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# Influence of *terroir* products meaning on consumer's expectations and likings

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Given the plethora of *terroir* products, local food companies could find an advantage in specifying their positioning by taking into account what the *terroir* represents for consumers. This research contributes to identifying specific attributes of a *terroir* in tune with consumer expectations, and tests their capacity to ameliorate consumer hedonic assessments and judgments for these products. Results show the potential of a positioning based on the environment, which is respected by the practices of *terroir* producers, and which also guarantees the quality of the product.

## Keywords:

*Terroir*

Expectations

Hedonic evaluation

Market-positioning

## 1. Introduction

The market for “*terroir*” food products has grown remarkably over the past twenty years, notably in France and the rest of Europe, giving rise to numerous research studies (e.g.: Aurier, Fort, & Sirieix, 2005; Bertozzi, 1995; Bowen & Zapata, 2009; Elaydi & McLaughlin, 2012; Guerrero et al., 2009; Lengard Almlí, Verbeke, Vanhonacker, Næs, & Hersleth, 2011). Marketing is exploiting this growth extensively; in France, for example, there are over 1000 registered trademarks which incorporate the term “*terroir*” (<http://www.inpi.fr>). Given this profusion in supply, the evocation of *terroir* alone soon will lose its capacity to add value to a product. There is thus a critical need to refine positioning strategies through a better understanding of potential differentiation criteria on this market.

After devoting much attention to conceptualising *terroir* products from the point of view of supply, research efforts now are focusing on demand concerns, in particular to propose consumer-driven definitions (Aurier et al., 2005; Guerrero et al., 2009; Guerrero et al., 2010) and to identify the attributes of a product that contribute most to its overall image (Lengard Almlí et al., 2011).

However, these studies consider the *terroir* product as a global entity, while research findings show that important attributes differ markedly, not only according to consumers (Lengard Almlí

et al., 2011), but also according to the products and *terroirs* (Aurier & Fort, 2007). This conforms with the PSO paradigm holding that all human behaviour results from interaction between characteristics of the Person, the Situation, and the Object of the behaviour (Leigh & Martin, 1981). Likewise, the role of extrinsic attributes of a *terroir* product should be compared to the role of intrinsic attributes such as the appearance and taste of this product: a recent study re-confirmed the essential role of hedonic motivations in the formation of overall attitudes towards traditional food products, at least for French consumers (Pieniak, Verbeke, Vanhonacker, Guerrero, & Hersleth, 2009).

This article intends to explore the reasons for the popularity of *terroir* products, and to study the relative role of the following three types of factors that may explain the perceived value of these products:

- *terroir* product meanings for the consumer produced by research focussed on consumer-driven definitions;
- extrinsic attributes, which are sources of positioning specific to a *terroir* product;
- intrinsic attributes that are linked to the taste of a product.

We first describe these factors in detail, then propose a theoretical model of the formation of attitudes regarding a *terroir* product, and lastly test the model using a traditional cheese typical of Abondance valley, an area located in the Savoie region of the French Alps. The methodology followed and analyses of the results are presented. The discussion examines the theoretical and managerial implications of the results, and we close with proposals for new research avenues.

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## 2. The *terroir* and the consumer

To pursue the objective of this research, we must first clarify the concept, “*terroir*”, and understand consumer’s expectations of *terroir* products.

### 2.1. The concept of *terroir*

Today, the term, ‘*terroir*’, which has no direct translation in English, is conceptualised in several different disciplines: *terroir* is referred to by historians, geographers, economists, sociologists, anthropologists, and managers. Furthermore, *terroir* food products are confused with closely related concepts such as product of origin (region or country) and local products, and definitions diverge depending on whether they are based on the supply point of view (sector actors) or on consumer expectations.

Despite these differences, the majority of actors appear to agree that there are two general dimensions to “*terroir*”: “*Terroir is linked to the unique biophysical properties of particular places...and is also associated with the cultural practices that have maintained these biological resources over several generations...The cultural concept of terroir is understood as the product of interacting natural and human factors*” (Bowen & Zapata, 2009). The specific attributes of a *terroir* are shaped by natural factors such as the soil, climate, and adaptation of plant varieties to the environment, and by human factors related to history, culture, know-how and tradition.

The definition of a *terroir* food product also may be elaborated by making a distinction with other closely related concepts. Literature on the effect of country or region of origin generally is evoked when conceptualising a *terroir*. Starting from the idea of distinguishing country and region of origin (Askegaard & Ger, 1998), research has refocused on the region of origin and its effect, which is even more powerful when the territory is homogenous and small (Stefani, Romano, & Cavicchi, 2006), and when there is a high level of congruence between the region and product (Aurier & Fort, 2005; Van Ittersum, Candel, & Meulenberg, 2003). This two-dimensionality (natural and human factors) seem to be shared by products of origin and *terroir* products, but the product-*terroir* congruence is acquired in the eyes of consumers who perceive the specialisation and typicality of *terroirs* and their legitimacy to produce the product (Trognon, Lagrange, & Janin, 1999).

Definitions of *terroir* products finally are very close to those of traditional food products, which implicitly suggest the same bi-dimensional structure: “*a product frequently consumed or associated with specific celebrations and/or seasons, normally transmitted from one generation to another, made accurately in a specific way according to the gastronomic heritage, with little or no processing/manipulation, distinguished and known because of its sensory properties and associated with a certain local area, region or country*” (Guerrero et al., 2009).

The attributes related to natural and human factors form images of a *terroir* such as proposed in consumer-driven definitions, and consequently should influence the perceived value of a product.

### 2.2. Modelling *terroir* food product consumption behaviour

The attributes of a *terroir* food product are perceived through two types of stimuli:

- When buying or first encountering the product, the consumer is subjected to “informational” stimuli (e.g. price, brand, ingredients, label, nutritional and environmental claims, etc.; Steenkamp, 1989), which shape expectations. These also result from the consumer’s *a priori* image of the *terroir* product.
- The actual consumption of a product then confronts the consumer with sensory stimuli perceived by the five senses, e.g.

appearance, colour, size, shape, texture, odour, aroma, taste, temperature, which leads the consumer to form an assessment of the product.

The consumer’s overall judgement finally will lean towards either the expectations or the assessment produced by tasting alone, depending on the influence of respective types of stimuli and the resulting phenomena of assimilation or contrast (see, for example, Schifferstein, Kole, & Mojet, 1999, for a review). Individual or contextual factors outside the product also can influence expectations, the gustatory evaluation, and the overall judgement, and also moderate relations between expectations and assessments on one hand, and the overall judgement on the other. This classic stimuli-response approach in sensory marketing is diagrammed in Fig. 1.

This base model enables one to assess the role of the perceived sources of a *terroir* product. For economic actors in the *terroir* sector, informational stimuli represent a marketing action variable: it is possible to focus communication on the human factor, the natural factor, the origin, know-how, history, etc. attributes, depending on the positive impact obtained with regard to expectations and overall judgement. A relevant criteria of differentiation is identified when the stimulus carrying it leads to higher expectations (compared to another criteria), and when overall judgment is better compared to when assessment is based on tasting alone (positive deviation due to information). In contrast, consumer images of *terroir* impose on marketing strategies, as do sensorial stimuli, at least when these mainly result from a fixed process (label or specifications, for example).

The model then can be validated empirically by testing the role of potential differentiation criteria for a *terroir* food product, presented in the form of informational stimuli, on consumer expectations and judgement.

## 3. Materials and methods

An empirical study allowed the proposed model to be applied to Abondance cheese, a food that is emblematic of a Savoie *terroir* and which benefits from a protected designation of origin label (AOC: *Appellation d’Origine Contrôlée*). The informational stimuli tested were scenarios illustrating certain characteristics of the *terroir* corresponding to two factors (natural and human) identified in the literature. The experimental protocol followed rendered it possible to measure consumer images of *terroir* for Abondance cheese, submit these images to stimuli, and evaluate the resulting expectations, assessments, and overall judgements.

### 3.1. Material stimuli

#### 3.1.1. Cheeses

The *terroir* product used in this study is a hard pressed cheese that is allowed to mature for at least 100 days on spruce boards. The organoleptic characteristics of this cheese are fairly consistent

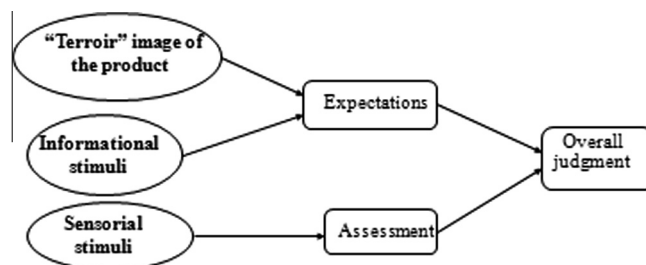


Fig. 1. Base model for the evaluation of a *terroir* food product.

from one producer to another. Two types of Abondance cheese are sold, farm and dairy; the type is determined by whether the milk used to make the cheese comes from a single farm or several farms. For the study, four cheeses of each type were selected by inter-professional organisations in the Abondance sector. One cheese served as a training product. The cheese selected has the typical sensorial profile of Abondance cheese. In conformance with current practices in experimental economics, the three other cheeses selected actually correspond to the *terroir* characteristics and were produced by the producers described in the informational stimuli.

### 3.1.2. Informational stimuli

The potential differentiation criteria for Abondance cheese were defined on the basis of a literature review and two focus groups involving 19 adult subjects, buyers and consumers of local cheeses: the goal was to elicit the dimensions and attributes of *terroir* products, in particular mountain cheese. The differentiation criteria used were formulated in the form of scenarios by a committee composed of cheese sector professionals and researchers specialised in marketing. Two attributes were selected for each factor (human and natural): the human factor was illustrated by the artisanal character, and more precisely the small size of the production unit, as well as a cooperative social organisation; the natural factor was represented by environmental preservation thanks to extensive production practices, and the quality of the environment as a guarantee of the quality of the cheese. Two scenarios corresponding to natural and human factors were the same for the dairy and farm cheese types: “environmental preservation” and “small production/small producer”. Due to its inherent nature, the “cooperative” scenario was specific to dairy cheeses, and the “environment serving quality” was attributed to farm cheeses.

In order to test the possible superiority of these attributes in relation to other characteristics of supply that are less directly linked to the *terroir*, other scenarios also were formulated. These involved other potential product selection criteria, such as the reputation of the distributor (well known cheese-maker) or producer (locally known cheese-making business) or the presence of an unofficial mark or sign of quality (first prize in an agricultural contest, store brand with an image of *terroir*). The wording of each scenario is presented in Table 1. For dairy and farm cheeses, scenarios 1, 3, and 5 illustrated specific *terroir* attributes, and actually correspond to the cheeses used in the blind tests. All five scenarios were presented to collect expectations. Scenarios 1, 3, and 5 also were used to obtain the overall judgments (tasting with information).

The measurement of expectations resulting from scenarios took the form of a 10 point differential semantic scale ranging from “I probably will not like at all” to “I probably will like very much” in response to the question: “For each of these Haute-Savoie AOC Abondance cheeses, and in the light of the information provided, please state how you expect you will like them”.

### 3.2. The experimental protocol

The protocol, carried out in a sensory assessment laboratory, incorporated three types of stimuli (sensory alone, information alone, combined) and began with blind tastings. The next step consisted of assessing the expectations induced by the information. The protocol concluded with the evaluation of the combined stimuli that allows a subject to associate the taste with the product. It avoided the contiguity of two evaluation measurements by interjecting a three-week period between sessions: the subjects participated in a first laboratory phase during which they evaluated blind the products proposed, and declared their expectations. They then returned for a second phase, which allowed their hedonic assessments to be collected with information on the criteria. The

cheeses tested were exactly the same for both phases (blind tasting and informed tasting). During the interim period between the two phases, the cheeses were refrigerated to impede the continuation of the ripening process.

During the two phases, the same respondent only tasted the farm Abondance or the dairy Abondance cheese. The sample was constituted by the partner sensory evaluation laboratory. It included 325 Savoie inhabitants, cheese consumers who had consumed Abondance cheese at least once over the preceding 6 months. The average age was 45.6 years and the gender breakdown was balanced (45% men, 55% women). In this study, the total sample was divided into two groups of equal size (dairy cheeses,  $n = 160$ ; farm cheeses,  $n = 165$ ).

Concretely, the subjects participating in the experiment underwent the following protocol.

#### First test phase (session 1)

The protocol for the two types of products (farm and dairy) was exactly the same in terms of the order of operations.

- Blind testing and hedonic evaluation of four portions of Abondance cheese, in sequential monadic order: tasting a training product, then three products corresponding to three *terroir* attributes (marked <sup>a</sup> or <sup>b</sup> in Table 1; scenarios *not* communicated); the hedonic evaluations were measured with a 10 point semantic differential scale ranging from “I do not like at all” to “I like very much”.
- Presentation of a self-administered questionnaire to collect individual characteristics.
- Presentation of a self-administered questionnaire to collect expectations in response to the five scenarios illustrating three *terroir* and two non *terroir* attributes (Table 1) regarding Abondance cheeses.

#### Second test phase (session 2, three weeks later)

- Informed testing and hedonic evaluation of four portions of Abondance cheese, in sequential monadic order: tasting a training product, then three products associated with three scenarios illustrating *terroir* attributes (marked <sup>a</sup> or <sup>b</sup> in Table 1; scenarios communicated this time). A scenario also was communicated for the training product: “this is an Abondance dairy/farm cheese made in the Haute-Savoie. It has a French AOC label”. The measurement of the hedonic evaluation was exactly the same as that used in Phase 1.
- Presentation of a self-administered questionnaire to collect individual perceptions of the *terroir* image of an Abondance cheese. The measurement of *terroir* images corresponding to natural and human factors was adapted to the scale proposed by Aurier et al. (2005): a set of 9 items (territory, region, land, mountain, history, ritual, know-how, recipe, tradition), with five-point Likert scales and introduced by the question: “From your own point of view, what determines Abondance as a *terroir* product is...”.

### 3.3. Statistical treatment

#### 3.3.1. Capacity of specific *terroir* criteria to better valorise a consumer's expectations in relation to other criteria

*T*-tests comparing means for paired samples were performed on the five expectation scores (based on the scenarios) to determine whether the three scenarios illustrating characteristics specific to the *terroir* were better appreciated than other, more generic scenarios.

**Table 1**  
Information stimuli presented in scenario form.

Cheeses & Criteria	Scenarios (Abondance Dairy)
1. Small producer <sup>a</sup>	This AOC Abondance cheese is made at a small cheese making facility in Chapelle d'Abondance by Joël Bouvier, an artisanal cheese maker. He transforms the milk of 9 farmers located around the commune
2. Reputation	This AOC Abondance cheese is made in the workshops of the Pochat & Fils cheese making facility located near Evian on the heights above Lake Lemman. It ripens for a period of 5 months
3. Cooperative <sup>a</sup>	This AOC Abondance cheese is produced by the Gruffy Cooperative: a cooperative of 20 producers who have pooled their financial resources to make and sell their products. In this way, they share in an equitable manner the fruit of their work
4. Store brand	This AOC Abondance cheese is sold under the label "Our regions have talent" (Leclerc stores). It has a fat content of 33% and it ripens for at least 3 months
5. Environment <sup>b</sup> preserved through agricultural practices	This AOC Abondance cheese, made at Fêternes cheese making facility, is produced through mountain farming, which, through its environmentally friendly practices (extensive grazing, limited fertilizer), preserves water quality in the Evian basin
<i>Scenarios (Abondance Farm)</i>	
1. Small producer <sup>a</sup>	This AOC Abondance cheese is made by Sylvie and Dominique Grillet-Aubert, small producers established in Saint-Paul en Chablais. Every day, they transform the milk of their 20 cow herd into cheese
2. Expert cheese maker	This AOC Abondance cheese is selected, ripened, and marketed by Pierre Gay, an expert cheese-maker established in Annecy. The cheese ripens in the centuries-old caves of one of the most beautiful cheese-making facilities in France
3. Environment <sup>b</sup> serving quality	This AOC Abondance cheese is made by the Gallay farm, in Chévenoz, in Abondance valley. The dairy cows graze on prairies rich with mountain flowers. The altitude, absence of pollution and biodiversity make this Abondance cheese a very healthy product
4. Awards	This AOC Abondance farm cheese, produced by GAEC le Géant in Châtel, won the first prize at the annual 2009 Abondance cheese contest organised in October during the Abondance farm fair
5. Environment <sup>b</sup> preserved through agricultural practices	This AOC Abondance farm cheese is produced by the GAEC le Mont Chauffé in Abondance on a mountain farm that, through its environmentally friendly practices (extensive grazing, limited fertilizer), contributes to the conservation of protected areas (Natura 2000 zone)

<sup>a</sup> *Terroir* attributes related to the human factor.

<sup>b</sup> *Terroir* attributes related to the natural factor.

### 3.3.2. Capacity of specific *terroir* criteria to improve the overall judgement of a product in relation to blind tasting (hedonic deviation due to positive information)

To evaluate the relative influence of information specific to *terroir* and taste, the first step was to calculate differential scores. They compared the expectations and blind evaluations (disconfirmation), expectations and overall judgement (shift in response due to taste), the overall judgement and blind evaluations (shift in response due to information). One sample *T*-test then was carried out on the differential scores to check their significance.

### 3.3.3. Impact of *terroir* images on expectations and overall judgement with regard to a product

To represent the *terroir* images of the products, a Principal Component Analysis (PCA) was performed on the items of the scale proposed by Aurier et al. (2005). Factor loadings were saved as new variables, and correlations and regressions were used to test the relationship between the *terroir* image of the product, expectations and overall judgement.

## 4. Results

### 4.1. Impact of criteria on expectations

For dairy cheeses, all of the expectations based on attributes of the *terroir* are significantly superior to other expectations (Fig. 2). The highest expectations regard scenario 5 (environmental preservation through agricultural practices) and scenario 1 (small production), followed by scenario 3 (cooperative) also based on the *terroir*. Scenario 2 (reputation) and scenario 4 (store brand with a *terroir* positioning) showed the weakest expectations. It thus appears that exposing consumers to precise information regarding the natural and human dimensions of a *terroir* (scenarios 1, 3, 5) significantly improve their expectations in comparison to more neutral information about the product ( $p \leq 0.007$ ).

In the case of farm cheeses, only expectation 3 (environment serving quality) differed significantly from the others ( $p \leq 0.02$ ). The other expectations were comparable at  $p = 0.05$  (Fig. 3). Here

again, it is a specific feature of the *terroir* that best valorises the product. Nonetheless, neither of the two other *terroir* attributes tested, whether they corresponded to the natural factor (environmental preservation thanks to extensive agricultural practices) or the human factor (small producer), proved to be superior compared to other more conventional attributes (reputation, awards).

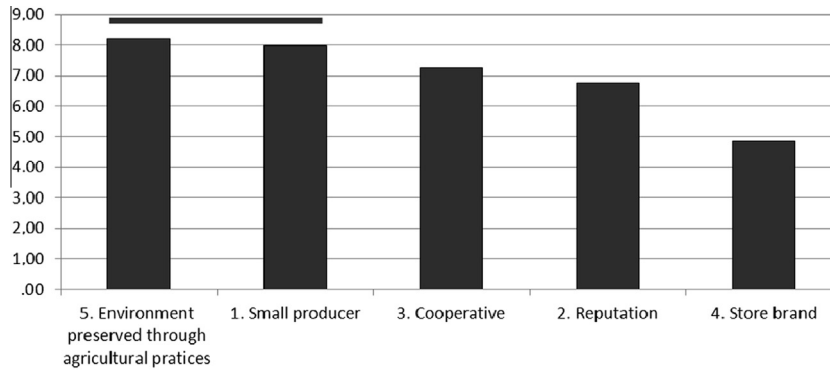
In the end, four out of six *terroir* criteria permitted *a priori* expectations regarding the product to be better valorised. There was no evidence that non-specific *terroir* informational stimuli are more effective for either dairy or farm cheeses. This result suggests the potential utility in communicating certain specific *terroir* attributes rather than more generic, extrinsic product attributes (reputation of the producer or distributor, overall image of the *terroir*, quality sign). It was observed that beyond the category (dairy or farm cheese), the two most valued attributes were related to the natural factor.

### 4.2. Impact of the criteria on the hedonic deviations

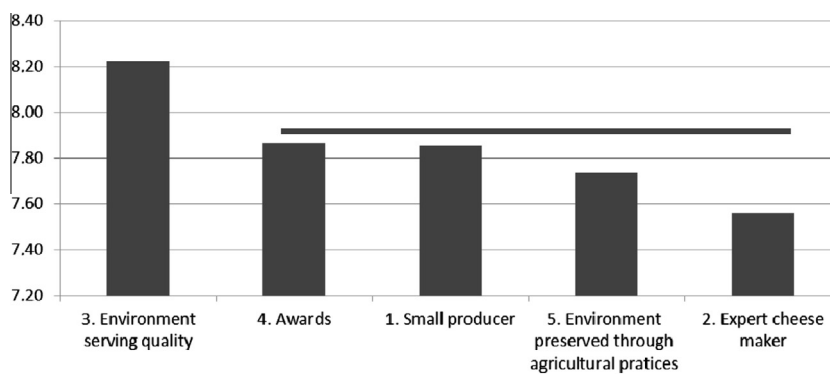
With the exception of farm cheese F5 (scenario: environmental preservation thanks to agricultural practices), all of the cases correspond to a negative disconfirmation of expectations: (E–B) is significantly different from zero and the cheeses are not as good as expected (Table 2). Furthermore, the hedonic deviation due to sensory processes, in other words, the difference between the informed hedonic evaluation (or overall judgement) and expectations (I–E) is negative and significant ( $p < 0.001$ ). Information about the *terroir* is not enough to maintain expectation levels at the moment of overall judgement.

However, it is interesting to observe the cases where the hedonic deviation due to information, meaning the difference between the informed hedonic evaluation and the blind hedonic evaluation (I–B), is significant: this situation reflects the capacity of a scenario to influence consumer opinion and to improve the overall judgement in relation to the initial assessment. This was observed for the following scenarios:

- D3: "cooperative" in dairy cheese ( $p = 0.016$ ).



**Fig. 2.** Dairy cheeses: mean consumer expectation scores according to the scenarios presented. Expectations covered by the same grey line are not significantly different according to the *T*-test.



**Fig. 3.** Farm cheeses: mean consumer expectation scores according to the scenarios presented. Expectations covered by the same grey line are not significantly different according to the *T*-test.

**Table 2**  
Shifts in judgements between blind tasting, expectations, and informed tasting.

Cheeses	Shift in response due to:				Disconfirmation	
	Information		Taste		E–B <sup>c</sup>	p
	I–B <sup>a</sup>	p	I–E <sup>b</sup>	p		
D1: Small producer	.38	.074	–.87	.000	1.23	.000
D3: Cooperative	<b>.53</b>	<b>.016</b>	–1.38	.000	1.86	.000
D5: Environmental preservation	<b>.74</b>	<b>.000</b>	–2.46	.000	3.20	.000
F1: Small producer	.21	.401	–2.72	.000	2.91	.000
F3: Environment serving quality	<b>.89</b>	<b>.000</b>	–2.17	.000	3.02	.000
F5: Environmental preservation	.20	.237	.09	.622	.15	.507

Values in bold are significantly different from zero ( $p < 0.05$ ).

D<sub>i</sub> = dairy cheeses; F<sub>i</sub> = farm cheeses, with *i* = number of the scenario.

<sup>a</sup> I–B = Informed tasting scores minus blind tasting scores.

<sup>b</sup> I–E = Informed tasting scores minus expected scores.

<sup>c</sup> E–B = Expected scores minus blind tasting scores.

- D5: “environmental preservation thanks to agricultural practices” in dairy cheese ( $p < 0.001$ ).
- F3: “environment serving product quality” in farm cheese ( $p < 0.001$ ).

Furthermore, two of these scenarios, specific to the natural dimension of the *terroir*, also corresponded to the highest expectations (Figs. 2 and 3). Finally, three of the four attributes that generated higher expectation levels allowed a significant improvement in the consumer’s overall judgement after tasting. Note further than in the case of D1 (small producer), the hedonic deviation due to information is close to the level of significance.

For these four scenarios (including D1), an assimilation effect exists, since  $(I-B)/(E-B) > 0$ . But this effect is not complete because the differences (I–E) are significantly different from zero: when

consumers are informed of the characteristics of the *terroir*, the taste evaluation remains important in the overall judgement. This result is consistent with previous research (e.g.: Siret & Issanchou, 2000).

#### 4.3. Impact of product “terroir” images on expectations and overall judgement

Concerning the data sample on dairy cheeses, it was possible to conduct a factor analysis on the *terroir* image scale (KMO index = 0.798). The scree-test revealed a single dimension. The eigenvalue of the first component was 3.635 and accounted for 40.39% of the variance. The scale had a good reliability (Cronbach’s alpha = 0.812).

**Table 3**  
Correlations between *Terroir* image and product assessments (dairy cheeses).

Pearson correlation	Expectations			Overall judgment (informed tasting)		
	D1: Small production	D3: Cooperative	D5: Environmental preservation	D1: Small production	D3: Cooperative	D5: Environmental preservation
<i>Terroir</i> Image of Abundance	<b>.212**</b>	<b>.195**</b>	<b>.222*</b>	.117 <sup>ns</sup>	<b>.161*</b>	.131 <sup>ns</sup>

Correlations in bold are significant ( $p < 0.05$ ).

ns = not significant.

\* $p < 0.05$ .

\*\* $p < 0.01$ .

**Table 4**  
The measurement of Abundance farm cheese *terroir* image (factor analysis).

	Component	
	F1: Natural factor	F2: Human factor
Region	0.896	
Territory	0.832	
Land	0.561	
Mountain	0.559	
History	0.503	0.369
Recipe		0.780
Ritual		0.699
Know-how		0.692
Tradition		0.647
Cronbach's $\alpha$	0.760	0.723

**Table 5**  
Impact of *Terroir* image on product assessments (farm cheeses).

Dependant variables	Farm cheeses	Standardised beta		$R^2$
		F1 Natural factor	F2 Human factor	
Expected scores	F1 Small producer	0.051 <sup>ns</sup>	0.138 <sup>ns</sup>	0.028
	F3 Environment serving quality	<b>0.170*</b>	<b>0.185*</b>	<b>0.090</b>
	F5 Environmental preservation	0.156 <sup>a</sup>	<b>0.199*</b>	<b>0.091</b>
Informed tasting scores	F1 Small producer	-0.085 <sup>ns</sup>	0.153 <sup>ns</sup>	0.020
	F3 Environment serving quality	<b>0.278*</b>	-0.078 <sup>ns</sup>	<b>0.065</b>
	F5 Environmental preservation	-0.014 <sup>ns</sup>	<b>0.212*</b>	<b>0.043</b>

Standardised beta and  $R^2$  in bold are significant ( $p < 0.05$ ).

ns = not significant.

\* $p < 0.05$ .

<sup>a</sup>  $p = 0.067$ .

It was possible to verify the existence of links between the perceived image of *terroir* for Abundance cheese and consumer's expectations or overall judgement when submitted to information about the *terroir* (Table 3). For dairy Abundance cheeses, expectations were linked in a systematic manner to the image of *terroir*. The more powerful *terroir* brand equity was, the higher were consumer's expectations. Results were more nuanced for overall judgements. Additionally, one should note that correlations were not significant when expectations were based on scenarios that only mentioned *terroir* in a general manner without evoking either natural or human attributes (*terroir* store brand:  $p = 0.074$ ; reputation of cheese-maker:  $p = 0.273$ ). This result confirms the added value of a positioning strategy based on specific attributes rather than merely mentioning the *terroir*.

Concerning farm cheeses, factor analysis had a KMO index of 0.766. Using a Promax type of oblique rotation like the one used by the authors of the scale (Aurier et al., 2005) the analysis revealed a bi-dimensional structure of the *terroir* construct: one factor corresponded to the natural dimension of a *terroir* while the

second factor regrouped elements related to human dimensions (Table 4). Cronbach's alphas showed a good scale-reliability.

The relatively low correlation factors ( $r = 0.426$ ) allowed multiple regressions to be performed to explain the expectations and overall judgments by the image of the *terroir* (Table 5).

For farm cheese evaluations based on a specific human attribute (small producer), *terroir* brand equity had no influence. In contrast, farm cheese expectations based on a natural attribute (environment) were linked in a quasi-systematic manner to the two dimensions of the image of *terroir*.

The contribution of the two dimensions of the image of the *terroir* seem to be comparable. The results of Aurier et al. (2005) showed an effect of only the natural factor on attitudes towards *terroir* products. However, this attitude was not measured after exposure to informational and/or sensory stimuli, but simply declared *a priori* on a like/dislike scale. The results are more nuanced for overall judgements. Additionally, one should note that regressions are not significant for expectations based on scenarios which simply evoke a *terroir* (expert cheese-maker, and awards). For farm cheeses, the perceived image of *terroir* positively influence expectations based on the highlighting of natural attributes of the product.

## 5. Discussion

This study empirically confirms the idea that the explicit statement of a *terroir* attribute may influence the assessment of a food product more efficiently than simply mentioning the region of origin (Van Ittersum et al., 2003). The observation of differentiated effects for natural and human factors also raises a number of questions. While this result is consistent with previous studies about the effect of country or region of origin (Van Ittersum et al., 2003; Verlegh, 2001), the attributes of the natural factor have a particular influence on attitudes towards food products while the attributes of the human factor are more important with regard to industrial products. Nevertheless, even for very similar foods, the specificity (dairy or farm cheese) seems to play an important role: for dairy cheeses, the human factor (scenarios D1 and/or D3) influences the level of expectations, the hedonic deviation, and the impact of the image of *terroir* on the expectations or the overall judgment. However, for farmer cheeses, no effect of the human factor was observed. One possible explanation is that consumers probably consider farm production as artisanal and small (non-industrial). Thus, the "Small Producer" scenario (F1) does not provide additional information and therefore does not change the perception of the product.

The specific characteristics of a *terroir* food product may only be relevant differentiation criteria if they respond positively to consumer's motivations: for example, the characteristics related to the human factor can satisfy ideological motivations (e.g.: support the local economy, Lengard Almlí et al., 2011) and those related to the natural factor can reflect a need for reassurance in relation

to health concerns (e.g.: a correlation of 0.74 between health and naturalness motivations, Pieniak et al., 2009). However, the ethical and environmental behaviours stem from various motivations and these behaviours may be motivated by self-interest rather than altruism: a study shows that consumer motivations for purchasing organic dairy products were first taste, food safety and health benefits, far ahead of environmental and ethical motivations (McEachern & McClean, 2002). Thus, for *terroir* food products, environmental concerns may correspond more to health concerns than ecological concerns. This probably depends on the level of consumer's regional ethnocentrism. Moreover, consumers with a greater sense of regional ethnocentrism could be more sensitive to *terroir* characteristics related to the human factor because they feel proud when they purchase regional products and support regional businesses (Fernández-Ferrín & Bande-Vilela, 2013).

## 6. Conclusion

The main goal of this study was to verify if certain specific characteristics of a *terroir* could valorise a product originating from it, and therefore explicitly contribute to the positioning of the product. The results show that in the case of Abondance cheese, communicating the natural dimension of a *terroir* (attributes evoking the environment) achieves the most positive impact on product-related expectations for both dairy and farm type cheeses. For the dairy type, expectations formed based on information regarding the human dimension of *terroir* (small producer and cooperative) take second and third position.

In addition, it appears that attributes evoking the environment significantly improve overall judgement compared to blind tasting alone. Taking the environment into account thus seems to be interesting to promote both a purchase (impact on expectations) and a re-purchase (improvement of the overall judgement after consumption). Information on human organisation (cooperative) has comparable effects for the dairy type Abondance cheese. Finally, the way by which the consumer perceives the *terroir* influences significantly his or her expectations, if, to a lesser extent, his or her overall judgment of the product. The more powerful the *terroir* brand equity is, the more the *terroir* attributes of a product are valued by the consumer. This is all the more significant when these attributes concern the environment, and this is in agreement with the suggestion of Pieniak et al. (2009) for whom, "the natural character or image of traditional foods constitutes one of its major assets vis-à-vis consumers".

These results suggest new opportunities for marketing *terroir* products:

- Advertising and packaging should emphasise a *terroir's* specific attributes, especially those corresponding to its natural dimension, rather than a general *terroir* image;
- The effectiveness of such a position is strengthened when the *terroir* benefits from a powerful image: companies that manufacture *terroir* products should highlight not only the product, but also the *terroir*, in partnership with institutional stakeholders.

This research has some limitations linked to the validity of the scale of *terroir* images and to the stability of its dimensions. These

points therefore should be investigated further. Likewise, future studies using other differentiation criteria and other *terroir* products should be envisioned.

Moving beyond the results and their implications, it would be useful to pursue research on how a *terroir* is conceived and perceived and the consequences from the consumer's point of view. New research appears necessary to better understand the links between food motivations, the *terroir* image of the product, and reactions to *terroir*-specific stimuli.

With a view of positioning and segmentation, the study of interactions between products, *terroirs*, and consumers should prove to be fruitful. In particular, the need to differentiate the marketing of *terroir* products according to the target (*terroir* residents versus non-residents, or tourists) merits new studies.

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