8 Transformation and Consumption of High-Quality Meat: the Case of Chianina Meat in Umbria, Italy

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The production of high-quality foodstuffs[1] is the single most important objective pursued in Umbrian agriculture, since geographical conditions and institutional limitations ensure that any farm strategy or agricultural policy aimed at bulk-production is doomed to fail. At the same time natural conditions favour the production of genuine, tasty and typical products. Umbria has a strong tradition in high-quality food production and the importance Italians attach to delicacies enhances perspectives for increased local value-adding in agriculture, against a general trend towards industrialization and standardization.

The research on which this contribution is based analyzes the specific possibilities for the valorization of the commonly acknowledged high quality and typicality of Umbrian beef. The scope of the research entails the entire beef sector in order to obtain a clear understanding of its endogenous development potential. The results serve as a point of departure for discussions with regional authorities and the local groups of farmers with whom we collaborate to define actions to safeguard and develop their precious patrimony. The research started with the assumption that the concept of quality should be seen as a social definition. It focuses on the way in which people talk about quality, exchange and articulate their ideas about quality and how they structure their actions. Simultaneously, it is through this particular focus that we can analyze how everyday practice shapes and reproduces people's concepts of quality. We have therefore studied all relevant 'actors' involved in the production, distribution, transformation and final consumption of beef produced or sold within Umbria.

The dominant trend in research on meat quality in different countries is characterized by the typical marketing view, that atomizes consumers as merely individuals who finds themselves in front of counters. This standard approach usually involves surveys on consumer preference and consumer panels under standardized conditions. The purpose generally is to establish the preferences of consumers as well as to identify the criteria applied for their choice, mostly concentrating on the 'first-look variables' such as price, colour, visible fat content etc. (Steenkamp *et al.* 1986). We certainly share their view that quality is a subjective item. But there is

much more than just individual preference. The desegregated demand-side as the decisive criterium is too narrow a focus on what a market really is. Paramount is the *social interaction* between consumers, butchers and farmers: it is from this highly differentiated interaction that different market segments or 'social circuits' for the communication of specific quality notions result. Hence consumer preference and market segments do not exist as just static phenomena, but are constantly being created and altered.

Of course, it makes all the difference whether we talk about the Dutch situation, for instance, or about central Italy. In the first case, butchers, and therefore their clients, generally do not know where and how the meat is produced. Ironically, at least in the Netherlands, it is the supermarkets that increasingly impose definitions of the origin and quality of meat. In Umbria, however, 80 percent of the regional turnover of beef is channelled through small butcher's shops. Most butchers select their merchandise directly from farms in the neighbourhood, applying very explicit, though differing criteria. Umbrian consumers often explicitly ask for certain meat, i.e. tender, genuine, tasty, easy to prepare, originating from the local Chianina breed or being just *nostrana* (local).

It is our view that any definition of quality is determined by the many-facetted interaction of all those involved in the realization and appreciation of the final product. Personal contacts and the exchange of information and ideas among the various actors are conceived as central to the development and social reproduction of different and mutually competing definitions that can be identified within a particular socio-economic context. This point of view implies a so-called along-the-chain investigation of the definition, articulation and negotiation of particular quality-definitions, as linked to particular social circuits of interlinked producers, distributors, transformers, and consumers. Within these circuits the butchers are considered to be the central pivots around which consumers and farmers position and articulate themselves, that is, the butchers are the crucial *interface* between supply- and demand-side actors.

As far as we know, this approach to the beef sector is rather unique; first because it refers to specific socio-economic circuits instead of referring to rather abstract categories such as market segments or consumers, and second, because it identifies specific origins and particular processes of production as valid quality criteria. The typical zootechnic and/or agro-economic research on beef production is almost exclusively concerned with *quantitative* indicators, such as daily weight increment, precocity, feed conversion factor, slaughter rate and fat percentage. These parameters are then related to the kind of breed kept, the feed system and the type of stable used (see Giorgetti 1990 for central Italy). Other research concerns physio-chemical characteristics of beef fibres during slaughtering, conservation and preparation (pH, redness, brightness, sarcomere length, drip loss, water loss etc.), mainly related to tenderness and taste. Such a limited

research focus masks the reality of the Umbrian beef sector. The persistence of the famous local *Chianina* breed with its tasty and typical meat (Poli 1991), and the widely diffused use of particular kinds of fodder produced on the farm, both highlight a largely quality-oriented market.

Unfortunately the impact of breed and feed on the quality of meat, (taste, fibre, tenderness, water content, genuineness, etc.) has never seriously been studied. This paper tries to pay due attention to these particular aspects of the notion of quality. An implicit purpose of our research work is indeed to revitalize criteria that have been marginalized, if not omitted from current research, acknowledging therefore the recent trend towards more genuine, tasty and recognizable food. Umbria, known as 'the green heart of Italy', and already famous for some of its agricultural quality products[2], constitutes a promising base for this type of development.

Many people would identify at first sight the traditional production and commercialization of beef in Umbria to be 'backward'. Exploring further, they would be surprised to find out that in many respects it is far ahead of the half-hearted campaigns and efforts elsewhere to combat the negative image of meat, to de-industrialize certain aspects of farming, and to establish direct relations between consumers and producers, etc.

This chapter presents first a description of the research methods and techniques used, elaborating the concepts of 'actor-oriented approach' and 'styles of farming'. A schematic summary of the principal results is then presented, highlighting the three main social circuits that have been identified as far as the 'passage' of meat from producers to consumers is concerned. After this global introduction the different styles of cattle farming to be found in Umbria are discussed. This analysis is followed by a description of the different types of butchers who are characterized, among other things, by the origin of their merchandise. The butcher's knowledge of the on-farm production process appears to be essential to their quality definitions and economic strategies. Finally, the results of a survey among 150 Umbrian consumers are presented. The final section summarizes the potential for endogenous development in the beef sector of Umbria.

Theoretical Notions and Research Methodologies

Umbria is an interesting region with regard to the beef sector. It contains an enormous diversity of cattle farms, varying from the traditional summer ranches in the hills and mountains to the large modern farms with French cattle for fattening in the low plains. In addition, the *Chianina* breed occupies a prominent place in the regional market. There is also a considerable variety of chains through which the beef finds its way to the consumer.

As mentioned, current research on the meat-sector is quite biased. Our research assumed that considering the persistence of various farm types, the supply-side would strongly co-determine the distribution sector, the final consumption, and the ample range of quality definitions. As far as the latter are concerned we assumed that, apart from a prestructured marketing survey, a profound *qualitative* study of each element of the concerned chains was indispensable. The methods and techniques used in our empirical research closely relate to some of the theoretical notions we had in mind. One of them is the actor-oriented approach (Long 1977: 187-92; 1984), which sees social phenomena, such as the definition of meat quality within a group of interlinked persons, as the result of the actions of those persons. Actions constantly reinforce, and eventually redefine, the implied rules for behaviour. A second theoretical concept, still closely related to the actor-oriented approach, concerns the diversity in *styles of farming* that can be identified within a given agricultural context. Crucial to this concept is the assumption that farmers (or farmers' families), as social actors, structure the labour process and consequently the process of production and commercialization according to their own strategic insights. Within the agro-technical and administrative[3] space available to them, farmers develop an ample repertoire, that is a set of different 'logics of farming' (van der Ploeg 1985). Consequently, one might assume that farmers play an equally active role in the definition of the quality of meat – a notion that surely will be linked to their opinions of how the meat ought to be produced.

Given the above mentioned contextual implications and theoretical guidelines, the research, conducted among Umbrian butchers and farmers (being the 'full-time actors' in the chain), was directed towards an understanding of their concepts of quality and related entrepreneurial strategies. A number of in-depth interviews were held, while observing the actors at work and discussing the way in which they exercised their profession, thus trying to unveil the practical consequences of their definitions of meat quality (and vice versa). Special attention was paid to the so-called 'domaine de l'indiscutable', the domain of ideas and practices people take for granted or do not formulate explicitly. Each interview lasted for several hours and was conducted at the work site. All interviewers (rural sociologists) had experience with this kind of work. These semi-structured qualitative interviews were followed by surveys of a larger scale,[4] providing the statistical backing for the hypotheses that had emerged from the first inquiries. The in-depth interviews turned out to be of great help in the design of the structured survey questionnaires, and they were indispensable for a meaningful interpretation of the statistical output derived from the surveys.

For the research among Umbrian consumers we resorted to structured questionnaires. This was done for two reasons: First because consumers were not expected to be able to digress on meat quality in the way farmers

and butchers do, second, the interviews with the butchers had already satisfied a great number of our questions about consumer behaviour. This 'shortcut' then was also facilitated by the fact that all three questionnaires (on farmers, butchers and consumers) were scrupulously co-ordinated, so as to match the same topics; sometimes they even contained exactly the same questions. The comparative value of the material was further enhanced by asking every interviewed person what the quality criteria of their suppliers or clients were. In this way the research developed into a real 'along-the-chain' investigation.

The collection of empirical data started by interviewing the butchers. A practical reason for this was the fact that the butchers could provide us with useful information on both production and consumption. This enabled us in a second phase to model farmer and consumer interviews and questionnaires on the results obtained from the butcher interviews. This approach also provided us with the names of the supplying beef-cattle farmers, so that we could follow, once again, the empirical structures of the 'chains' themselves. The samples for the in-depth interviews included some 30 farmers and 30 butchers. The interviews involved 150 butchers, farmers and consumers and were stratified in Umbrian territory on the basis of community membership. Afterwards these samples were checked for their skewedness on certain phenomena (such as frequency of hallmark adherence or farm type) and eventually adjusted.[5] Our research did not include the supermarkets, schools and restaurants, which are the large distributors of beef. One reason for this is that 80 percent of all sales in Umbria are handled by the butchers' shops; restaurants and schools also order from there. Another reason is that it is more or less known where the supermarkets acquire their produce: from the wholesale dealers or directly from a number of very large farms that are able to provide a uniform and cheap product which looks good. On the other hand, some supermarkets give concessions to 'independent' butchers, some of whom are present in our sample. A third reason is a practical one: the beef farmers in the region supply almost exclusively to local butchers and not to supermarkets[6] etc. Taking the butchers as the only distributors/transformers, made it easier to match them later with certain types of farmers. Consumers were contacted and interviewed in the street. The number of 150 was arrived at by means of cumulative stratification: as the interviews progressed, care was taken that every age category, every professional category and every community type (qua dimension and geographical position) was finally represented according to its relative regional importance.[7]

The main statistical procedure was the identification of a limited number of typical subgroups within each sample. This was done by means of factor analysis in the case of the farmers and multivariable frequency analysis in the case of the butchers. The calculations were not made at random, but were inspired by the general understanding obtained from

the first series of interviews. The second step was to compare the average scores of these subgroups on the various variables. The most interesting results are presented here in the form of plot-like images. This method leads to a comprehensive simplification of the at times very complex material. The elaboration of the consumer data was organized mainly in the form of cross tables, confronting the answers of the most interesting categories (for example townsmen versus countrymen). In a final stage the subgroups identified among farmers, butchers and consumers were related (matched) and put into a flow scheme (see Table 1), showing thus the principal social circuits for the production, transformation, distribution and consumption of beef in Umbria. This flow-scheme takes account of the different quality definitions.

The interpretation of the comparison of the frequencies and average scores of the subgroups (notably those among farmers and butchers) was not always easy. Sometimes it looked as if the answers of those interviewed did not correspond to the criteria on which these groups were formed, i.e. with their supposed entrepreneurial strategy. We suspect that some responses were only meant to make a good impression on the interviewer. But mostly more complicated phenomena were at stake. The most important one being that of the 'implicitness' of some quality criteria. For example, within one of the circuits identified, the criterion 'genuineness' was regarded as implicit to the feed used and to the 'style' of these (small-scale) beef farmers. But the interviewed persons mentioned other criteria as being of prime importance, such as tenderness, i.e, characteristics that, unlike the indisputed genuineness, involved individual judgements. We were able to reveal these kinds of hidden results with help of the information provided in the preliminary in-depth interviews, as above.

For reasons of space we will not elaborate here on how the statistical significance of the difference between two average scores was determined, but in brief, Chi-square scores of cross-tables were compared with (two-tailed) Pearson correlations, taking account of the size of the subgroups concerned.

Three Social Circuits for the Definition of Quality

This section summarizes the main research results, describing first the three most typical along-the-chain social circuits through which production, transformation, distribution and consumption of beef are co-ordinated and structured. In each of the particular circuits, the artisanal, the industrialized and the anonymous, one encounters a specific definition of quality. The circuits should not be seen just as market segments through which the meat flows, but rather as institutionalized patterns of interaction

between certain social actors (albeit loosely organized) who actively define their own notions of quality.

Table 1 gives the most typical circuits identified. Of course not every farmer, butcher or consumer falls into one of these three social circuits.[8] That is, the scheme is a simplification of reality. However, that does not alter the fact that the presented 'extremes' are relevant and recognizable as such within Umbria. Especially the first circuit is very clearly present; it comprises 35 percent of regional production and 30 percent of all butchers. Butchers in the 'industrial' and 'anonymous' meat circuits total another estimated 30 plus 30 percent. The next sections will show how, within every category of actors along-the-chain, we came to the subdivisions on which the scheme presented below is based.

Table 1 Summary of the Characteristics of the Three Along-the-Chain Circuits Identified

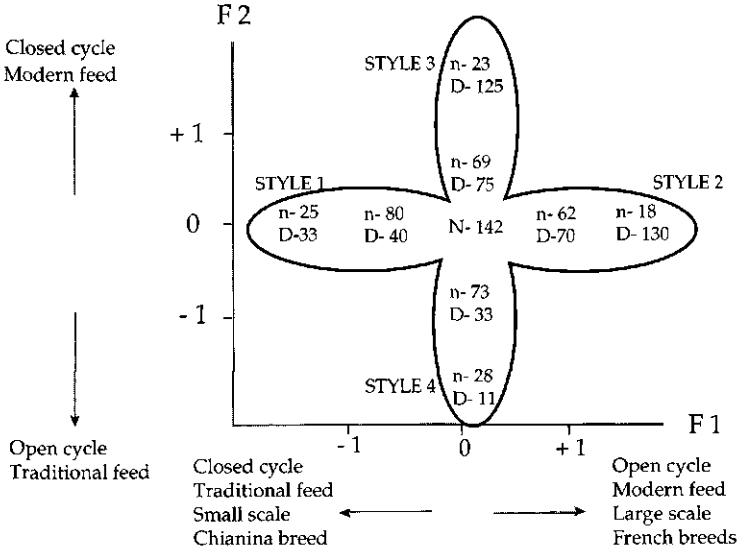
ARTISANAL CIRCUIT	INDUSTRIALIZED CIRCUIT	ANONYMOUS CIRCUIT
	FARMERS	
Small-scale farmers in hills Chianina livestock Closed cycle of reproduction Use of traditional fodders Animal has 'its time to grow' Self-sufficiency in fodder Quality=dark colour + use of self-produced feed	Large-scale farmers in valley French fattening-calves Modern, industrial feed High livestock burden on land Speeding up growth cycle Quality=tenderness + tastiness by infiltrated fat	Import
	Wholesale dealers with cheap meat, also sold in pieces	
Farmers know their butchers appreciate use of certain feed Close personal relations with butchers Butchers said to accept high final weight	Farmers know butchers want lean, tender and bright coloured meat and official guarantee Butchers would not care too much about content and feed used Farmers aware of importance high rate meat/bone and low final weight (French breeds)	
	BUTCHERS	
Butchers convinced that small farmers produce better, natural meat Prepared to pay 10% more for right quality	Butchers require standardized feed and 'scientific' approach as found on large farms	Butchers want young animals (tender, white meat) Not very prepared to pay for quality
Quality for butchers=tasty, genuine Strategy butchers production-oriented Some butchers prefer Chianina meat	Quality=tenderness and bright colour Strategy butchers oriented towards transformation and presentation	Quality='white' meat Strategy butchers merely directed by demand for easy meat and low price
Butchers presume clients search genuine product, eventually Chianina Clients presumed to be rather prepared to pay more for quality	Butchers presume clients want tender and tasty meat, who therefor pay less attention to fat	Butchers presume clients want 'white' and very lean meat Clients presumed to be unwilling to pay for quality
	CONSUMERS	
Personal trust important for consumers Consumers from the country: connoisseurs Want tasty meat	Yuppies among consumers mind hallmark Consumers 'buy with their mouths'	Townsmen Consumers 'buy with their eyes'

Styles of Cattle-farming

From the thirty in-depth interviews that preceded the survey, some farm characteristics appeared to be of particular importance for explaining the differences in the definitions of beef quality given by the farmers themselves. These were: number of livestock kept; the type of feed used (traditional or modern);[9] the kind of breed kept (Chianina or French); and reproduction cycle (open or closed). In other words, the way in which farmers organize their farm, that is their 'style of farming' (expressed here in terms of these four parameters), influences the criteria used[10] in qualifying their product. But also the reverse holds true: farmers have explicit and implicit ideas of what constitutes a good product and they shape their farms accordingly.[11]

The above mentioned farm characteristics combine in all possible ways in Umbria, giving rise to an enormous diversity in beef-cattle farming. Some specific combinations, however, turned out to be particularly relevant in the analysis of our 150 farmer sample. A factorial analysis, run on the basis of the four variables mentioned above, resulted in two main factors (principal components), explaining 67 percent of the original variance. The two factors provide us with four typical groups or 'styles', represented by the four arms of the two axes in the plotted image below. The result is presented in Figure 1.

Figure 1 Number of Farms Falling into the Groups Defined by Factor 1 and 2 (n) and their Average Livestock Dimension (D)



Here, each extreme group is a subgroup of the larger one towards the centre. The extremes have factor scores greater than +1 or lower than -1 on one factor, and are neutral on the other.

The reader must note that both the horizontal and the vertical axes comprise the whole interviewed population and as a result, the larger groups at the centre have an overlap going from F1 and F2. The extremes, however, exclude each other and are therefore to be considered as different groups. We will refer to these extreme groups as 'styles of farming'.[12] The horizontal axis will appear to be of particular relevance, since it has a greater explanatory value in statistical terms.

The sample of 150 farmers was stratified according to the different farm types to be found in Umbria, and their relative weight, as derived from the regional government census data. Table 2 shows the outcome. Farmers with more than fifty animals are over-represented in our sample and as a consequence the numerous small farmers are under-represented. This was done in order not to end up with subgroups in the large farmer category that were too small.

Table 2 Stratification of the Sample According to Farm-Type

	CLOSED CYCLE OR CLOSED + OPEN				
SCALE	Chianina only	also Chianina	without Chianina	FEEDLOT	TOTAL
5-10	24 (16%)	17 (11%)	11 (7%)	12 (8%)	64 (43%)
11-50	10 (7%)	16 (11%)	10 (7%)	10 (7%)	46 (31%)
> 50	10 (7%)	10 (7%)	10 (7%)	10 (7%)	40 (27%)
TOTAL	44 (29%)	43 (29%)	31 (21%)	32 (21%)	150=100%

Figure 1 shows the average number of livestock per farm (D). Taking into account the different reproduction cycles,[13] we see that style 2, qualified as the *industrial* type of farming, produces by far the most animals a year. It is these large farms that account for a good part (35 percent) of total beef production in the region.

Looking at the basic characteristics of the groups created by factor analysis, it is precisely the large farms that make use of modern feed (silomaize and industrial compound feed) while the small ones stick to traditional feed. In fact the expansion of some farms, essentially during the last twenty years, was made possible by the intensification of land-use (irrigated maize crops) and the acquisition of industrial compound feed.

Hence, a larger stock often implies a higher animal burden on the land (see Table 3). Since small-scale farming is usually associated with self-sufficiency in feed and fodder, the relatively high percentage of feed bought by the category of small farmers with an open cycle (style 4) might be at first sight surprising. The explanation is that for this category, beef

cattle are not a fixed activity; many of them fatten calves in winter only (when they have more time) or during years in which they can fill gaps in the local market. Hence, fodder crops may not be of first interest to them. Normally they have some grassland available to produce the basic feed. But the most important fact is that the feed they buy is always in the form of hay and cereals, acquired from nearby farms. This highlights their preference for the traditional kind of feed; indeed, nothing would be easier for them than to buy ready compound feed (note also their strong conviction that 'small farmers feed better', as shown in Table 4).

Farmers of style 1, qualified as *artisanal*, remain by far the most self sufficient in feed among the four styles. This might have to do with their often isolated position in the hills (see average altitude), on the other hand it corresponds to the strategy of the closed cycle. Alongside a certain restructuring of *space* (scale, commercial relations, high percentage of feed bought) the rapidly expanding farms (notably styles 2 and 3) also contain a certain restructuring of *time perspectives*. The use of industrial compound feed (and perhaps other substances) in order to accelerate growth, is just one example. Another is the shortening of the reproduction cycle by reducing the time between subsequent births of calves. This strategy is particularly relevant for farms with a predominantly closed cycle, styles 1 and 3, so we will limit ourselves to them for a moment. Artisanal farmers (style 1) made it clear in the in-depth interviews that they often have difficulties with the calving of their (delicate) Chianina cows. This explains the bad performance on the reduction of the inter-calf period. A second factor may be that the very small breeders do not have enough space and money to afford a bull of their own. This would largely solve the problem; as the Umbrian proverb says, 'the bull never fails'.

The qualities of small farmers, i.e. those of style 1 and 4, are to be encountered mainly in the domain of feeding. It might perhaps cause surprise that there is a broad consensus among *all* types of farmers about the superiority of small cattle-breeders in this field. Table 4 reaffirms this (the incidence of farmers answering 'I don't know' or 'No difference' only reinforces the significance of the percentages).

The thirty farmers involved in the preliminary in-depth interviews were asked to comment on a scheme involving a small farm with a closed cycle using traditional feed (A) and a scheme involving a large feedlot (B). They were asked which farm was better and why. Typical responses were: 'Farm A is better because it breeds its own animals and is more secure about the meat (...) there is care and 'pasione'. And, 'On farm B they stress feed more, those breeders calculate more in terms of chemicals and economics.'

Table 3 Average Scores of the Four Styles on Structural Variables

	ARTISANAL	INTERMEDIATE		INDUSTRIAL
Style number	1	4	3	2
Number of farms *	25 (80)	28 (73)	23 (69)	18 (62)
Type of feed	traditional	traditional	modern	modern
Scale	small	small	large	large
Dominant breed	Chianina	(mixed)	(mixed)	French
Reproduction cycle	closed	open	closed	open
Altitude	470	320	350	330
Animals/ha fodder	1.1	1.4	1.9	2.8
% of feed bought	20	48	39	37
Lucerne yield/ha	83	93	72	70
Intercalf period	458	422	407	405
Feed conversion **	9.4	9.5	10.5	11.5
'Costs too high'	28%	39%	26%	50%
'Lowering possible'	36%	21%	39%	28%
> 20% sold to wholesale dealer	4%	0%	13%	11%
> 20% to consumers	12%	25%	4%	0%

* Number in brackets refers to the number of farms in the larger, composite group.

** The feed conversion factor is expressed in number of fodder units used per kg weight increment (1 unit equals 1 kg of barley).

Apart from the obvious difference in final meat *quality* caused by the choice of feed and breed, the greater care these farmers devote to their livestock is also translated into *quantitative* terms. Contrary to the general belief that large farms of the industrial type, with a rigid 'scientific' feeding system (style 2) have better technical results, conversion of feed into meat turns out to be more efficient in the case of the small breeders with their traditional feeding system and better animal care. The good score on feed conversion corresponds to these farmers' definition of good farming, in which it is important not to waste inputs, not to 'throw away money'. This is also reflected in the way they cultivate their crops: they seldom use herbicides and pesticides or heavy fertilizing. Nonetheless they arrive at fairly good yields, especially in grass/lucerne hay, the basic fodder crop.

While large farmers agree in general terms about the merits of their smaller colleagues, they do not consider making any changes in their feeding system. This clearly emerges from their answers on more explicit questions. A large farmer: 'All right, one gets always a better quality without silomaize and with as little fertilizer as possible, but it would take too much time. Having four or five animals you can do that, but on this farm silomaize is necessary to make a shorter cycle.' Clients of small farms with traditional feeding, however, care very much, as is shown in

the butchers' survey. They select their supply farms mainly on the basis of the feed they use.

Table 4 Average Scores of the Four Styles on Quality Issues

	ARTISANAL	INTERMEDIATE		INDUSTRIAL
Style number	1	4	3	2
Small farmers feed better Small farmers care better	76% 72%	96% 68%	61% 57%	72% 56%
Own fodder better Buyers' opinion	52% 32%	50% 25%	44% 22%	28% 22%
Silo-maize and industrial compound feed worse Buyers' opinion	32% 20%	25% 25%	4% 9%	0% 0%
Meat of the mountains better	80%	82%	70%	72%
Chianina superior * Buyers' opinion	20% 24%	28% 32%	22% 0%	16% -5%
Low weight better ** Buyers' opinion	-8% -4%	7% 10%	4% 20%	6% 11%
Fat infiltration desirable Buyers' opinion	24% 16%	25% 14%	44% 26%	44% 22%
Higher price possible Selling price/kg Problems in selling	16% L.4440 28%	39% L.4-320 45%	35% L.4470 39%	44% L.4230 67%

* This index is obtained by subtracting the percentage of farmers and buyers preferring another breed from the percentage of those prefering the Chianina, for quality reasons. This procedure serves to summarize the differences between the groups.

** Percentage of farmers opting for a final weight of more than 650 kg minus percentage of farmers opting for a lower final weight.

As for the positive role of the Chianina breed in determining beef quality, farmers are again rather univocal (Table 4). This might again seem contradictory, but in fact all farmer families now situated in styles 2, 3 or 4, once produced and consumed Chianina meat themselves: they know what they are talking about. To quote an interviewed farmer: 'On the slice, one notes the quality of Chianina: it remains more *rosa* and doesn't get dark like the other breeds. The taste is better and it has less fat. Above all it is the good conservability that matters. The *Charolaise* may yield more beefsteaks, but it's fatter and shrinks when cooking, because it contains water.'

Significant differences also emerge when the opinions, as attributed by farmers to their buyers, are analyzed that relate to a particular differentiation within butchers' strategies: many butchers who get their supplies from farms of style 1 and 4 are explicitly looking for Chianina cattle, because of its excellent meat quality. The clients of the large farms, instead, are looking for well-formed, high-yielding animals (yield in terms of percentage meat on total weight), preferably under 600 kg and younger than sixteen months. This is in order to get tender meat of a bright colour. A high slaughter rate and a limited growth period imply a 'pushy' kind of feeding and the use of French breeds, and these buyers seem to accept this necessary evil.

For lack of space we leave out, at this point, the precise results of the farmers opinions on the organoleptic aspects of beef such as tenderness, colour, taste and leanness. We limit ourselves here to pointing out that the opinions correspond rather well with the styles of farming and with the kind of clients each style attracts, even if there are some inconsistencies in the material.[14]

There are important differences in economic and marketing strategies between the interviewed farmers. These differences coincide, to a large degree, with farm characteristics and quality considerations. Big farmers evidently aim at economies of scale. Their gain lies in the sheer number of animals kept, even when they perform worse technically (less growth, lower feed conversion). Having more animals than land, they intensify fodder production by increasing inputs and they buy industrial compound feed. They try to reduce the growth cycle in order to accelerate the turnover of capital. The industrial style, number 2, is the most conspicuous exponent of this strategy. Marketing is directed at the delivery of a uniform product, attractive enough for the bulk of consumers. Their crucial problem is to get rid of the animals in time to start up a new cycle and avoid low prices (when the animals grow fat and old). This is precisely where things went wrong in the last two years (1990, 1991). Since the large, industrial breeders are stuck in a production structure with high constant costs, they cannot permit themselves to end up with unsold animals. Small farmers, on the other hand, often explicitly do not take the risk of going big, of being forced to depreciate on heavy loans and buy feed and cattle. Table 3 further shows that farmers who buy cattle for fattening (open cycle, feedlots), especially the industrial farmers, consider production costs too high at the moment. Breeders with a closed production cycle (style 1 and 3), vice versa, not only have less problems in this respect, but also more often see possibilities in lowering production costs even further. They apparently have more room for adjustment on the farm. One should also note the fact that these two styles are among the most self-sufficient in fodder, which corresponds again with their strategy to achieve 'autonomy'.

As to the selling price, we see that cattle farmers of the artisanal style (style 1) manage to get a 5 to 10 percent higher price (per weight unit) than farmers of the industrial style. This fact is mainly explained by the higher value of the Chianina cattle and the better quality of the feed they use. The surplus, however, is not enough to compensate for the higher production costs involved, since the Chianina demands better fodder quality and traditional fodders cost more. Table 4 shows that it is mainly the breeders with French cattle (style 4) who think they could get a better price than they actually do, who put up Chianina calves for sale. The large farmers will not do this because it goes against the internal logic of farm structure (pushing), and the small farmers will not do it because of the scarcity of such animals and the lower margin between costs and selling price. Regional prices closely follow national and international markets, determined by the overproduction of beef at EC level. In this situation of overproduction, manifest also in Umbria,[15] what matters is a *secure selling network*. Small farmers practising traditional feeding methods appear to be better off, because they have close relations with local butchers who are looking for quality. Large farmers are left to the mercy of wholesale dealers. This was shown clearly from the in-depth interviews and from the survey. Sixty-seven percent of industrial breeders admit to having problems in selling off their animals, whereas only 28 percent of the artisanal farmers say so.

At the end of 1991 the crisis in the beef sector deepened, and we noted that indeed it was the small breeders who were surviving. Bigger enterprises were closing down. As well as their stronger selling network, the very logic of the small family farm (giving their own labour, a flexible farm structure, off-farm activities, a high degree of auto-consumption, the availability of pensions) permits these small Umbrian breeders to carry on while waiting for better times. An interesting observation is the high incidence of direct selling to consumers among some breeders (style 4). Some are even opening butcher's shops on the farm. Others slaughter an animal every now and then and sell it to interested neighbours and friends. It goes without saying that this strategy is inconceivable for the large 'professional' farmers. Widespread auto-consumption in the countryside should also be mentioned in this regard. Both on-farm commercialization and auto-consumption are expanding. This is partly due to low market prices, but it also evidently relates to the growing awareness among consumers about the quality and origin of their food.

Some final remarks in this section will be dedicated to the question of certification of hallmarks. One of the institutional efforts to secure marketing of relatively expensive regional beef has been the establishment of quality hallmarks. The '5R' hallmark of the five Italian breeds is the best-known; in Umbria it promotes the Chianina. More recently *Carni Umbre di Qualità* (CU) was founded. It has a stronger regional position than the 5R, because it has a larger number of selling points, being essentially a hall-

mark to combat the poor image of beef. Both consortia, regrettably, are characterized by malfunctioning inspection at the production and distribution level. They make excessive use of slogans appealing to the merits of 'traditional farming' (5R) and the genuineness of regional produce (CU). As such they are mere marketing hallmarks instead of product guarantees; for example, no guarantees are given as to the feed used. People have thus little faith in these initiatives, and confidence is also lacking among the participants themselves. Let us cite two proponents: 'I am an associate of the 5R. I know that in my butcher's shop only Chianina beef is sold, unlike the other so-called 5R butcheries where they slaughter one bull a week but sell three. Better control is needed, because I hear what people around say: the hallmark is there but not the beef. Another informant: 'I don't understand anything about the Carni Umbre hallmark. The only thing I understand is that it brought me an extra client and that I signed a contract saying that the butcher would pay me 500 lire (10 percent) above the market-price.'

Many butchers see the hallmark as just an extra gesture towards their clients. For the conscious client, in fact, the personal *fiducia* (faith) in the single farmer or butcher and being able to trace the origin of the beef is what matters most. In Umbria there still exist a substantial number of breeders producing the typical Umbrian beef or at least offering a tasty and completely genuine product. Some consumers, mostly country people, find their way to them by buying directly from the farm. Others are awaiting the moment when these engaged producers will succeed in organizing themselves, prescribing strict and rigorous production procedures, as the farmers in north Italy did for the famous parmiggiano-reggiano cheese. Only then can they hope to realize prices which really correspond to their remarkable production efforts and sacrifices.

Circuits of Beef Transformation and Distribution: the Butchers

Butchers in Umbria play a key role in the definition of beef quality, since they keep in close contact with both producers and consumers. They manage 80 percent of all regional sales and the majority of them select their animals directly at nearby farms. Besides having the function of service hatch between supply and demand, butchers actively co-determine the definition of beef quality and add a lot to the final quality itself (through storage and transformation). We refer to the categories of butchers below as 'circuits', the same circuits as appear in Table 1. This is justified by the fact that the butchers could be distinguished accurately on the basis of where they got there beef, thus integrating the different categories of breeders.

A first analysis of the survey data (correlations, factor analysis) confirmed the hypothesis obtained from the in-depth interviews, namely that

butcher definitions of quality depend much on *where* they get their beef. These quality definitions correspond again to butcher's business organization strategies and to the approach of their client, as we will see below. The *size* of the farm where butchers buy turned out to be one of the criteria for the qualitative distinction between butchers. The preceding section showed how the factor 'scale of breeding' is correlated to the feeding system and thus to meat quality (small being superior). Butchers are very well aware of this. But not all meat is directly obtained from regional breeders. Butchers buy also from intermediaries, butchers' associations, and wholesale dealers (see Table 5). The last two also provide the so-called *carne da latte*, the white calf meat imported from the Netherlands and Denmark. This meat is sought after in Italy for its tenderness, although it has little taste and people have serious doubts about the way it is produced.[16] This leads us to the second relevant criterion: *anonymity* or, its antithesis, the *verifiability* of the distributed meat. Verifiability of origin is expected to guarantee genuineness, a major current concern of consumers of beef. Anonymity is considered highest (according to the butchers interviewed) by the wholesale dealer. Wholesale dealers tend to buy from very large farms in north Italy and abroad, though some meat also originates from small and large farms in Umbria. After the wholesale dealer are those sticking to the butcher's association and the intermediary; the last two cases still know more or less where the product comes from. The most verifiable meat is from butchers who buy directly from the farm, those buying from small local farmers doing best, because they demonstrated during the in-depth interviews the most profound knowledge of the production process. Thus butchers buying 60 percent or more of their turnover from a wholesale dealer (circuit 3) are to be found in the upper-right angle of Figure 2 and butchers taking 60 percent or more from large breeders (circuit 2) are located at lower-right. Finally, butchers who depend for 90 percent or more on small cattle farmers (circuit 1) are placed in the lower left corner.[17]

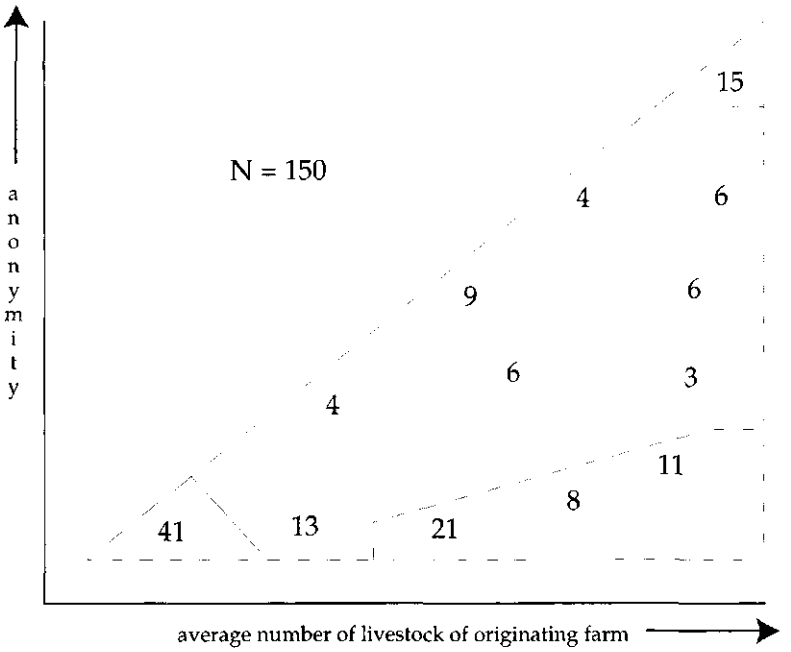
As we can see from Figure 2 and even better from Table 5 a lot of intermediary positions are occupied; 30 percent of the butchers interviewed do not obtain their beef from predominantly one type of supplier. *Grosso modo*, however, a certain concentration is to be observed at the angles; further analysis is based on these three groups. The high number of butchers operating in the artisanal circuit (group 1) (and in general the relative weight of the basis of the triangle) might surprise the reader and many an Umbrian alike. It highlights the strong regional-based character of the Umbrian beef market.

Table 5 Frequency Distribution of Butchers on the Basis of the Percentage of Beef Bought from the Various Types of Suppliers

Supplier	Code Subgroup	Frequency N=150
Buyers' association		
	0	2
Intermediary	4	4
	2 2	1
Wholeseale dealer	4 0	5
	2 2 0	1
Big meat-cattle farmer	4 0 0	15
(> 50 cattle for fattening)	2 2 0 0	1
Medium meat-cattle farmer	4 0 0 0	11
(10-50 cattle for fattening)	2 0 0 0 2	1
	2 0 0 2 0	1
	2 0 2 0 0	2
	2 2 0 0 0	1
	2 2 0 0 1	1
	3 0 1 0 0	1
Small meat-cattle farmer	4 0 0 0 0	14
(< 10 cattle for fattening)	1 0 0 0 0 3	1
	1 0 0 3 0 0	4
	1 0 3 0 0 0	3
	1 0 4 0 0 1	1
	1 1 0 2 0 0	1
	1 1 3 0 0 0	3
	1 3 0 0 0 0	2
	2 0 0 0 0 2	1
	2 0 0 2 0 0	6
	2 0 1 1 0 0	1
	2 0 2 0 0 0	5
	2 2 0 0 0 0	10
	3 0 0 0 0 1	1
	3 0 0 1 0 0	2
	3 0 1 0 0 0	3
	3 1 0 0 0 0	1
	4 0 0 0 0 0	41
	4 0 0 1 0 0	3

definition codes:
0 - buys nothing from this type of supplier
1 - buys between 5% and 35% of supplier
2 - buys between 40% and 60% of supplier
3 - buys between 65% and 85% of supplier
4 - buys between 90% and 100% of supplier

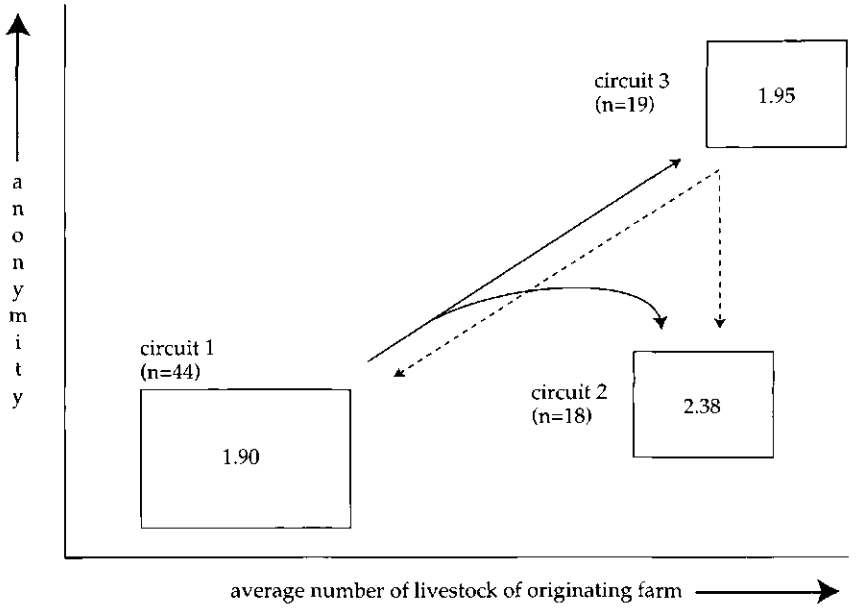
Figure 2 Plotted Frequencies of Butchers Grouped on the Basis of the Main Types of Suppliers and Arranged along the Dimensions 1) Size of the Farm of Origin and 2) Degree of Anonymity of the Meat Acquired



Some general data are presented in Figure 3, which is a schematization of Figure 2. For statistical reasons all three groups were somewhat enlarged compared to the original number of farms at the extremes. In order not to suggest a purely static image of the circuits, we have indicated the direction in which butchers' shops have developed in the last ten years (information from survey). The main direction, perhaps surprisingly, leads from circuit 1 towards 2, in other words from one 'extreme' to the other. These mainly involve small butchers' shops that have been eaten up by urban peripheries where consumers have become 'detached' from the country. They say they still admire the small breeder, but they now buy from wholesale dealers (Table 7). Butchers in circuit 2 have gained a quite stable position by offering more sophisticated products and by promoting 'quality' (exposing dubious hallmarks). They fear competition from supermarkets the least. Operating generally on a larger scale than their colleagues, they enjoy some scale advantages, for example in the conservation of their product (larger refrigerating cells, with more constant temperature and humidity, permitting longer conservation, i.e. greater flexibility). The arrows with dotted lines from circuit 3 downwards represent the

wave of butchers who, in the 1980s, turned away from wholesale dealers and large cattle farmers in north Italy (anonymous meat) and went back to local farmers, because of a growing concern among consumers about the presence of toxic residuals in imported beef (calf meat from abroad and adult meat from northern Italy). Indeed the use of chemical growth-enhancers seems less practised in Umbria, especially on small farms, where it is more easy for butchers to check. Official surveillance is not very efficient. Butchers in 'artisanal' circuit 1 can be found everywhere in Umbria, but most frequently in the villages. Butchers of 'industrial' circuit 2 are typical of the booming areas in the central plain of northern Umbria. Those who sell 'anonymous' meat mostly have their shops in the large towns.

Figure 3 Schematic Presentation of the Three Circuits of Beef Distribution; Average Scores on the Variable 'Number of Persons Employed'; Dotted Arrows Indicate Recent Evolutions

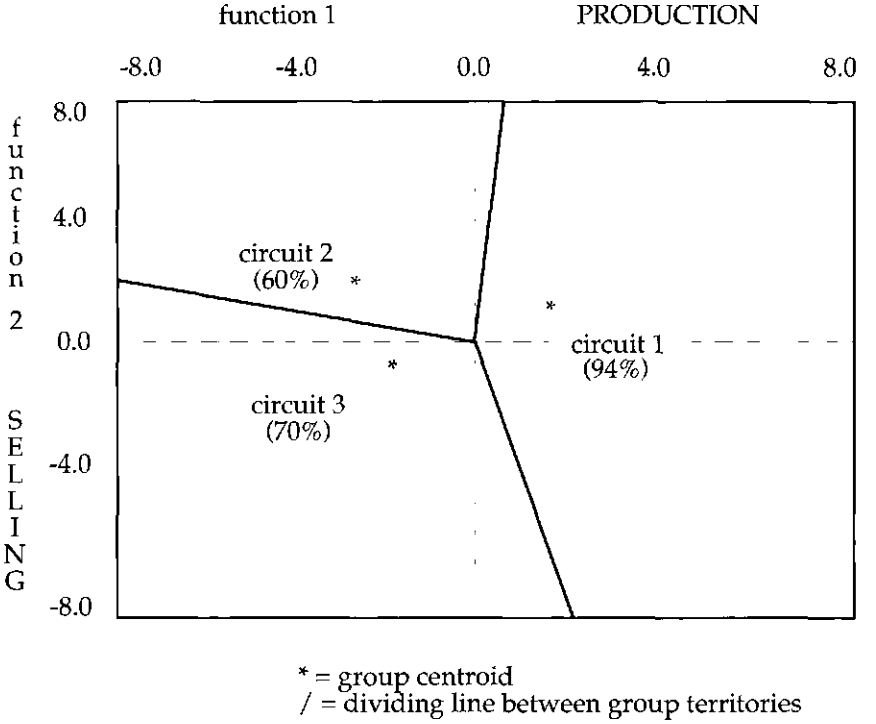


Before discussing the average scores of the above three circuits on the other items of the interviews, a more synthesized result is presented (Figure 4). This concerns a canonical discriminant analysis which provides us with two functions that are linear combinations of some preselected variables (Table 6).

Table 6 Intergroup Correlations Between the Selected Variables and the Canonical Discriminant Functions

	F1	F2
importance of feed used	.62	.26
small farmers better	.40	.28
Chianina has future	.35	.08
increase sale-ready products	.18	.57
number of persons employed	.04	.53
exposing hallmark	.17	.36
willingness to pay for quality	-.02	.35
externality of information resources	.12	.30

Figure 4 'Territorial Map', Plotting the Three Circuits on Two Functions Obtained by Discriminant Analysis; Percentages in Brackets Indicate Adequacy of Grouping by Functions



The functions are computed in such a way that the exponents of the three circuits acquire positions as different as possible on the two factors. Strikingly the first function 'brings together' all the variables to do with the way in which farmers produce, whilst the second one collects the variables concerning the way in which butchers organize their business. This organization refers to the display of a hallmark, good presentation and in particular to the degree of transformation of beef into a variety of ready products (value-adding). Transformation is the butcher's answer to the growing demand for luxury meat (beef etc.) and easily prepared products. Figure 4 shows that butchers who buy mainly from large breeders (circuit 2) pay most attention to the 'selling' factor and that those who buy exclusively from small breeders (circuit 1) concentrate on production characteristics, especially on feed and breed. The third circuit, dominated by the wholesale dealers, cares neither for the production process nor for value-adding; it sells, as it were, whatever is the easiest and cheapest product.

To conclude, we will comment on the average scores of the different circuits on items such as tenderness, colour, taste and fat content (see Table 7). Every butcher interviewed was asked to choose from a large list of items the three items that best defined beef quality. They were also asked to do the same for the criteria they thought their clients would use. The items selected here are the ones mentioned most frequently. The results may sometimes seem inconsistent, but this is mainly due to the fact that the personal opinion of the butcher, the business strategy he follows and the (supposed) opinion of his/her clients are three different things, and they do not always coincide.

The interpretation of the answers required a good background knowledge of the different types of butchers, especially of their complex quality definitions. The preliminary in-depth interviews were helpful here, for example, in understanding the link between fat content and taste/tenderness that some butchers make. Because we are dealing here with opinions, the relative differences between the percentages of the various circuits are more important than their absolute values. A second point of statistical concern is the significance of the differences. Without going into the calculation procedure used here, we indicate that a difference of 12 percent or greater can be considered significant.

Table 7, then, shows a clear preference for tender meat in the second circuit, not so much among the butchers themselves as among their clients. The same kind of discrepancy is observed in the farmers survey: here butchers, in the role of clients, were considered to be more interested in tenderness than the farmers themselves. This is, of course, a quite logical outcome when opposing personal opinions to the assumed opinions of clients, since tenderness has a negative connotation, as it is associated with imported meat with little taste.

Table 7 Average Scores of the Main Circuits on Some Items

Type of circuit	ARTISANAL	INDUSTRIAL	ANONYMOUS
Circuit number	1	2	3
Number of butchers	44	21	23
Type of supplier	small farm in Umbria	big farm in Umbria	wholesale dealer
Small farms better	83%	46%	67%
Feed criteria decisive in choice of supplier	93%	78%	37%
Believe in future Chianina breed	76%	55%	33%
Tenderness factor meat quality Opinion of clients	23% 53%	39% 100%	42% 47%
Brightness factor meat quality Opinion of clients	41% 34%	56% 33%	68% 58%
Tastiness factor meat quality Opinion of clients	41% 23%	17% 39%	37% 16%
Leanness factor meat quality Opinion of clients	28% 28%	22% 16%	10% 47%
Willingness to pay for extra quality (in lire/kg) Willingness clients (in lire/kg)	530 510	440 490	290 430
Increase sales ready products Competition from supermarket Externality index of professional info	45% 53% 1.83	61% 36% 2.27	37% 69% 2.42

Colour predominates in circuit 3, the anonymous meat circuit. Clients in this circuit are said to 'buy with the eyes'. In the circuit of modern butchers (2) clients buy 'with their mouth'. In the artisanal circuit the focus of the 'actors' (butchers and consumers alike) is directed essentially to the production-side (feed and breed). So the scores on the organoleptic characteristics of meat reveal rather those qualities that leave much to be desired. This explains for instance the high percentage of clients asking for tender meat, who complain about toughness (as compared to the butchers). More mature meat will surely be tougher, but they would not buy another kind of meat for that reason!

The fat content of beef, finally, appears to have the least negative connotation in the second circuit. This is to be explained by the effect fat has on taste and tenderness, as both butcher and farmer explained to us. In fact, without fat, beef in this circuit would have little taste, especially

since it is not mature. Incidentally, in forcing production with compound feed and silomaize it would be hard to completely avoid fat infiltration. The wholesale dealer circuit (3), is explicitly looking for leanness, which is a clear characteristic of the imported *carne da latte* (calf-meat). Fat is associated with old, tough meat and with cholesterol. This holds true at least for the consumers. The butchers find themselves in trouble (expressed during interviews) coping with the consequent dryness and toughness of the meat; clients 'do not understand that leanness and tenderness can't go together'. In the artisanal circuit (1) the fat content follows from the process of production itself and is consequently seen as a natural phenomenon. Beyond that the meat is relatively lean since these farmers often keep Chianina cattle, which has the valuable characteristic of retarded maturing. This means that it remains less fat, even after two years, so it can be given 'its time to grow'.

A last point to be discussed concerns the quality/price relationship. We already mentioned the limited extent to which better beef (unanimously recognized) is paid a better price. Chianina meat makes on average 5-10 percent more for a farmer, but on the butcher's counter it costs the same as all other adult beef. Butchers tend to stick to market prices as far as buying is concerned, and selling prices are set by agreement with local colleagues. As a consequence, butchers try to maintain stable relations with their clients by offering a good product, instead of competing on the price. This, however, does not exclude price differences. In the countryside meat prices were registered as much lower than in town. This is a remarkable paradox, because the meat commercialized in the countryside (circuit 1: small farms, traditional feed, Chianina breed) is unanimously considered of better quality and incurs higher production costs.

From the consumer survey we obtained a similar result. In the urban areas a kind of inflation seems to take place, caused by high-income consumers in combination with a lack of knowledge of beef production and origin. The data from the butchers' survey show that in the artisanal circuit there is a willingness to pay (still) more for a (still) better quality, unlike circuit 3 butchers, who buy from wholesale dealers. The unwillingness to pay extra corresponds with that of their butchers.

In synthesis, the different attitudes towards price and quality nevertheless offer some opportunity for a bigger price margin on the basis of intrinsic meat quality. The significant return of Umbrian butchers back to local cattle-farmers in the last decennium emerges as a significant detail. Apparently consumers were prepared to pay the higher price that resulted once they were informed better about the production process. Crucial of course, is whether producers and butchers manage to offer a typical product of which production, conservation and transformation procedures are strictly prescribed and preferably controlled (albeit indirectly) by consumers. Especially the question of feed quality will become increasingly important. High-quality circuits will necessarily function on a limited

scale, characterized by as close a contact as possible between producer and consumer. We have no doubts about the market success such a product would have. The results of the consumer survey also justify such optimism.

The End of the Chain: Consumers

The consumer survey comprised 148 Umbrian consumers (see Table 8). The study was a type of market research; the question of quality was not discussed at length. As most of the contacts were made in the street, it was not possible to identify precisely certain types of consumers as we did for the farmers and butchers. But some subdivisions could be made; that between country and townsfolk being especially interesting. Some general results are presented first.

The majority of consumers in Umbria buy so-called *tagli pregiati*, i.e. the prime cuts of beef. They also prefer freshly cut to prepacked meat because it is thought to be tastier and more genuine. More than 90 percent of those interviewed said that they bought at the butcher's shop. Only a minority bought beef from the supermarket. This confirms the official estimate of 80 percent of sales within Umbria attributed to butchers. Eighty four percent of the population consumed beef more than once a week. Non-consumers hardly existed. Consumption per head was stable at 24 kg a year, somewhat below the national average because of higher swine and poultry consumption. The two main defects registered were loss of water during cooking and toughness. Technically the first can be due to excessive use of silomaize or compound industrial feed or to the use of chemical growth-enhancers; the second defect may result from age, bad health or lack of fat. Conservation and preparation can also have an important effect on tenderness, but we assume these items to be dealt with similarly by the various butchers and consumers. The most important quality concern expressed was that the meat be natural or genuine; people want nutritious and digestive meat which can be given safely to children. 'Taste' also appears to be very important. The overwhelming majority of consumers claimed that 'sound' beef *cannot* be secured from big farms. This corresponds exactly with the positive attitude of many butchers in Umbria towards small farms. Consumers were not very knowledgeable about the characteristics of meat; many of them were unaware that a higher fat content makes meat more tender and tasty, though people from the countryside and the elderly were an exception to this. Their lack of knowledge is also evident in the wide range of positive characteristics attributed to what the questionnaire called 'guaranteed beef': besides being nutritive, conservable and coming from small farms, such meat was also said to be tender, tasty, fit for slimming, contained little water etc. One thing consumers unanimously agreed on was that guaranteed beef was not for

those who want to save money. When asked why it has to cost more, people pointed first to the higher production costs and then to the costs of the inspection system and the fact that 'quality just costs'. All answers were chosen from a prepared list.

Table 8 Distribution of the Consumer Sample (N=148) per Community, per Age Category and per Occupational Activity

COMMUNITY TYPE	N				%
Urban	83				56
Semi-urban	41				28
Rural	23				16
Total	147				100
	ACTIVITY				
AGE CATEGORY	outside home		domestic		TOTAL
	N	%	N	%	%
20-35 years	25	17	25	17	34
36-50 years	25	17	17	11	28
31-69 years	25	17	31	21	38
Total	75	51	73	49	100
OCCUPATION HEAD OF FAMILY	N				%
Professional	22				15
Trade	27				18
Employee	36				24
Manual labourer	25				17
Farmer					
Shop assistant					
Housekeeping	2				1
Retired	18				12
Other	18				12
Total	148				100

Seventy-one percent of the consumers said they were prepared to buy qualitatively guaranteed beef and to spend more money on it on average L.2,500 extra per kg (that is 15 percent beyond the actual price levels). Eleven percent of all Umbrian consumers buy beef guaranteed by an official hallmark. Some of them also frequent other selling points, so the partial market will involve an estimated 5 percent. The turnover of beef for auto-consumption and direct selling is difficult to assess, but according to

sector experts it amounts to another 5 percent. In Umbria auto-consumption and direct selling seems to counterbalance the penetration of a commercial 'quality market' of the kind we find in Northern Europe.

Hallmark displaying butchers in the cities make clients pay fully the extra L.2,500, if not L.5,000. Breeders who sell directly, on the other hand, might even underscore the official market price; for them it is a lucrative business anyway, since they do not have to pay Value Added Tax and have no middleman to pay. In this way they force the butchers into paying prices at dumping level, even for excellent meat. There are noticeable differences between urban and rural areas. Urban consumers are more prepared to pay extra for guaranteed beef, even though town prices are already about 10 percent above those in the villages, where meat appears to be of superior quality. Townsmen complain about 'loss of water' during preparation of the meat (an indication of forced fattening), whereas countrymen complain about toughness (a consequence of longer maturing and lower fat infiltration). Townsmen also show concern about the use of toxic substances and would like to see a more natural way of cattle-rearing. Rural consumers recommend maintaining the quality they already have. A third indication for a better quality of beef in the rural areas can be assumed from the fact that discerning village butchers buy from small farmers, whereas town butchers buy mainly from wholesale dealers. Customers who want quality would prefer to buy directly from producers since they show no faith in the hallmarks displayed and the trend is for consumers to do this. It is now possible to do this as more and more producers are selling direct.

Table 9 Shortcomings of Beef Bought; Percentage of Consumers per Type of Community

Residence	urban	semi-urban	rural	average
not as good as once was	5	0	0	3
no good taste	11	0	4	7
costs too much	1	0	13	3
is often not genuine	7	2	8	6
contains hormones	2	0	4	2
animals are kept in a natural way	2	0	4	2
loss of water in cooking	77	34	33	58
tough	53	59	67	57
of poor quality	4	2	4	3
too bright in colour	1	0	13	3
too dark in colour	1	5	8	3

The paradox of a higher quality related to a yet lower price shows at least one thing clearly: that is quite possible, within Umbria, to obtain a natural piece of beef at a reasonable price. But one has to be prepared to search for it and inform oneself on the matter of beef production. The most

logical thing for consumers to do would be to enter into direct contact with producers, because hallmarks do not succeed in convincing people. In Umbria it is not difficult to find examples of farmers who open butchers' shops, or who slaughter an animal every now and then to distribute among family members and interested friends and neighbours. In fact, more and more consumers are finding their way to the place of production.

Table 10 Consumers' Advise to Beef Producers: Percentages per Type of Community

residence	urban	semi-urban	rural	average
be honest	8	0	4	5
make it better	12	7	4	10
make it more genuine	25	20	17	22
inform about production	4	2	8	4
do not use hormones	36	32	17	32
make it less tough	4	2	21	6
maintain quality	7	2	42	12
produce more naturally	55	46	58	53

The Endogenous Development Potential

Given the persistent trend towards high-quality food, there is scope for development for Umbrian cattle-breeders, mainly for the relatively small farmers who have the 'breed' and who produce the required 'feed' to match new consumer trends. Increased outlets for the meat produced, as well as an increase in price, would contribute not only to the 'survival' of these farms whose families are involved in may other activities and who have relative autonomy *vis-à-vis* the markets, but would lead also to the revitalization of their styles of farming, and make them attractive for the younger generation. Such a revitalization is important since it is closely associated with other concerns, such as the conservation of typical landscapes, natural resources and a reduction of pollution. It is through a higher price for high-quality produce that the work involved in such concerns are indirectly, but nonetheless substantively remunerated through the market. This provides perhaps a better alternative to the plea for direct payments to farmers for 'landscape preservation'.

Evidently, the reproduction over time of this Chianina-farming system and the related artisanal circuit is, in no way, guaranteed. There are several threats, amongst them the competing industrial chain, which is increasingly appropriating the image of 'high quality produce'. The main problem for any strengthening of the existing artisanal circuit (and therefore strengthening Chianina production and the potential it entails) resides

in the required co-ordination of actions embracing production, transformation, distribution and consumption (as exemplified by the actions of certain consortia). The specific co-ordination and articulation existing in the different chains described earlier, could be taken as a central design principle for strengthening the structures that can link production to consumption on terms more favourable for both sides of the equation. If such action is lacking or fails, Chianina-breeders have still one ultimate 'line of defence' at their disposal, that is the on-farm commercialization of their products. Needless to say, such an alternative also requires socially defined (and possibly also institutionally controlled) rules for production, transformation and distribution. Our research programme will focus, in the years to come, especially on these questions and problems.

Conclusions and Recommendations

A central conclusion of the research is that the organoleptic characteristics of beef and the specific requirements of consumers are effectively guaranteed by the production process and distribution channels. Another aspect usually ignored, if not denied by 'opinion makers', is that in a market where demand for quality is crystallizing, the so-called 'artisanal circuit' is a promising option.

There exists an enormous variety in modes of production, distribution and consumption of beef in Umbria. Different socio-economic circuits can be distinguished, characterized by specific relations between farmers, butchers and consumers and by specific notions of quality. One circuit that emerged from the research is the artisanal circuit. It is based on numerous small and medium-sized beef farms with a closed reproduction cycle, keeping the local Chianina breed and, last but not least, using traditional fodder produced on the farm. The beef produced on these farms finds its way directly to local butchers. Small farms (one to ten animals) constitute the bulk of the total (40 percent) and provide a substantial part (30 percent) of the beef commercialized by Umbrian butchers.

Artisanal farmers, against all expectations, turned out to be superior at the technical level (feed conversion factor etc.), whereas farms of the industrial type make profit through the sheer numbers of livestock. Related to numbers is an intensification of land use and a higher use of chemical inputs. In fact, large farms tend to economize on feed quality. Silomaize and industrial compound feed are used to force growth under condition of minimal care for the cattle.

Umbrian consumers almost unanimously consider beef from small farms to be produced more naturally and to be of high quality, even those who do not consume it. There is a lot of confusion on what quality criteria to apply, and how to ensure they are applied. Townsmen are sceptical about finding genuine beef. There is a growing interest from consumers

for higher quality meat stimulated by negative experiences with respect to the so-called 'industrialized circuit' and with imported meat. The main defect, loss of water, points to forced fattening. The main concern is for genuineness.

So far the efforts of cattle farmers and butchers to offer a guaranteed product have not succeeded; the existing hallmarks in Umbria create more confusion than quality. Official aspects and image building receive more attention than accurate information about the production process, which is never specifically prescribed or taken as the starting point for information campaigns. The new consumer's interest for healthy meat of local origin (*carne nostrale*) could revitalize sizeable rural areas. The major part of the 'quality' market has been cornered by farms of the industrial type who just create the required image, not the meat. This will ultimately disappoint consumers and do damage to an emerging market. Encouragement of this emerging market could help to keep the 'green heart' of Umbria and to maintain employment and incomes in these areas. The industrial type of beef farming is a risky business and is at present in crisis because of negative market tendencies. It thus constitutes an unstable base for the regional economy. In addition, it has a negative impact on environment and landscape.

With Umbria's strong tourist attractions, products such as Chianina beef, and the pureness of its nature and landscape is an economically valuable long-term investment. Although the (small) artisanal farmers find themselves in a precarious income position at the moment, their earning capacity can be strengthened in several ways: They can reduce the distance to consumers by direct selling, thus realizing higher value-added; the large differences in income among artisanal farmers, which implies that with some adjustments (augmenting scale, augmenting the fertility of cows, diminishing labour input), income could be improved; within the artisanal circuit there exists – all along the chain – relatively good prospects for augmenting the price of the final product.

At the level of research centres, of agricultural extension and planning, a certain fatalism exists with regard to the artisanal circuit. The decline of production in this circuit is taken for granted or even thought desirable. The danger of a self-fulfilling prophecy is evident. Its strong points and its internal logic are not paid due attention. Many of the very small beef-producing farms will fold, no matter what, but on the other hand this could provide more opportunity for 'industrializing' farms to return to traditional feeding and to the local quality breed. We noticed an almost total absence of research on the relationship between type of feed, the system for keeping cattle, and type of breed, and the organoleptic characteristics of beef. More research is needed on the precise impact of various types of feed (barley, corn, beans, silomaize, compound feed etc.) on meat quality. Farmers and butchers leave no doubt about the relevance of this impact.

In the light of consumer ignorance on the impact of the production process on the quality of beef and on the merits of Chianina meat, an information campaign is needed, preferably managed by the (neutral) regional administration for rural development. In combination with this a regional law is needed, obliging butchers to inform consumers about the precise origin of their meat. The name of the farm and production characteristics, especially feed, breed and stabling should be specified.

The most far-reaching recommendation concerns the creation of a consortium for the production, transformation and distribution of beef produced in an 'artisanal' way. The consortium must seek rigorous control of fodder production (no herbicides or pesticides), on the types of feed allowed (cereals, grass, hey, corn, fodder beans), on the allowed breeds (Chianina and its F1 interbreeds), on slaughtering, conservation (minimum period to cool and harden) and on presentation (information to clients). The control of production will automatically stimulate production in the hilly and mountainous areas where for geographical reasons 'natural' cropping is feasible. The present regional policy aimed at concentration and uniformity of slaughter, must make way for local, specialized abattoirs. Associated butchers must limit their acquisition to a few fixed local farmers.

Consortium activities should start on a small scale so as not to make the same failure as its predecessors, with dependence on government help limited to initial assistance and to inspection of the associated farms, abattoirs and butchers' shops. The actual inspection of genuineness should be left to a consumer panel aided by private or university laboratories. Negotiations with the existing consortia, in particular the 5R, will be necessary to investigate the possibilities of integration.

The ultimate condition for the development of a market for high quality beef concerns agricultural policy, in particular at the level of the European Community. In our view, present price-oriented measures, based on the fiction of a free market, have to make way for a contingency approach. Only under the circumstances of fixed production quotas will it become profitable for farmers to point to the quality and particularity of their produce (price increase). A positive side-effect of such a policy will be a lower input of chemicals and energy (cost reduction). Both effects favour precisely those styles of farming which according to present standards appear as invalid. It will mean a rehabilitation of the endogenous knowledge of farming still widely diffused in Umbria. In the end the region can only benefit from such a development, both economically and culturally.

Notes

1 High-quality of course is a subjective term. Here it refers to those food products generally considered by the local population to be high-quality or typical.

2 The level of food self-sufficiency among the rural population is still very high. This guarantees the maintainance of food quality. Moreover, people in Umbria cherish their typical local products, which gain ever wider reputation. Examples are plenty: Castelluccio lentils, Colfiorito potatoes, Spoleto olive oil, Trevi celery, the white truffels of Gubbio, Bettona peas, Monteleone di Spoleto farro, the Sagrantino wine of Montefalco, etc.

3 Benvenuti uses the concept of TATE, Technological and Administrative Task Environment, to analyze the effects of external factors on agriculture and the consequent reactions of farmers to these limitations, and to the externalization of certain production processes and decisions.

4 We were assisted in the surveys by a research bureau managed by former students of the agricultural faculty of the Università degli Studi di Perugia, one of the few bureaus with the required experience in the field.

5 For the in-depth interviews with butchers, only those with a strong commitment to quality were sought, most of them adhering to a hallmark. This was done in order to guarantee a substantial discussion on the theme, not to obtain a representative picture of the average Umbrian butcher. Additional information on the commercialization of beef was gathered from informal discussions with regional wholesale dealers and from some sector experts. The addresses of the butchers selected for the representative 150 sample were obtained with the help of the regional Camera di Commercio. The thirty farmers participating in the in-depth interviews were contacted through agricultural extension agents of the Coldiretti (farmers union) and from the names provided by interviewed butchers. Here the main criteria for the selection of farmers was to cover as great as possible a range of different types of beef-cattle farmers. The addresses for the representative 150 sample were provided by the two provincial cattle farmer associations (APA: Associazione Provinciale Allevatori) and by the Regional Administration for Agricultural Development (ESAU: Ente di Sviluppo Agricolo Umbro). The stratified sample was based on the registered requests for the most common subsidies, being the most reliable and exhaustive source offering information on farm size, the reproduction cycle and on the breeds kept (i.e the stratification criteria).

6 The Coop supermarket chain acquires a proportion of its adult beef from cooperative stables in the region for political reasons.

7 The quota for the various categories were calculated using data from the general population census of 1981 (ISTAT 1982).

8 In the analysis of the 'styles of beef-cattle farming' in Umbria, for example, we distinguished four instead of two categories. As to the butchers, we can mention the existence of a small sub-category of about ten butchers who acquire all their beef from those small farmers typical of the first circuit, but who at the same time point to labour-intensive transformation of the meat into ready products, and for colpo d'occhio (good looks). They often also adhere to an official quality certification. For this shop-orientedness they would fall into the second circuit. On the consumer side the point is quite evident: people

sometimes buy beef at the supermarket along with their other shopping, but otherwise go to the local butcher.

9 Modern feeding is defined as the use of silomaize and industrial compound feed, whereas traditional feeding is defined as the exclusive use of lucerne, grass, barley, wheat, oats, corn, fodder beans, soya and mineral salts.

10 Farmer are often referred to as male; a small number of farms are managed by women. This should not obscure the fact that farmers' wives often do a substantial part of farm work and have their vote on deciding the organization of the farm, though they seldom manage external contacts.

11 In our view, farming is not the inevitable outcome of a set of prevailing geographical, political and economic circumstances. There is room for manoeuvre; that is, farmer choices shape different forms of farming, sometimes in unexpected ways.

12 The more so since Umbrian farmers are very aware of the indicated differences and quite often 'classify' the neighbouring farms in terms more or less congruent with the dimensions expressed in Figure 1.

13 Since the number in the case of style 1 and 3 includes calves for fattening as well as cows, their meat-producing capacity is much lower than that of farms of style 2 or 4 with the same number of animals.

14 These 'inconsistencies' are in some measure due to the fact that opinions are always subject to many intricate considerations on the part of those interviewed, in deciding what answer to give. They are also due to the phenomenon of so-called 'implicit reasoning': some farmers may just not mention certain desirable quality aspects, such as taste and conservability, because for them they are implied in the production process or in the breed and are thus taken for granted. Farmers may mention instead those characteristics that leave much to be desired. To give just one example: large farmers (style 2 and 3) often mentioned 'fat infiltration' and 'good taste' as important quality parameters. A certain group of interviewed farmers and butchers showed themselves very aware of the fact that fat augments the (perceived) tastiness of food and that, at the same time, the consumer does not want visible fat.

15 Breeder's small and large farmers alike put extra animals up for sale in 1988 and 1989, when prices were good.

16 In the Netherlands veal is produced with the use of powdered milk. The calves are kept in small boxes where they cannot move, increasing their daily weight. Scandals about the use of clenbuterol, beta-blockers and anti-biotics regularly occur.

17 Small breeders are defined as those with fewer than ten animals, large breeders as those with fifty or more.