are not part of the OAPI’s official remit—this being the role of member states—at the Ouagadougou 2005 ministerial conference, the member countries mandated the OAPI to implement a project whose goal was to put Geographical Indications in place. OAPI found itself responsible for supporting producers and hence for intervening in the field. The PAMPIG project did, however, include capacity-building for about a hundred officials in all the

member states and called on member states to (i) set up a National Committee for Geographical Indications, and (ii) to identify and draw up an inventory of suitable GI products, thus paving the way for greater state involvement.

In the meantime, about half the member states have set up a GI Committee, thereby triggering debate about who should chair it—the Ministers of Agriculture or those in charge of intellectual property (generally the Ministers of Industry), who act as the OAPI's interlocutors in each country and sit on the OAPI executive board. Despite OAPI's reliance on "GI focal points" in ministries of agriculture, there was no allocation of funds from OAPI to ministerial departments not in charge of IP. As no national committee received a budget, either from the project or from the government, their effectiveness can be questioned.

Furthermore, the regulations governing the OAPI, and in particular Annex VI of the Bangui Agreement (OAPI, 1999), are very vague and open-ended about the processes leading up to registration. In article 6, Title III, the definition of the allowed applicant is so broad that any individual producer, manufacturer, or trader dealing in such products can apply for a GI. Moreover, and unlike most *sui generis* GI protection systems, the Bangui Agreement does not call for a code of practices as part of the application, to be respected by producers, and to be controlled. A code of practices is a strategic tool that can be adapted to each situation and includes provisions in favor of groups that might otherwise be disadvantaged. When the legal system calls for a representative group to apply for a GI, in fact, it is a way to make sure the voice and interests of small less-favored stakeholders are heard.

The combination of these features of the OAPI status could result in a system that is not favorable to local communities, producer groups, and less favored stakeholders. The AFD/OAPI project funding agreement requires the PAMPIG project to follow a far more precise, restrictive method than that required by Annex VI of the Bangui Agreement. This methodology was intended to reduce the risk of failure and exclusion.

(b) *Outside the state: producers and collective action*

As a common good, shared among the producers of the same area, GIs are managed collectively following a variety of logics and coordination processes (Torre & Chia, 2001). According to Barjolle and Sylvander (2002), "the primary factor in success is the capacity of a set of firms in a supply chain based in a particular area to effectively coordinate the management of the supply chain" (p. 1457). The level of collective action can thus be seen as an indicator of the success of the GI building process. The development of collective local action can be enhanced by state policies, including providing training and legal support, but it can be also be impeded by a top-down approach, authoritarianism, or contamination by political debates and interests.

Despite using the same methodology, the PAMPIG project outcomes differed in each case; state involvement did not significantly differ and was generally low. In the first three case studies, as François, Prak, and Brun (2009) pointed out in Cambodia, producers were not organized before the GI project, in contrast with the situation that usually prevails in Europe. The primary objective of the project was thus to set up an association, and this had varying results. In Table 3, we list the features of the context that explain these differences.

The international reputation of Penja pepper emerged thanks to its specific qualities and to the use of the geographical

name by a French company, who registered it as a trade mark. However, producers had no control over the use of the name, and no way of checking the true origin of the product. They feared traders would cheat on the origin, at worst, or would receive a too high proportion of the premium price. In this context, producers felt that GI registering and protection could give them a better bargaining power in discussions with the French importer. This is a case that Kerr (2006) does not consider: when a product from a developing country already receives a premium on the market, GI registering is a way for local stakeholders to obtain a fairer share of the premium, which otherwise can be monopolized by merchants who are not locals.

In each case study, for geographical, cultural, or socio-economic reasons, the heterogeneity of stakeholders was high. In the case of Oku honey, GI protection of the name was not perceived as a possible solution to problems faced by producers, whereas the GI appeared to federate Penja pepper producers (who faced problems of usurpation on the national market and undue private appropriation on the European market) and the stakeholders of Ziama-Macenta coffee (where protection of a name was a prerequisite to an origin-linked valorization strategy).

The producers' social capital (Jena & Grote, 2010) also varied significantly: it was very low in the case of Oku honey, but higher for Ziama-Macenta coffee—especially since IRAG, a national public research institution, fostered it (but was not significantly involved in collective action)—and still higher for Penja pepper. In the last two cases, leaders succeeded in federating the stakeholders and organizing collective action. However, only the Penja pepper stakeholders managed to gather additional external support to overcome the difficulties (that were not directly linked with protecting the name) faced by producers, and hence did not fall within the scope of the PAMPIG project (e.g., drilling boreholes for pure water, providing micro-credits for the purchase of fertilizer, constructing a packaging facility).

Finally, the nature of the markets for each product also explains the varying degrees of success of collective organization. Due to short supply and growing reputation, the price of Oku honey is increasing significantly, while usurpation is not perceived as a real danger, so there is no real incentive for collective action. Penja pepper has both a national and international market, which helps mitigate competition among producers. It is not easy for small producers to access the international market, but high demand on the national market means they can sell their entire production anyway.

The construction of quality and reputation are also collective processes that could be supported by institutions. Ziama-Macenta coffee does not yet have a reputation for high quality on the market. As Galtier, Belletti, and Marescotti (2008, 2013) pointed out in the case of Jarabacoa coffee (Dominican Republic), GI is a process of reputation building pursued by reaching a quality standard fixed locally but based on market requirements. It is a qualification and a collective learning process based on the empowerment of local coffee farmers. In such a case, actions should be undertaken to increase the participation of local actors in building the GI (e.g., education and information) and to increase the effectiveness of the GI (e.g., information, credit, technical assistance, access to markets). The Ziama-Macenta coffee GI indeed faces these difficulties, and needs to mobilize support other than that provided by the PAMPIG project to overcome them.

Table 3. Context elements which can explain differences in the level of collective action

	Oku white honey	Penja pepper	Ziama-Macenta coffee
Heterogeneity of stakeholders	<ul style="list-style-type: none"> • Different cultural backgrounds and languages (pidgin English is the most common) • Physical communication difficult • Distance from economic and political centers (Bamenda, Yaoundé, and Douala) • Trading companies managed by Cameroonians from other regions 	<ul style="list-style-type: none"> • Various ethnic groups, but French is the common language • Producers widely differ in size and status. PHP is the largest producer, a French company subsidiary and the largest private employer in Cameroon, its top management being dominated by foreigners. Some medium-sized producers are nationals employing hundreds of workers. The vast majority of producers are very small, some living in precarious conditions with (e.g., no access to drinking water) 	<ul style="list-style-type: none"> • Different ethnic groups, without a common language: many meetings needed translation from French into two local languages • Producers are approximately the same size • Traders are often of Senegalese or Lebanese origin, and there is a tradition of distrust between producers and traders. Traders should not be involved in the GI initiative, as they mix Ziama-Macenta coffee with lower-grade coffee
Feeling of problems and stakes	<p>Divergent perceptions of local stakeholders and experts</p> <ul style="list-style-type: none"> • Experts mention hive desertion, smoky taste of honey, unequal generic quality, use of inadequate containers, lack of protection suits, dangers of usurpation • Local producers were concerned by transportation problems and lack of collection centers, that were outside the scope of the project 	<p>Problems were felt with varying intensity by the stakeholders</p> <ul style="list-style-type: none"> • Usurpation of national market • Monopoly of one importer on European market • Producers' lack of expertise 	<ul style="list-style-type: none"> • Main issue: the low price of coffee • Main solution: quality improvement (since RC2 project) • Marketing the origin was addressed by the Woko co-operative and GI process
Social capital	<ul style="list-style-type: none"> • Producers live in a remote area • Only some of them speak English, none speak French • They are not used to traveling 	<ul style="list-style-type: none"> • Medium-sized producers are educated • Some of them often travel abroad • Some producers have connections with national and international institutions: one served as representative in the national parliament, another is representing African producers on the board of a Euro-ACP institution 	<ul style="list-style-type: none"> • The Woko co-operative president served as vice-chairman of national Guinean farmers' association • IRAG has a research station in the area and previously conducted research on agronomy, post-harvest processing, and sensory analysis of coffee • IRAG acted as a sponsor
Nature of market	<p>Short supply and growing demand explain growth of price and do not encourage further efforts</p>	<p>Penja pepper has a dual market: national and international</p>	<p>The final product is not consumed or known in the country</p>

The duration of the GI establishment process also has a crucial effect on collective organization. Compared with the European context, where seven to 10 years usually pass from initiation to recognition of a GI (in France), the PAMPIG project time frame was short. PAMPIG was active for 4 years (2010–14) and field operations only lasted up to 2 years, a very short time in relation to the pace of establishing and developing a collective action in any rural society. A sound state intervention in the GI field requires a long-term committed strategy aiming at supporting GI governing bodies and collective action, far beyond the short-term economic benefits provided by international projects.

(c) *Beyond the state: international development organizations as drivers and trainers*

In the last 10 years, between the beginning of the OAPI's interest in GIs and the end of the PAMPIG project, there has been a dramatic increase in interest in GIs among development institutions. This is reflected by the appearance of many "GI guides," published by FAO (Vandecastelaere *et al.*, 2009), AFD-FFEM (Amsellem *et al.*, 2010), the Technical Center for Agricultural and Rural Cooperation (CTA) (Ngo Bagal & Vittori, 2011), the International Trading Center (ITC) (Giovannucci *et al.*, 2009), and the EU (European Commission, 2013). FAO is implementing a program to support the development of procedures focusing on origin-linked specific quality that will contribute to rural development. It has produced publications, been involved in seminars and training sessions, and has developed a method for identifying products. Since the high-level meeting held on June 8, 2010, the EU (DG for Development) considers GIs a new field for cooperation with the African Union. A European Union-Africa Union workshop on GIs was held in Kampala in October 2011, which put forward a number of recommendations (strengthening networking, providing potential GI applicants with clear guidance, exploring available financial assistance, enhancing the awareness of policy makers). A study was commissioned on the potential of GI for African, Caribbean, and Pacific countries (Barjolle *et al.*, 2013). The EU now registers GIs for third countries; the first to be granted was for Colombian coffee in 2007. The EU currently offers GI protection to 10 Chinese products.

Non-local stakeholders, such as national and international institutions, play a key role in determining the outcomes of a GI certification process. Mancini (2013) showed that, if national institutions are ill-informed and not aware of the legal value of GIs, GI registration can actually widen the gap between players and practically exclude the poorest. In such a weak institutional context, she argues that support activities and knowledge transfer should be planned by "institutions interested (...) like NGOs, the EU and WTO" (p. 304). And in fact, PAMPIG was organized in just this way, mobilizing local NGOs, international experts, research centers, and organizations as consultants and collective action drivers. The PAMPIG project assumed that governments were not sufficiently skilled to be in charge of the support program and as a result, governments themselves benefitted from the training services provided in the framework of the PAMPIG project. Besides training 100 officials (30 in a two-week session, 70 in a three-day session), the national GI committees in Cameroon and Guinea received a one-day training when they were requested to examine the GI application(s). However, this was probably not enough to raise the necessary awareness

and to transfer the interest of the governments from international aid to the potential offered by GIs.

The risk of such an approach is grafting "the set of rules developed over several centuries in developed countries," on different societies, as noted by Bowen (2009, p. 15), and as a result, of being ineffective. Moreover, insofar as certification processes in Africa are borrowed from European models, protecting products designated by their origin could be interpreted as a new form of technical transfer from Europe to historically dependent countries. In this regard, critical analysis of the legal and institutional mechanisms of product certification are important for scholars who are concerned with avoiding the pitfalls of technological transfers and relations of dependency that continue to dominate interactions between African countries and Europe.

(d) *Not without the state: monitoring the market*

One of the main goals of GIs is to protect producers and consumers from fraud concerning the origin of products with a specific positive reputation. As mentioned above, usurpations occur on the international market (e.g., Antigua coffee, tequila, basmati rice), yet even more frequently and importantly, usurpations take place on the local market, as shown by the case of Penja pepper. In this connection, the role of the state as guarantor of both consumer and producer rights is central and irreplaceable. The OAPI funding treaty declares that sanctions against infringements to IP rights are the responsibility of the jurisdiction of each member state.

One objection frequently made against origin-based certification processes in developing countries is the comparative incapacity of states to ensure that the rules are respected. Hughes (2009) observed that the problem of guaranteeing origin is one that confronts all economies and all legal and regulatory environments. According to analyses carried out by the WTO, four times more Darjeeling tea is sold around the world than is actually produced, and this despite the fact that the Darjeeling GI is registered in India, which is an interventionist state in agriculture. Wine is probably the most closely monitored sector, because of its cultural importance, the taxes it generates, and its prominent economic role in producer countries. Nevertheless, many cases of fraud are discovered, including in wine-producing countries such as France (Pfanner, 2012). In other words, the problem of enforcing origin-based rules is a real problem for GIs, and this is something that holds true not only in states with weak regulatory capacity but, to varying degrees, in all legal and regulatory environments.

Longstanding GIs have therefore developed strategies to make it easier to guarantee origin. The trade bodies of the Cognac and Champagne industries are both actively involved in closely monitoring the market, and they both employ several legal experts and draw on the full battery of legal means they have at their disposal. GI specifications can also contain technical clauses that make it easier to guarantee origin and traceability. For instance, pre-packaged Parma ham must be packed and sliced in the Parma PDO area itself to be marketed under its name of origin (Chabrol & Muchnik, 2011). The new African GIs have taken this problem into account and seek to address it. That is why the specifications for Penja pepper (the name having hitherto been extensively misused) state that it must be packaged in the zone of origin. The group representing the GI has also sought to build up an association of distributors who accept the GI rules.

In short, the question of guaranteeing origin is one that applies everywhere, and nowhere in the world can producers simply count on the law, the courts, and the police to enforce it. They will always have to devise and implement strategies to make it easier to guarantee origin, based on varying combinations of market surveillance, communication with retailers and consumers, technical measures laid down in specifications, and the way the industry is organized. A powerful collective representative body is particularly well-suited to implement such strategies.

6. CONCLUSION

Our observations show that attempting to establish GIs in developing countries is not (at least not always) “an illusive dream” (Kerr, 2006). Here we sum up the conditions and factors that make GIs a good investment.

We show that GIs have been successfully registered in Western and Central Africa despite the lack of significant involvement of the state or of national institutions, in a short time-frame. This was made possible by the particular status of the African Intellectual Property Organization (French acronym OAPI), which is the shared Intellectual Property office of its 17 member states, and by the mandate it received to implement pilot projects in the framework of the PAMPIG project. The fact that national states were not actively involved in the PAMPIG project does not mean it was a non-governmental project. OAPI and FAO are intergovernmental organizations, AFD is a governmental agency, and Cirad is a government-supported research organization.

The PAMPIG funding agreement required a dedicated methodology, which was based on the conclusions of SINER-GI (a research project and network on Geographical Indications supported by the European Community) described in *Linking People, Places and Products, A guide for promoting quality linked to geographical origin and sustainable geographical indications* (Vandecastelaere *et al.*, 2009).

The dedicated methodology enabled the project to go beyond the vague and open-ended provisions of Annex VI of the Bangui Agreement (OAPI, 1999). However, in the future, the establishment of GIs in West and Central Africa may not be obliged to apply this method, but only to respect the provisions laid down by the Bangui agreement, which, like the TRIPS agreement, does not promote the creation of associations nor stipulate collective organization as a prerequisite for GI schemes. In agreement with Mancini (2012), we underline the need for “effective enforcement of GI principles in national legislative contexts” (p. 196). A strong and appropriate GI legislation, with emphasis on producer representation, is an essential tool for developing the organizational capacities of producers in often unfavorable social and political contexts (Bowen, 2009).

The use of the methodology described in this paper led to the selection of three local products, whose stakeholders received support in their application for a GI, and which were actually registered as GIs: Oku white honey, Penja pepper, and Ziama-Macenta coffee. As their registration is very recent, only initial effects have been observed to date. Although economic outcomes are not to be ignored, the most distinctive and promising outcomes involve the effectiveness of collective organization. In our opinion, irrespective of the product’s link to its origin, and irrespective of the diversity of the stakeholders, what counts most is (i) a shared perception of the principle

of a GI (protecting the name) as a possible solution to different stakeholder issues; (ii) the stakeholders’ social capital and the federative capacity of a leader; and (iii) favorable market characteristics. As Belletti and Marescotti (2011) put it: “products are not a ‘starter’: the triggering factors are always the local actors.”

The results of our study also highlight the interest of regional integration of IP legal frameworks. Regional integration makes GI registration more appealing, as it ensures simultaneous protection in many countries. It also pools responsibilities in a common institution where specialized skills can accrue. This last aspect is of particular interest for GIs, a new and very specific IP right that national institutions have yet to master.

We believe that the time frame of a dedicated GI project is not long enough to allow collective action to develop and consolidate, and such projects often fail to rally sufficient resources to support the supply chain. GI is a legal tool for the valorization of local products. As such, it can be incorporated in agricultural, territorial, or environmental policies, and should be mainstreamed in national and international policies, strategies, and projects. However, one limiting factor is the—as yet—limited availability of the skills required for the inventory, promotion, and protection of local products as GIs. Project monitoring and further field research are needed to identify the conditions required for effective development of GIs in developing countries and to improve methodologies in light of concrete experience. International organizations should consider making available multi-stakeholder and multidisciplinary training, taking advantages of lessons drawn from projects, thereby reducing the risk of “institutional mono-cropping” and of the “band aid approach” denounced by Bowen (2009).

Until now, Central and West African states have been spectators or facilitators of the establishment of GIs in their countries. We however do not suggest that governments should be bypassed. Far from it, creating a producer organization aimed at the controlled use of a geographical name is simply impossible if the national government does not (at least) agree. In our case, local and national authorities were kept informed of each step of the project. One overall objective of the project was to enhance the capacities required for the implementation of this dedicated approach. As Seidman (2007) argues on the subject of fair trade, we firmly believe that national governments cannot and should not be replaced. Whether GI certification ultimately and sustainably benefits all producers, including the smallest, is largely determined by national policies, as demonstrated by Besky (2014) in the case of Darjeeling tea.

Central and West African states are now much more aware than they were 10 years ago of the interest of GIs and of the availability of funding. They are likely to be more active in the future. At the end of the certification process, both Cameroon and Guinea expressed interest, and publicly endorsed official recognition of the new GIs, sometimes catalyzing local stakeholders’ collective action. As yet, however, only the government of Côte d’Ivoire has allocated a budget for a multi-annual GI program and launched feasibility studies on several products.

Controlling misuse was shown to be arduous for all the GIs under study. States are barely addressing the issue. Producers’ organizations are supposed to set up a “local guarantee system” and are in a position to exert internal control, which could subsequently be certified by an external Certification

Authority. However, despite the knowledge and training provided by PAMPIG, outcomes are still uneven at best.

The state remains the only authority in the matter of market clampdowns and its involvement is increasingly necessary as origin food gains in reputation. When consumers agree to pay a higher price for an origin-based food, fraud

and usurpation become more tempting and the need for a clampdown emerges. Although control has been identified as a critical point for the success of GIs worldwide, in countries where the government has only recently established legal recognition and protection of GIs, control is still at risk.

NOTES

- OAPI includes 17 member states, mainly French-speaking: Benin, Burkina Faso, Cameroon, Central African Republic, Congo, Côte d'Ivoire, Gabon, Guinea, Guinea-Bissau, Equatorial Guinea, Mali, Mauritania, Niger, Senegal, Chad, Togo, Comoros (<http://www.oapi.int/index.php/en/aipo/etats-membres>).
- CIRAD: Centre for International Cooperation on Agricultural Research for Development.
- CIRAD was in charge of the feasibility study commissioned by PCDA (Projet de compétitivité et développement agricole) project funded by the World Bank (2008–09).
- 1 Euro = 656 XAF (CFA Franc of Central Africa).
- There is insufficient space in this article to go into the current situation in Korhogo (in early 2015), 4 years after civil peace returned in 2011.
- The *West African Catalogue of Plant Species and Varieties* is drawn up by the FAO and the Sahel Institute (INSAH) on the basis of information provided by the 17 member countries of the ECOWAS, the UEMOA, and the CILSS.

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Appendix 1: Author's published paper used in Chapter 2 (first author)

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Quality – Access to Success, 16 (S1)

QUALITY SCHEMES AND PASTORALISM IN SICILY: RELIC FROM THE PAST OR ACE IN THE HOLE?

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ABSTRACT

Pastoralism is rooted into the economic and cultural history of Sicily, although in the last decades it dramatically reduced. This paper argues that pastoralism could contribute to shape the sustainable development of marginalized areas of Sicily, if properly managed. Quality labels with environmental standards, such as Slow Food Presidia and Geographical Indications, could be a powerful tool to guarantee the future of this old-time activity. On the one hand, pastoralism could be an effective economic strategy for small farms since it characterises the production of specialty food for a lucrative market concerned by quality and environment. It also allows the implementation of complementary activities. On the other hand, pastoralism is based on local breeds and extensive use of the land and pastures, and contributes to foster public goods such as biodiversity.

KEYWORDS

Pastoralism, origin food, biodiversity, Slow Food, Geographical Indications, Sicily

INTRODUCTION

Pastoralism and cheese production are rooted into the economic and cultural history of Sicily. In the ninth book of the *Odyssey*, Homer describes in great detail how the giant Polyphemus was breeding sheep and goats to produce cheeses and maturing them in a cave traditionally located on the Etna volcano. Out of the myth, Aristotle gave an account of Sicilian husbandry in the Hellenic period, and Roman authors like Strabone echoed these descriptions (Giacomarra, 2006). Discoveries of pre-historical shepherds sites in Sicily confirm these texts (Brochier et al., 1992).

Currently, practices have not changed, shepherds repeat almost the same centennial gestures, but a dramatic rural exodus is mutating the rural landscape. The traditional syncretism between sheepherding and cereal production is affected, and a progressively new land use is applying. Biodiversity, including breeds and wild plants, is also menaced (Massa and La Mantia, 2007, Vindigni et al 2013). Furthermore, shepherds in Sicily as elsewhere are facing social exclusion (Giacomarra, 2006). In fact, pastoralism is seen by a certain part of the civil society as a treat to forest management and by some others as primitive, unviable and outmoded (McGahey et al., 2014).

In this paper pastoralism is understood as extensive livestock production in the rangelands. We focus on sheep and goat pastoralism, since it maintains the most significant impact in terms of culture and economy in Sicily. We question if pastoralism can represent a key element for the sustainable development of the rural, often marginalized, areas of Sicily. Can extensive breeding and artisanal cheese production be considered as a way to face global challenges?

This paper has a sociological aim and it is based on the analysis of informal interviews involving a purposeful sample of micro and small farm-based cheese dairies in Sicily. Participant observation has been conducted with dairy farmers and shepherds producing sheep cheese such as Piacentinu Ennese PDO²³ and Slow Food Presidium²⁴, Maiorchino Presidium, and Girgentana goat Slow Food Presidium. This information was supplemented with the data

²² This paper is partially based on the results of the European Union LACTIMED project, managed by Slow Food, ASTER and the Mediterranean Agronomic Institute of Montpellier (CIHEAM-IAMM). LACTIMED aimed to foster the production and distribution of dairy products in the Mediterranean by organising local value chains, supporting producers and creating new markets.

²³ Protected Designation of Origin (PDO) is the stricter form of Geographical Indications (GI) used in the European Union for protecting regional foods.

²⁴ Slow Food is an international consumers' movement born in Italy in 1986 as a reaction to the homologation of culture and taste. Slow Food Presidia are projects that aim at saving native breeds, vegetable varieties and artisanal products at risk of disappearing (<http://presidislowfood.it/presidia>).

Valle del Belice Vastedda <i>PDO & SF Presidium</i>	Stretched-curd cheese made from sheep's milk in the Eastern part of Sicily.
Ragusano <i>PDO & SF Presidium</i>	Stretched-curd cheese made from cow's milk. The SF Presidium applies only to cheese manufactured with Modicana breed's milk.
Nebrodi Provola <i>SF Presidium</i>	Stretched-curd cheese made from cow's milk, sometimes with small additions of goat's or sheep's milk, on the Nebrodi mountains.
Madonie Provola <i>SF Presidium</i>	Pear-shaped stretched-curd cheese made from cow's milk on the Madonie. A small amount of sheep's or goat's milk is added to make aged cheese.
Maiorchino <i>SF Presidium</i>	Hard cheese made mostly from whole sheep's milk, with the addition of a little goat's or cow's milk in the Peloritani and Nebrodi mountains.
Cinisara cow <i>SF Presidium</i>	Breed from the area of Palermo. A typical stretched-curd cheese is made from its milk.
Giregentana goat <i>SF Presidium</i>	White coat breed with long, spiraling horns. Its milk has an excellent balance between fat and protein.
Modicana cow <i>SF Presidium</i>	Good triple-purpose cattle breed. Its raw milk is used to make Caciocavallo, Ragusano and Provola cheeses.

(Source: our elaboration, 2015)

Figure 1. Livestock and Dairy PDO and Slow Food (SF) Presidia in Sicily

2. POLICIES AND QUALITY-BASED PRODUCTS AS PUBLIC GOODS

Recent studies address how the European agricultural policy looks at pastoralism and frames it, also in terms of regulations and economic subsidies (Kerven and Behnke, 2011) and structural changes (Idda et al., 2010; Pardini and Nori, 2011). Ecological studies, carried out by International Governmental Organizations as well as by local institutions, show the positive correlation between extensive livestock production and environmental management (McGahey et al., 2014; Koocheki and Gliessman, 2005; Tommaselli et al., 2004).

The core of the European policies for rural development is multifunctionality (Potter and Tilzey, 2005). This concept reveals the non-market outputs of agriculture, underlining its social and environmental functions (Van der Ploeg and Roep, 2003; OECD, 2005; Aguglia et al., 2009). Agriculture can potentially contribute to maintain biodiversity that, far behind a monetary value, represents an essential and irreplaceable resource for society. Biodiversity in fact is considered by authors as a public good which need to be support by specific policies (Farmer et al., 2008; Cooper et al., 2009). For instance, local breeds not only represent a precious reservoir of genetic diversity, but they also play an important ecological, social and cultural role by helping to safeguard the land, rural communities and their traditions. The management of agri-ecosystems that optimise the use of indigenous breeds is considered to be an integral part of the territory and, as such, genuine public asset.

This is why intervention strategies and models have, as far as possible, the conservation of biodiversity as their primary objective. The European Commission considers that the extensive management of livestock on pasture land can contribute to halt biodiversity decline and support it (Kerven and Behnke, 2011). In applying the European regulation for Rural Development Programme (RDP) (Regione Siciliana, 2008), Sicily has provided with the Action 214/1D targeted "rear local breeds in danger of being lost to farming" specific support to indigenous biodiversity. Given the richness of the regional livestock, characterized by autochthonous breeds particularly valuable and endangered, the need to safeguard their genetic diversity through appropriate interventions is recognized. In the sheep/goat sector, support is geared to genetic improvements to the herd by the introduction and maintenance of sheep listed and certified in the herd book. Moreover, a price is planned for PDO or IGP certified lambs and kids and for animals reared in low density systems (less than 1 UAA/hectare).

Different specialty food, obtained from the local breeds and particularly appreciated by consumers, are also supported through public interventions, when officially recognized. For instance, GIs, primarily recognised as legal instruments against frauds and marketing tools, are increasingly are also considered as tools for the defence of biodiversity and for a sustainable rural development through the valorisation of the local patrimony (Bérard and Marchenais, 2006; Arfini et al. 2010, Scuderi et al., 2015). In fact, authors agree that the labelling systems based on locality have an effect also on the cultural and agrobiodiversity of a specific area (Belletti and Marescotti, 2011; Bowen and Zapata, 2009; Vandecandelaere et al., 2009). Similarly, Slow Food Presidia also address food production as a way to protect endangered breeds, varieties, techniques of production and rural landscapes, i.e. promoting bio-

cultural diversity of a territory and enhancing local economy (Siniscalchi 2013a). Some research (Antonioni Corigliano and Viganò, 2002; Peano and Sottile, 2013) highlighted the Slow Food Presidia model produced exceptionally worthwhile results, not just from an economic standpoint, but also from a cultural, social and environmental point of view. Hence, through the support of quality food value-chains, public policies aim at regulating and strengthening public goods.

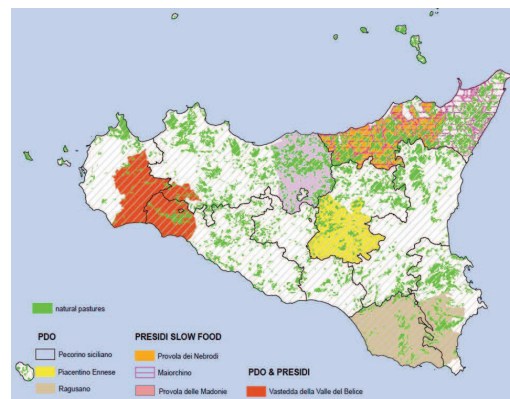
3. THE SUSTAINABILITY OF PASTORALISM: TERRITORY, BREEDS AND PRODUCTS

According to McGahey et al. (2014), pastoralism can be considered as one of the most sustainable food systems since it fosters the conservation of rangeland biodiversity and the protection of ecosystem services. The environment resources play a fundamental role in the animal husbandry system and the quality of products. Environmental quality when defining a quality-based production system for Sicilian dairy products really comes into its own through the trinomial of (i) territory, (ii) breeds and (iii) products (Lactimed, 2013).

(i) Natural pasture qualifies the Sicilian dairy production system in terms of territory: 76% of the total animals is pasture-grazed, making Sicily the third leading region in Italy behind the Aoste Valley and Sardinia. Natural pastureland covers 23% of the regional UAA and is spread throughout the region, with a particular concentration in the North West mountain areas (Nebrodi and Madonie), where they are mixed with, or surrounded by, woods (ISTAT 2011). The low productivity combined with the seasonal nature of fodder production, supports the continuation of transhumance, although the extension of such movements is consistently decreasing (Pardini and Nori, 2011). Nowadays, a regional regulation authorizes animals to graze on so-called “marine” land at low altitude from December to May and then on mountainous land from June to July.

(ii) Selection for breeding built-up by generations of farmers has created an array of breeds and populations that are perfectly adapted to their environment. However, with livestock farmers seeking to raise their income, indigenous breeds are gradually being replaced by more productive livestock units and often cross-breeds which result in decreasing biodiversity. Despite this, Sicily still has one of the richest examples of animal biodiversity heritage in Italy (Regione Siciliana, 2008). The most common breeds of sheep are autochthonous (Pinzirita, Comisana, Valle del Belice and Barbaresca), although most of the herd probably comprises genetic types. There are also the local goat breeds and populations, such as Argentata Etnea and Girgentana, albeit in small numbers.

(iii) Specialty Sicilian cheese production shows a strong bond with their territory and culture (Figure 2). Traditional cheeses are obtained from rearing indigenous breeds, by a wide range of working techniques and tools. Today, these quality-based products are often certified by a PDO. It is also worth noting a significant presence of Slow Food Presidia-certified products even if they only represent a small part of the regional market (D’Amico et al., 2011).



(Source: Lactimed, 2013)

Figure 1. Location of natural pastureland, PDO and Slow Food Presidia production areas in Sicily

4. DIVERSIFICATION BASED ON THE ENVIRONMENT: QUALITY FOOD AND LABELS

Diversification based on environmental assets is a strategic marketing of small enterprises. An agri-environmental system fostering synergies between agriculture and the environment represents a fundamental element for the competitiveness of a local system. The natural capital stock—it consists of all plant and animal resources, man-made ecosystems and the related services (Elkins et al., 2003)—is generally regarded as the origin of specific resources for agriculture. Agriculture in turn generates environmental externalities that can contribute to the conservation, maintenance, and thus the accumulation of natural capital. Efficiently internalising the natural capital on the long term is particularly relevant in the case of small and micro rural enterprises that have limited access to economic resources.

Building on Van der Ploeg and Roep (2003), and extending what Carrà et al. (2014) wrote on the small-scale fishery sector, we consider that three diversification strategies could be performed in rural areas: deepening (i.e. moving down the food chain into processing and selling), broadening (i.e. using household resources to expand income-producing activities), re-grounding (i.e. reallocating production factors for activities some of which can also be completely). Diversification allows agriculture to be more sustainable, flexible and adaptive, since it “increase households well-being and make them responsive to changes in resource states, environmental conditions and market or regulatory constraints” (Carrà et al., 2014).

In the pastoralist and dairy sector in Sicily, the three strategies of diversification are relevant. The deepening strategy is undertaken by a number of farmers that chose to transform their quality milk into cheese and perform direct sales, at the farm or in farmers markets (Zucconi, 2014). Broadening consists in articulating extensive livestock farming with other activities, like tourism in protected areas or “livestock adoption” initiatives (Sauro 2013, Pardini and Nori, 2011). Re-grounding occurs when environmental (e.g. maintain of the “Natura 2000” areas) and cultural services (e.g. museums on pastoralism and traditional celebrations) are provided.

According to our analysis, the deepening strategy is particularly relevant for making Sicilian pastoralism and quality cheese production viable. Many farmers in the selected sample show the ability to incorporate local resources in order to process quality products and to collectively capture a demand that recognizes the value. Studies show that there is a growing market niche asking for produce grown in a natural environment or with low input agriculture produce (Chinnici et al., 2002; Carrà and Peri, 2011; Tranter et al., 2009; Zucconi, 2014). It is the case of the farmers devoted to the four Sicilian PDO cheeses and to the nine dairy products that have obtained the “Slow Food Presidia” label which are also collective marketing tools (Figure 1).

Quality labels increasingly convey this environmental added-value. To gain a sustainable collective competitive advantage (which each operator will benefit from individually), the producers establish shared and protected rules which are formulated in PDO or “Slow Food Presidia” product specifications. All Presidia cheeses are made from raw milk, the animals are fed with natural feed and pasture-grazed, the production method is traditional and the gustative quality is excellent, according to a specific production. This specifies the rules of production which are normally more restrictive than those designed for PDO products and include further environmental specifications (Siniscalchi, 2013b). For example, Ragusano cheese produced as part of the Presidia is exclusively manufactured with Modicana breed cows’ milk, from November to May, and for this reason only one producer of Ragusano PDO cheese is part of the Modicana-breed Presidia initiative.

5. SOME CHALLENGES

This paper highlights that pastoralism and quality dairy sector is particularly multifaceted in Sicily. As described, besides an advanced sector following the EU regulations in terms of animal welfare, hygiene and health that manufactures and markets labelled quality food, the value chain faces challenging situations. Short and long term repercussions occur on an individual, collective and environmental basis.

European regulations²⁶ can be too burdensome in some contexts and reduce the market possibilities. Numbers of small farmers struggle to meet the necessary standards (e.g. milk quotas, hygiene and health conditions), and successfully access the marketplace with their PDO goods and Slow Food Presidia. Bureaucracy is time and money demanding and compliance to standards requires honerous investments. Moreover, 15-20% of the Sicilian dairy producers is composed by micro-livestock farmers/processors that work in ill-adapted facilities, with very low

²⁶ The main health and hygiene standards are principally defined by European Regulations (EC) No 852/2004 (on the hygiene of foodstuffs) and No 853/2004 (hygiene of animal products). This identification consists of a number of personal identification marks for the company which is thus authorised to sell finished products within the European Community. In Italy, the EEC identification is issued by the Ministry of Health through the appropriate Local Health Authority which issues a legal notice on hygiene and health. The certified holdings are subject to constant inspections.

technological capacities that do not comply with hygiene and health standards. They operate within parallel markets, outside the formal distribution circuit, often illegally. Beyond this category, as mentioned before, squeezed by the current economic conditions and hygiene and health standards, small traditional livestock farms have been subjected to a process of disaggregation and expulsion. The consequent agricultural and rural exodus from mountain and hill districts have crucial social and environmental effects.

Additionally, the way the market is managed constitutes a critical issue for the Sicilian dairy chain. In fact, it is a “fractured chain” in which marketing management is independent of the production sector and partly outside the system of local production. Shepherds and milk producers have poor negotiating capabilities and price negotiations focus almost exclusively on the price of raw milk and little on its quality, which reflects the lack of vertical integration in the chain. Small cheese dairies tend to sell at very little profit due to the concentration of distributors. The economic value created by processing is poorly redistributed between the different levels in the chain. The milk producers manage to sustain their business through aids provided by the CAP and other support measures guaranteed by the RDP.

Besides structural and technological constraints, there are social and organizational challenges. For instance, we observed a strong reticence to form sustainable and effective partnerships among farmers, processors and retailers. This is coupled with their distrust of institutions involved in governing the sector. It is true that although these institutions (e.g. Regional Livestock Farmers Association, the Sicilian Regional Council, unions, veterinary institutes, universities, research centres) are genuinely involved; they cannot always guarantee adequate and effective support.

Another critical issue relates to the land use competition. Generally, the pasture land is partly owned and partly rented, at variable prices. Indeed, the rivalry between farmers and livestock farmers is deeply rooted in Sicily. The latter have long been considered as “nomads” driving their flocks to pastures in state-owned forests, abandoned land and onto stubble fields. They subsequently come into competition and even conflict not only with land owners who see their property invaded, but also between themselves for use of the same areas of grazing land. A lack of timely agricultural interventions and livestock rotation on suitable, fenced land (enabling different species of animals to graze together on the same land) coupled with high stocking densities and over-long periods of grazing impoverishes the soil. This compromises the capacity of herbaceous species to regenerate and provokes degradation issues.

The balance between pastures and forest is not always maintained and conflict between producers and public leasing of grazing land may occur. Livestock farming frequently occurs in different locations but the practice of transhumance is decreasing considerably. Regulating this situation becomes highly complicated when traditional pastures are included into protected areas, as pointed by Giacomarra (2006). Sustainable pasture management, which is interrelated to the conservation of biodiversity in the livestock, should be one of the strengths for the definition of the food quality system linked to extensive animal husbandry, providing opportunities for the traditional and quality-oriented produce.

CONCLUSIONS

This paper argued that pastoralism could be a sustainable activity in Sicily, since it organically originates from and fosters the local territory and breeds. In fact, it has a positive effect on public goods such as biodiversity, while preserving breeds, wild plants and landscapes. This paper showed that extensive livestock farming in Sicily provides solid support for the economies of large mountain and hill districts, which have few resources to generate revenues. Indeed, livestock farming in these areas is a defence against a definitive rural exodus, an exodus which has inevitable social consequences and which plays a direct role in altering the environmental balance.

Diversification strategies are addressed by small and micro rural enterprises to increase their fragile livelihoods. High quality milk, cheese and meat rooted in this farming system are considered to be healthier and have lower environmental impacts than similar products from intensive systems, and a growing market niche is willing to pay the related added-value. In this sense, quality schemes including environmental standards, such as PDO and Slow Food Presidia, are highly valuable tools to collectively access this lucrative market. Quality schemes can also put in closer relationships the agropastoral communities with the marketplace, whereas improving their social integration and contributing to maintain rural traditions and genetic diversity. However, despite a strong institutional engagement, it seems that local administrators, technicians, producers and customers should further implement these quality schemes.

Public policies have a critical role in shaping, limiting and supporting pastoralism and cheese making based on extensive farming. The European regulation, as well as the regional one, echo the concern on the valuable role of pastoralism and artisanal cheese production. Historically marginalized areas could be a driver to a globalized sustainable world, as long as public policies look at them as a potential source of innovation and social and environmental services. New links among the stakeholders seem to be necessary to bridge the economical and cultural gap existing between the rural and urban areas of Sicily. In fact, sustainable development will not occur in marginal areas if they are isolated from the rest of the economy (Pardini and Nori, 2011).

Shepherds and artisanal cheese makers are not a category to be defended. They are instead a valuable resource to be included into a dynamic policy making process. It seems that further operational policies and individuals' capacity

building would be effective to contribute filling gaps and current challenges. Further research can contribute to the definition of these policies based on a more participatory, bottom up approach, considering traditional rural communities as the first experts in matter of sustainable local development.

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