

## ***7 The perception of risks and quality by Mediterranean consumers: elements of debate on the case of Morocco***

One of the effects of globalisation today is the fact that the slightest food problem is transmitted instantly throughout the world by the media. International food crises such as ESB, dioxin, or bird flu but also major cases of food poisoning such as the mortadella and fish incidents in Morocco now are certain to have an impact on consumer confidence in the products offered by the food production system. Consumers' perception of foodstuffs is seriously affected. The question thus arises of whether consumers in third world countries have an accurate perception of risks based on the real and objective attributes of the various products or whether, on the other hand, they are influenced by incomplete information which has not been checked and which comes from foreign media or is fuelled by rumour. A number of real risks go unnoticed due to the asymmetrical information typical of the markets in developing countries. The "consumerist" culture is underdeveloped and does not provide a basis for verifying the information and rumours which circulate from various sources. Other real risks can be grasped because there is a high level of consumer awareness (in the case of foreigners residing in Morocco or highly educated Moroccans) or because consumers have had direct experience of the risks involved (in the case of food poisoning, for instance). In both cases consumers face risks which they cannot identify, and they will therefore seek reassurance in the form of quality marks which are designed to boost consumer confidence and provide the desired security, since they are subject to stringent and reputable certification procedures (Caswell et Modjuska, 1996). Foodstuff qualification systems are thus reportedly sought and often preferred to trademarks or brand names, since they provide credible information and reduce the information asymmetries between producers and consumers.

The purpose of the present section is to cast light on a socio-economic issue which is one of the questions least examined in market research in developing countries: product quality as seen by consumers.

In standard economic theory it is presumed that consumers make their choices on the basis of quality in particular, but attention has never been devoted to what consumers actually perceive as quality, i.e. the quality that determines their choices rather than the quality determined by producers and industrialists. In their guidelines, the World Bank and other institutions lay the main emphasis on measures to improve quality for export and worry little about the quality of products consumed locally in developing countries.

The question that arises thus not only concerns how consumers perceive quality and what the health risks actually are, but also the national monitoring system and the new technologies used by the AFIs.

### **Our objectives are thus:**

- to highlight the issues at stake in foodstuff quality and safety in developing countries by analysing quality on both external and domestic markets on the one hand and presenting the current institutional organisation of quality in Morocco on the other;
- to determine how Moroccan consumers perceive foodstuff quality and to identify the main criteria on which they base their opinions as well as the health risks inherent in certain products, the aim being to evaluate the level of consumer awareness of the actual quality of foodstuffs in Morocco;
- to assess how tourists perceive the quality of Moroccan foodstuffs and to analyse their purchasing patterns;
- to compare the quality assessment criteria – of Moroccan consumers and experts, of Moroccan consumers and tourists, and of Moroccan consumers and French consumers (CREDOC survey, 1999);
- to compare how toxicological risks are perceived by Moroccans with the actual data on food poisoning incidents;
- to evaluate the importance of the toxicological risk factor in the explanation of the demand for quality marks on certain products.

### **7.1 - The challenges of quality and risks in developing countries**

Defining foodstuff quality and safety is a universal imperative. What is dangerous for the European citizen is also dangerous for any other citizen throughout the world. It is different from other quality aspects such as organoleptic quality, which is more a question of cultural reference or of learning than of objective criteria.

***In order to define the concept of health risk we shall take as a basis the definition proposed by the Regulation of the European Parliament establishing the European Food Safety Authority and laying down the procedures concerning foodstuff safety.***

**Food shall be deemed to be unsafe if it is considered to be:**

- a) injurious to health;
- b) unfit for human consumption.

**In determining whether any food is unsafe, regard shall be had:**

- a) to the normal conditions of use of the food by the consumer and at each stage of production, processing and distribution, and
- b) to the information provided to the consumer, including information on the label, or other information generally available to the consumer concerning the avoidance of specific adverse health effects from a particular food or category of foods.

**In determining whether any food is injurious to health, regard shall be had:**

- a) not only to the probable immediate and/or short-term and/or long-term effects of that food on the health of a person consuming it, but also on subsequent generations;
- b) to the probable cumulative toxic effects;
- c) to the particular health sensitivities of a specific category of consumers where the food is intended for that category of consumers.

*Article 14: Food safety requirements, Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002.*

The quality challenge is of a dual nature. It is international in that certain products of developing countries are exported to the demanding markets of rich countries with the risk that a product will be rejected if it does not meet the required health standards. And it is national, since certain foodstuffs whose export is refused due to a health hazard are sold on domestic markets. This is possible due to the absence of effective quality control and the very low level of consumer awareness.

### **7.1.1 - Quality and safety of exported foodstuffs**

One way of assessing the quality and safety of Moroccan products on export markets is to analyse the cases reported by the European RASFF (rapid alert signal for food and feed).

The rapid alert system set up by the European Commission informs the competent authorities in one of the member states of the existence of a food product entailing a serious risk for consumer health hazard. A distinction is made in this system between alert notification and information notification. The former means that the product presenting a contamination risk is already on the market of one of the member states and that it has been, or is in the process of being, withdrawn. And an information notification is issued for products for which a contamination hazard has been identified before it enters the European market and all measures have been taken to ensure that it is rejected. The following table lists the various types of contaminated products that have been identified over the last four years by the

rapid alert system set up by the Directorate General for Health and Consumer Protection of the European Commission. Products coming from Asia pose the most problems; they are followed by products from Europe, Latin America, Africa, North Africa, North America and, finally, Oceania (Figure 1).

**Table 7.1 – Types of contamination and incriminated products (all origins) identified by the rapid alert system (RASFF) of the DG Health and Consumer Protection of the European Commission (2002 to 2005)**

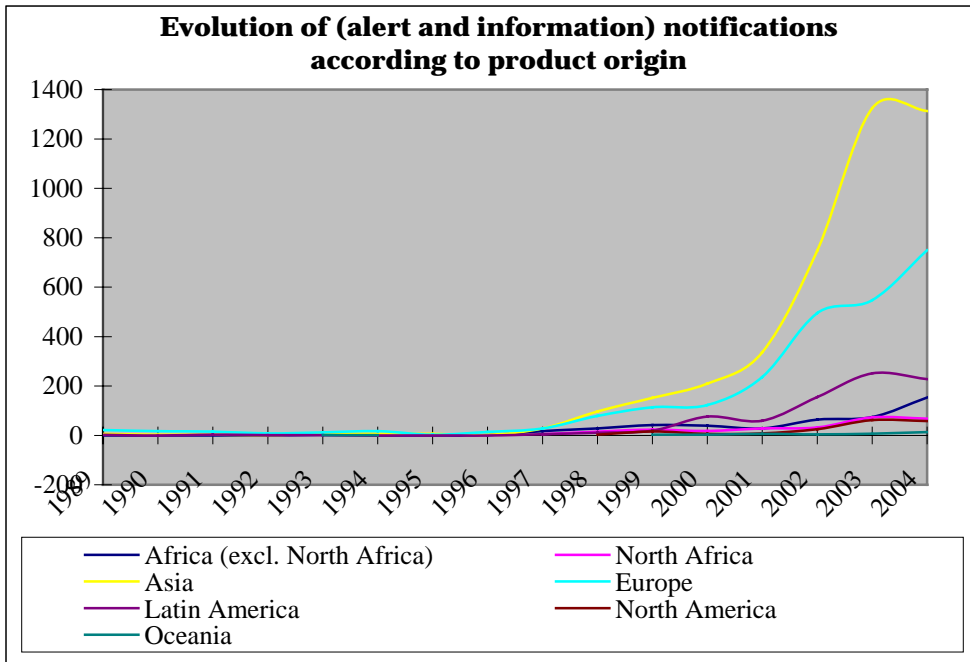
<b>Types of poisoning</b>	<b>Incriminated products</b>
Aflatoxins and mycotoxins <sup>1</sup>	nuts, nut products and snacks, fruit and vegetables, cereal products and bakery products
Microbiological contamination	poultrymeat and poultrymeat products, shell fish and seafood products, fish and fisheries products (other than shellfish and molluscs), milk and milk products
Residue of veterinary products	shellfish and seafood products, fish and fisheries products (other than shellfish and molluscs), confectioners' honey and royal jelly, eggs and egg products, milk products and milk, animal feed, meat products and meat (other than poultrymeat)
Heavy metals	fish and fisheries products (other than shellfish and molluscs), shellfish and seafood products
(Other) chemical contamination	fats and oils, herbs and spices, fruit and vegetables, fish and fisheries products (other than shellfish and molluscs), soups, stocks and sauces, cereal products and bakery products

Source : Annual Report on the Functioning of the RASFF, 2002, 2003, 2004, Rapid Alert System for Food and Feed (RASFF), European Commission, Directorate-General for Health & Consumer Protection.

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<sup>1</sup> Aflatoxin is a generic term denoting a group of toxins which are produced by two moulds, *Aspergillus flavus* and *Aspergillus parasiticus*. These moulds develop naturally and are present in several products that are used for human and animal consumption. Depending on the quantity present in the incriminated product, these toxins can be injurious to health as the cause of the development of certain cancerous tumours.

Figure 7.1



Source : based on the data published in the Annual Report on the Functioning of the RASFF, 2004, Rapid Alert System for Food and Feed.

When one examines the frequency with which products are called in question, Morocco was only concerned once in 2005 (according to the Weekly Reports already available) and 2003, and was not concerned at all in 2004. The contaminations were only of a microbiological nature (case of live bivalve molluscs). There is no comparison at all with certain Asian and Latin American countries.

It can thus be concluded that the efforts that have been made since the 1980s with a view to upgrading the export sectors in terms of foodstuff quality and safety have more or less borne fruit. This observation confirms certain analyses (Hamimaz et al, 2002) of the number and type of infringements detected by the Moroccan fraud authorities in the various types of agro-food sectors. The number of offences and the number of cases filed with the public prosecution department has decreased in the liberalised sectors (fisheries, pasta manufacture), which have to contend with high internal and external competition, compared to sectors which are still relatively protected and where products are intended for the domestic market

(milk, flours, etc.). These conclusions must, of course, be qualified, since there are still shortcomings<sup>2</sup>, but considerable adjustments have been made on the whole.

### **7.1.2 - Quality on the domestic market in Morocco**

So what is the situation on the internal market? Can it be said that export quality is to be found on the domestic market? There is no guarantee since, in the absence of a clear signal from consumers with regard to quality, and given the inefficiency of the structures for monitoring quality, there are no incentives to induce producers to achieve a level of quality equivalent to that required on entry to the European or American market.

Progressive market deregulation has had mixed effects on non-quality. There are fewer incidents of fraud in the pasta and couscous sectors due to competition from imported pasta (good value for money) and the availability of durum wheat semolina. The fruit and vegetable and seafood canning industries have had to cope with hygiene problems and have made considerable efforts because of the quality requirements on export markets. As regards milling plants, there has been a marked decrease in certain types of fraud but other infringements (damp, extraction above the authorised thresholds) have continued and are even on the increase. Instances of watering down are frequent in the milk processing industry, a fact which can be explained if one analyses milk collection practices. In low lactation periods quantity takes precedence over quality and firms are less concerned with standards. The aim is to satisfy demand (particularly when the low lactation period coincides with a period of high demand in connection with Ramadan, which has been the case for several years).

It is conceivable that in a completely open market a number of quality constraints will be lifted (as is the case with dairy products in particular), but non-quality is a highly profitable strategy in a market which is dominated by population segments with low purchasing power and where institutional structures for providing support, education, monitoring and justice are ineffective. Furthermore, the minimum conditions for the "consumerist culture" that is necessary if the population is to realise what is at stake in the quality context are still far from being met.

In the pasta and couscous sector, which has been exposed to foreign competition since the late 1990s, quality has improved appreciably, as can be seen from the decrease in offences detected by the fraud authorities. Within 10 years only dynamic undertakings that have been anxious to maintain quality standards have withstood the competition brought by market liberalisation.

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<sup>2</sup> European Commission, Directorate-General for Health and Consumer Protection (2001), Final Report on a Mission to Morocco (28 May to 9 June 2001), whose purpose was to evaluate the official departments responsible for monitoring the production and export of fisheries products and live bivalve molluscs.

Can this scenario be extrapolated to sectors that are still relatively protected (milling plants, dairy firms, etc.) and that are developing on oligopolistic markets where demand is extremely elastic in terms of prices and unelastic in terms of quality? A tentative answer can be suggested by observing the Moroccan consumer rush on imported milk during Ramadan.

It is not necessarily the case that competition from abroad always brings quality. There is no reason why competitors (such as Turkey, Spain or even agro-food multinationals) should not develop a supply on the national market in view of the inadequacies of the institutional monitoring and information structures and of course the low purchasing power of the population. The same countries identified by the European RASFF are liable to "dump" their contaminated products (see Table 1) on Moroccan markets. Only reliable and efficient institutions will be able to impose the necessary safeguards on competitors and ultimately protect dynamic national industrialists from the unfair competition that can come from "above" (imports or multinational companies) and "below" (small national firms for which non-quality is a strategy).

Monitoring structures and structures for consumer education:

In Morocco the mission of monitoring the quality of agri-foodstuffs is the responsibility of the public authorities. It is split up between 9 structures under the authority of 4 ministerial departments, and this fragmentation poses dire problems of overlapping and coordination.

**Table 7.2 – Quality control structures in Morocco**

<b>Ministerial departments</b>	<b>Structures in charge</b>	<b>Coordinating bodies</b>
<b>Department of Agriculture</b>	Directorate for Crop Protection, Technical Control and Fraud Control	Standing Interministerial Committee for Food Monitoring and Fraud Control in the Sale of Goods (established by law in 1968)
	Directorate for Animal Husbandry	
	Autonomous establishments for the control and coordination of exports	the National Committee of the Codex Alimentarius (set up in 1998)
	ONICL (national interprofessional office for cereals and leguminous plants), Official analysis and research laboratory	the National Health Watch Unit (established by joint circular in September 2000 following the mortadella food poisoning incidents)
<b>Department of Health</b>	Directorate for Epidemiology and for Disease Control	Higher Interministerial
<b>Department of the Interior</b>	Mouhtassibs, DCAE (Ministry of the Interior) and DGCL (Directorate General for Local Authorities)	Council for Quality and Productivity (established by
<b>Department of Trade and Industry</b>	SNIMA (Moroccan Industrial Standardisation Department)	decree in 1970)

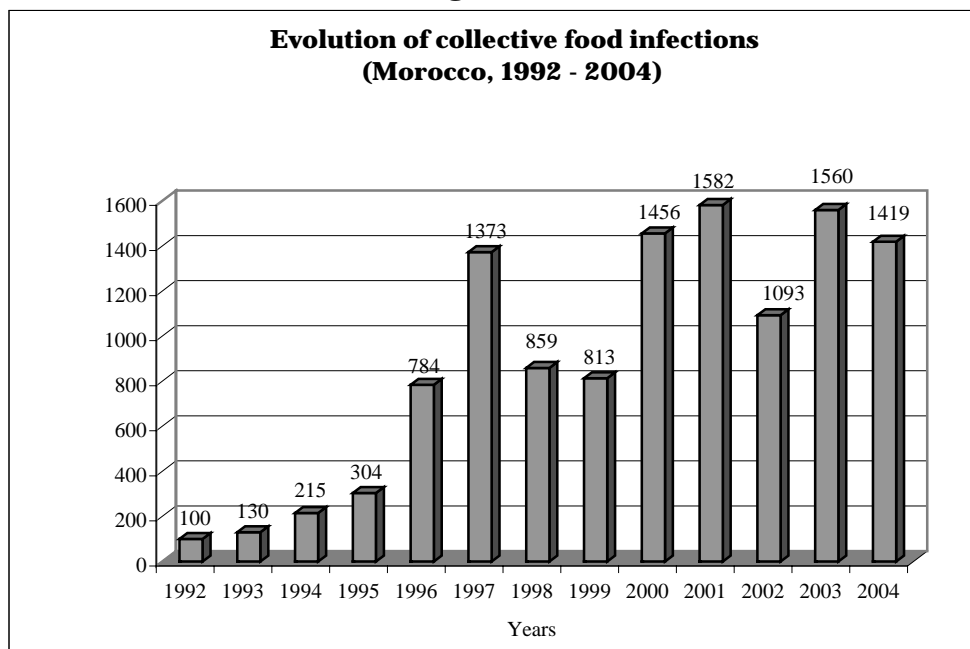
This multiplicity of departments is an important factor in the inefficiency of the monitoring system. The consecutive budget cuts in the structural adjustment programmes in the 1980s resulted in a substantial reduction of means (for example, the official cars for inspectors who constantly have to go out into the field were done away with...).

Interviews with certain officers in quality institutions have confirmed that monitoring activities have been reduced in the past few years, a fact which can be seen from the limited number of statements actually filed (by the fraud authorities), whereas on the other hand economic activities (production, agro-food processing and the agro-tertiary sector of the food industry) are expanding as the result of urbanisation, population growth and the opening of the national market.



The increase in the number of instances of food poisoning (Figure 2) can also be attributed to this reduction of monitoring activity. The fact that certain national leaders and officials in international institutions (FAO)<sup>3</sup> are painfully aware of the need to reunify these departments in an independent Food Quality and Safety Control Agency such as the FDA in the United States has not yet produced any results due to the inveterate "clique mentality" and conflicts between the various departments.

**Figure 7.2**



Source: Ministry of Health, Directorate for Epidemiology and Disease Control.

The consumer associations, which should compensate for the chronic inadequacy of State structures by informing consumers about real foodstuff hazards are virtually ineffective. There is a consumer organisation in practically every major city, but the activities of these organisations lack visibility. Since they lack means (both human and financial), they are unable to play their vital role of informing the population and raising awareness. So, in these circumstances, just how aware are Moroccan consumers of the health problems posed by foodstuffs?

<sup>3</sup> FAO/WHO workshop on effective food control systems, Rome, 24 January 2005.

## **7.2 - Consumers and food risks in Morocco**

### ***7.2.1 - Methodology for evaluating consumer perception***

In order to evaluate consumer perception two one-to-one surveys (quota method) were carried out at an interval of one year (2004 and 2005) with two different, but complementary, objectives. The first survey aimed to determine the perception of the health risks entailed in food products by Moroccan consumers and passing tourists; it was conducted in 2004 and covered 200 inhabitants of Rabat and 100 tourists in Marrakech. The second objective was to determine the factors explaining a potential demand for quality marks on the part of Moroccan consumers and foreign residents. This survey was conducted in Rabat in 2005 and covered 200 Moroccan clients in the large-scale retail trade and 40 foreign residents. In the first survey, the products entailing a health hazard were selected on the basis of studies conducted by food experts and specialists. And the second survey involved a comparative crossing between the products on which consumers were consulted with regard to the affixing of a quality mark and the data of the Ministry of Health on products responsible for food-borne diseases. The city of Rabat was chosen because the level of education and awareness of food risks are higher there in relative terms than in other cities in the country. All results should therefore be revised downwards.

In the case of beef and veal, poultrymeat, bananas and honey the opinions of experts working on these issues in the Hassan II Institute of Agronomic and Veterinary Studies (Rabat) were taken into account. The other plant products were selected on the basis of discussions with officials in the Directorate for the Protection of Plant Products, Technical Control and Fraud Control (Ministry of Agriculture) and the analysis of data from statements filed and files forwarded to the Public Prosecution Department.

The products selected on the basis of the most probable types of contamination are set out in the following table.

**Table 7.3 – Real hazards entailed in the foodstuffs selected (expert opinion)**

<b>Foodstuffs selected</b>	<b>Type of contamination possible</b>	<b>Experts' perception</b>
<b>Industrial chickens</b>	Microbiological and chemical	Significant risks of residues of veterinary drugs such as nitrofurans (furaltadone and furazolidone) <sup>4</sup> and fluoroquinolons <sup>5</sup> Bacteriological salmonellosis problems
<b>Beef and veal</b>	Microbiological	Hygiene conditions. Defective transport and delivery system. Bacteriological quality with major gastro-enteritis-related <sup>6</sup> hazards Concern – as yet unconfirmed – with regard to cattle that was imported before the ESB crisis Risk of tuberculosis transmission
<b>Fish</b>	Microbiological	Freshness not ensured either because of interruption of the cold chain, faulty handling or fraud at market level.
<b>Milk</b>	Fraud without any known health effects	Fraud in the form of watering down or reconstitution during low lactation periods. In 1999, 68.5% of the samples taken by the fraud departments were found to be sub-standard. (The figure was 26% in 1991.)
<b>Apples</b>	Chemical	Treatment with antioxidants (“diphenylamine”) to prevent the fruit from going brown when refrigerated, but also residues of pest control products in the fields where the crops are grown and at storage level. Residue problems
<b>Tinned fish</b>	Microbiological	Quality problems in the past (histamine, etc.) Quality improving because of export requirements
<b>Honey</b>	Chemical	Product subject to high levels of fraud (addition of sugar) + more recent problems of pest control residues and residues of antiparasitics and antibiotics used to treat certain bee diseases (in the case of modern beehives)
<b>Bananas</b>	Indirect health effects due to the deterioration of the ozone layer	Problem of soil nematode control treatment: methyl bromide, which has significant effects on the deterioration of the ozone layer and is due to be completely banned by the Montréal Protocol (already banned in Europe as of one in January 2005)

Source: Our interviews with experts and analyses of scientific documents.

<sup>4</sup> Cf. Results of the research programme launched by Prof. A. El Hraiki and the Ministry of Agriculture (National Laboratory for Veterinary Drug Control) on nitrofurans residues in poultrymeat products, 1997-2000.

On the effects of nitrofurans on human health: Information Bulletin no. 78 - Directive of the Swiss Federal Public Health Office: Nouvelles concentrations maximales pour les résidus de nitrofuranes dans les denrées alimentaires d'origine animale (New maximum concentrations for nitrofurans residues in foodstuffs of animal origin), Bern, 9 August 2002.

<sup>5</sup> A. El Hraiki (2005).

<sup>6</sup> Cohen N, Enaji H, Karaouane B, Karib H (2003).

### 7.2.2 - General perception of food quality

a) Perception of quality development:

In the case of 5 of the 8 products selected on the basis of expert opinion, quality has developed favourably (poultry 60%, apples 57%, honey 58%, bananas 62% and milk 40%), whereas the quality of the other 3 products – fish, beef and veal and tinned fish – has been maintained. In the case of milk, consumers were divided as to how its quality was developing, 50% of the persons interviewed considering that the quality had deteriorated and 50% considering that it had improved.

**Table 7.4 – Moroccan consumers: perception of quality development**

<b>Commodity</b>	<b>Perception of the development of its quality</b>
Poultry	has improved (60%)
Apples	has improved (57%)
Honey	has improved (58%)
Bananas	has improved (62%)
Fish	has remained the same (47%)
Beef and veal	has remained the same (42%)
Tinned fish	has remained the same (42%)
<b>Milk</b>	has improved (40%) has deteriorated (37%)

Source: Data from the survey conducted by Mounir I (Rabat and Marrakech, 2004).

The tourists, on the other hand, said they enjoyed Moroccan products more after visiting Morocco: 53% of them enjoyed Moroccan products before visiting the country, and 80% said they enjoyed them after their visit. The proportion of persons who considered that the quality was average dropped from 45% to 18%. One thus observes a positive evolution in the tourists' perception of the quality of Moroccan food before and after their visit to Morocco. This positive perception is related in particular to the **organoleptic quality (taste)** of the products, which the tourists often cite as the main assessment criterion.

b) The criteria used for evaluating a product's quality are its taste, its freshness and its composition:

The inhabitants of Rabat judge the quality of a foodstuff on the basis of three main criteria: **taste** comes first (27% of the population), and this criterion is even more important for men. **Freshness and appearance** are the second criteria used. And finally, the **composition of the product** influences the judgement of 25% of consumers; it is a factor cited more often by graduates. The criteria used for assessing product quality of the products studied differ from one product to another and depend on socio-occupational category and age. Women seem to

attach more importance to the freshness of food. The higher the level of education the greater the importance attributed to information on the manufacturing of the product such as composition and food safety marking. Freshness, appearance and taste are the criteria more typical of citizens with lower sociocultural status.

Compared to the study conducted by CREDOC<sup>7</sup>, this work shows that Moroccans use the same criteria as the French to assess foodstuff quality, the only difference being the hierarchy, since **freshness** is more important for the French than **taste** and **composition**.

Thus the French, who have higher sociocultural status and live in a consumerist country with a developed agro-food sector, assess the quality of their foodstuffs according to the same criteria as Moroccans.

Whenever consumers are looking for a quality product, what they trust most is the **brand**, the “**use-before**” **date** and the **information on the composition** of the product.

The **brand** is the **primary criteria for choosing a quality product** for persons seeking food safety.

Tourists give precedence to **freshness and appearance** (20%); 17% of them choose the criterion of **local product** and 16% choose **taste**. They appreciate the organoleptic aspect but are suspicious regarding health aspects. They say nevertheless that they prefer national products and are particularly interested in fruit and vegetables.

What tourists are looking for is adventure, tradition, taste and the discovery of the local culture, and they favour traditional markets, the merchants on the famous “jama lafna” Square, and mid-range restaurants. Those who seek convenience, trustworthy products and quality tend more to shop in supermarkets and to frequent up-market restaurants.

The taste criterion is not assessed the same way by everyone, however. Contrary to Moroccans, who have no objective information on the real quality of products, tourists evaluate taste from a perspective based on a sound level of education and information and, ultimately, on “consumerist awareness”. When one considers the excessive use of artificial flavouring by the AFIs<sup>8</sup>, this would not be to the “taste” of the well-informed tourist, who is aware of the noxious effects of flavourings and seeks authentic natural flavours.

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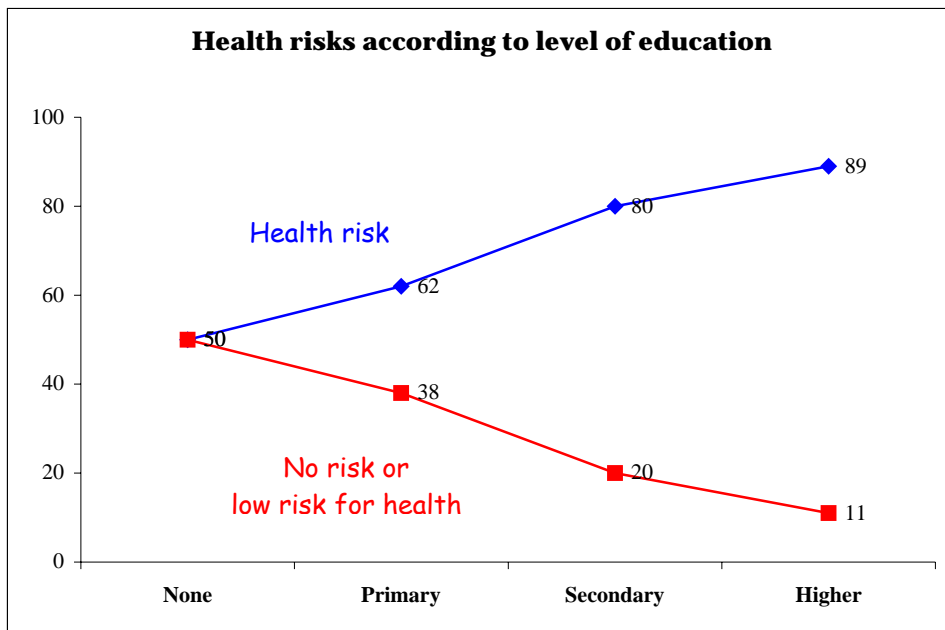
<sup>7</sup> CREDOC ([French] research centre for the study and observation of living conditions), « Les opinions des français sur la qualité et sur les risques sanitaires des produits alimentaires » (“The opinions of the French on the quality and health risks of foodstuffs”), April 1998.

<sup>8</sup> Ait El Mekki A, Ghersi G, Hamimaz R, Rastoin J-L (2002), ONA, Prospective agro-alimentaire 2010 (Agro-food outlook 2010).

### 7.2.3 - The perception of food risks

The majority of the inhabitants of Rabat think that food products now present health risks: 80% believe this, and 48% even go as far as considering the risks “significant”. This phenomenon concerns all categories of the population. It is mainly consumers with a higher level of education who are more aware of these risks, since they are better informed than the rest of the population.

**Figure 7.3**



Source: Data from the survey conducted by Mounir I (Rabat and Marrakech, 2004).

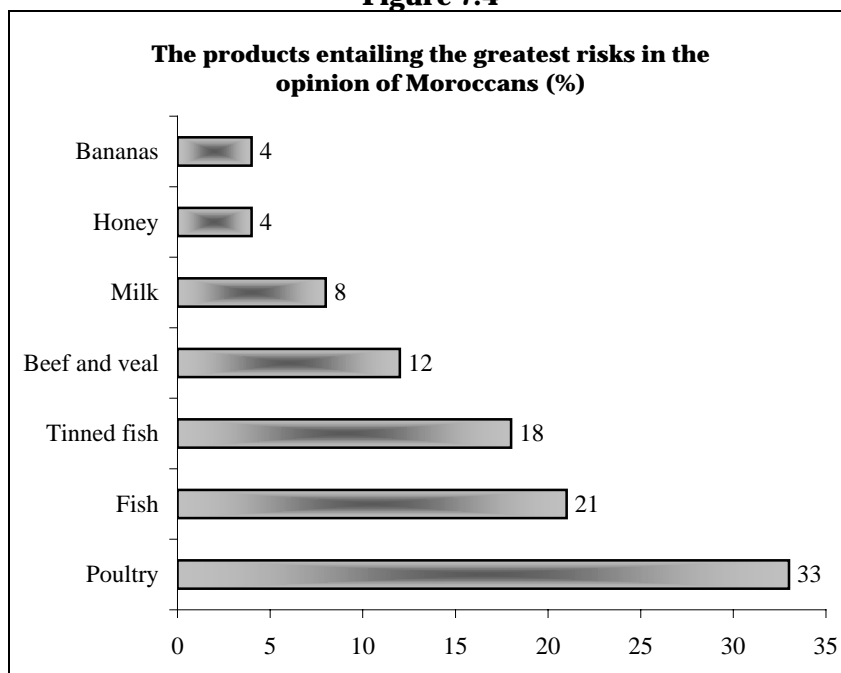
#### a) Tourists less perceptive of risks:

Tourists are less concerned than Moroccan consumers. One out of two tourists thinks that the foodstuffs available on the Moroccan market do not present any health hazards. It is to be noted, however, that 33% of tourists have already had health problems with Moroccan products, a fact which raises the question of the influence of this proportion on the non-return and satisfaction rates of tourists.

b) Comparative perception of food risks (2004 survey):

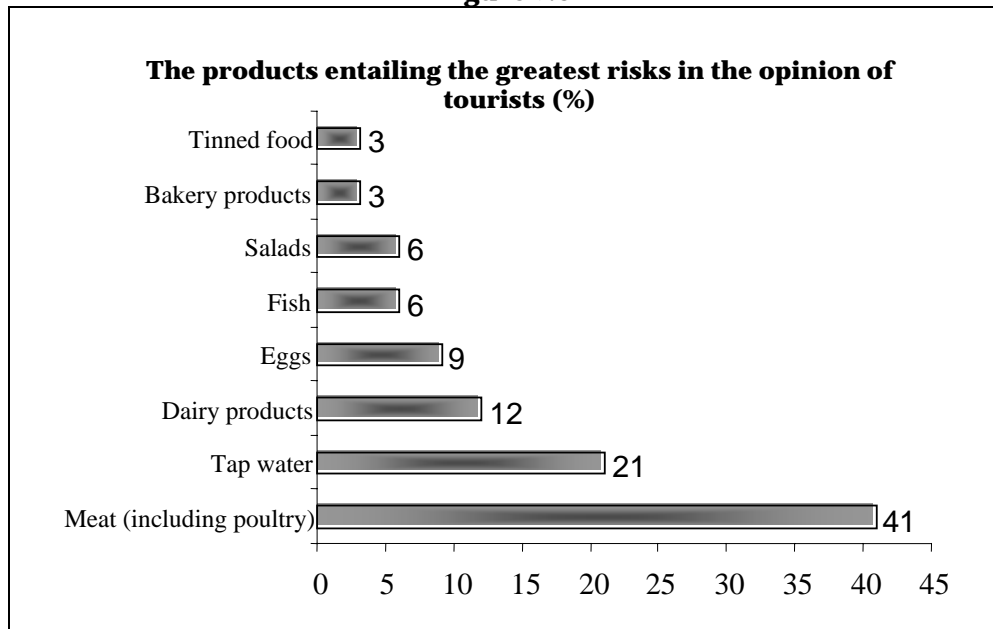
The surveys conducted in Rabat and Marrakech in 2004 demonstrated that meat, and in particular poultrymeat, are the products which worry consumers in the city of Rabat most. This opinion is shared absolutely not only by 41% of tourists but also by the experts interviewed, who recognise the high risk for consumer health presented by industrial chickens due to residues of veterinary drugs but also by fish “if it is not handled properly”. This apparent similarity can be deceptive since the real risk factors are not perceived at all. This apprehension is often to be explained in part by the information received through the media (on dioxin etc.).

**Figure 7.4**



Source: Data from the survey conducted by Mounir I (Rabat and Marrakech, 2004).

**Figure 7.5**



Source: Data from the survey conducted by Mounir I (Rabat and Marrakech, 2004).

Tourists cite tap water as a major hazard, but this is not the case with Moroccan consumers. Here again, information sources play an important role. In the “food” recommendations made to tourists in travel guides and other documents, tourists are advised to avoid drinking tap water and to drink mineral water instead<sup>9</sup>.

Expert opinions converge (Table 5), except on bananas and honey. The public at large is not yet aware of the problem of pest control residues. Very few Moroccan consumers and tourists can explain the effects of the substances used for treating nematodes (banana trees and other horticultural crops) on the ozone layer and thus indirectly on human health. Similarly, people are not particularly concerned about the quality of honey. The type of fraud to which this product is subject (addition of sugar) does not affect the health. Very few consumers are aware of the problem of pest control residues used on trees<sup>10</sup> on which bees gather pollen or of the residues of the antiparasitics and antibiotics used to treat certain bee diseases<sup>11</sup>. Moroccan

<sup>9</sup> See the web sites of two sources as different as the French Ministry of Foreign Affairs (advice for French nationals) and the “Guide du routard” (French backpacker’s guide).

<sup>10</sup> D. Belpomme, Les produits phytosanitaires et la santé humaine (Pest control products and human health), “l’Abeille de France” magazine (apicultural journal).

<sup>11</sup> Opinion of the French Food Safety Agency, to which a case of possible risk related to the presence of residues of tetracyclines and streptomycin in honey was referred by the Directorate General for



consumers do not have a high opinion of tinned fish, yet this is one of the products subject to the strictest quality controls due to export requirements and the considerable efforts made by the Moroccan canning industry to upgrade these products.

**Table 7.5 – Consumer perception compared with expert opinion**

<b>Commodities</b>	<b>What consumers think</b>	<b>Consumer assessment criterion</b>	<b>What the actual situation is</b>	<b>Expert opinion</b>	<b>Level of awareness of quality problems</b>
Poultry	Poor quality	Freshness, appearance, origin	Quality entailing risks	Residues of antibiotics	Very low as regards residues, average as regards hygiene
Fish	Average quality	Freshness, appearance, cold storage	Good quality (if properly handled)	Not properly handled, incidents of fraud	High
Beef and veal	Average quality	Freshness, food safety mark	Very average quality	Bacteriological risks related to hygiene	Very low
Milk	Average quality	Taste, freshness	Average quality	Fraud	Nil
Apples	Good quality	Freshness, taste	Average to good quality	Residue problems	Low
Tinned fish	Poor quality	"Use by" date, composition	Good quality	Export requirements	Nil
Honey	Average quality	Taste, origin	Average quality	Widespread fraud residues	Low
Bananas	Good quality	Taste, appearance	Average to good quality	Soil nematode treatment problems	Very low

Moroccan opinion is divided as to the development of the quality of some of the foodstuffs studied over the past 10 years: a large proportion of the persons interviewed considered that the quality of poultry, apples, honey and bananas had improved slightly, whereas that of fish, beef and veal and tinned fish had remained unchanged, the most controversial product in this respect being milk. In the case of meat, the above-mentioned sources agree unanimously that meat quality has

developed favourably despite the problems encountered by this product. According to the same sources, this improvement in quality also concerns tinned fish and milk. Honey is the only product whose quality has deteriorated due to the fraud to which it is subject.

As for tourists, before visiting the country they considered Moroccan foodstuffs to be of average quality. These opinions depend on sources of information such as travel agencies and tourist guides. This perception develops, however, once they visit the country, since more than 50% of tourists consider that the national products are of good quality. It is to be noted, however, that for a large proportion of tourists good quality is synonymous with good taste.

The results of a survey conducted on a representative sample of 200 Moroccan consumers and 40 foreign residents in Rabat in 2005 were fairly similar. The conclusions drawn in that study were compared with the data on food poisoning issued by the Ministry of Health.

d) Recorded instances of food poisoning and consumer perception (2005 survey):

In the case of foodstuffs entailing a health hazard Moroccans' perception is in keeping with the data on food poisoning. 26% of the persons interviewed cited dairy products and tinned fish. Chicken and red meat were cited by 23% and 16% of the interviewees respectively. Rabat consumers are much more suspicious of fruit and vegetables (13%), however, which is not the case with foreign consumers. Some of the incriminated products were not mentioned by Moroccan consumers.

In the foreign residents' opinion, the main products entailing a health hazard are red meat (22%), chicken (19%), dairy products (14%), fish (16%) and eggs (12%). These results tally with the data of the Directorate for Epidemiology and Disease Control on the products responsible for cases of food poisoning in 2003 and 2004. It should be noted, however, that some of the products identified (by the Ministry of Health) in food poisoning incidents – couscous, drinking water and snails – were not mentioned by the foreign consumers. On the other hand, foreign consumers are suspicious of products such as tinned fish (8%) and honey (2%), even though they are not included in the list of products incriminated in cases of food poisoning.

#### ***7.2.4 - Negative perception of quality control***

When asked directly to state their opinion of food control or regulations, consumers express distrust on the whole. The majority of the population questions Moroccan food regulations, 59% considering them to be inadequate. It must be noted, however, that 30% of the population does not know anything about those regulations.

Control procedures are considered inadequate on the whole, irrespective of the stage of the food chain.

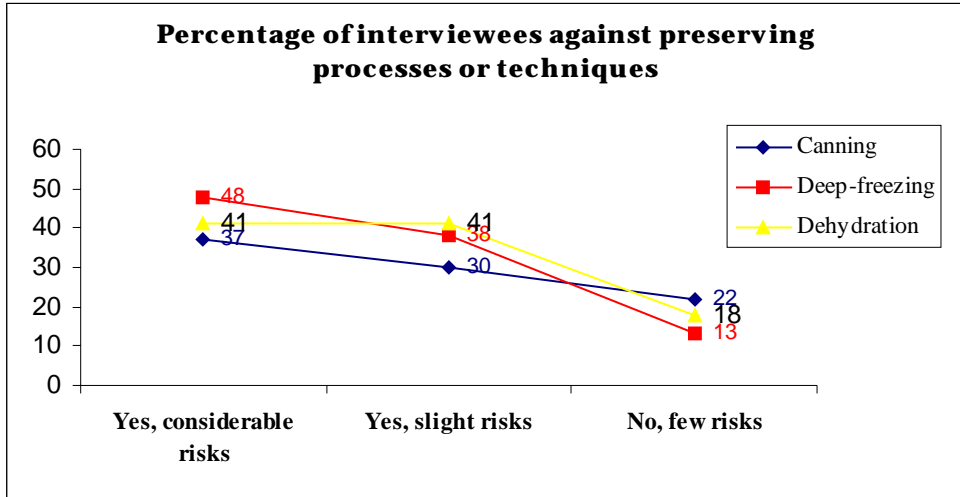
Inspections concerning the manufacturing of foodstuffs and sales points were severely criticised: 77% of the population consider that the inspections carried out at sales points are inadequate, whereas the figure for manufacturing inspections was 69%. As regards the inspection of imported products, 42% of the Moroccan interviewees stated that they did not have any opinion on these controls, and 49% considered them inadequate.

Moroccan consumers thus seem to be distrustful of the inspections carried out on the whole. This image has negative effects on the perception of the technologies used by the AFIs. The more concerned consumers are about quality control the more they are against new technologies.

- 75% of those who consider that food regulations are inadequate are of the opinion that foodstuffs present health hazards.
- 84% of those who consider that manufacturing inspections are inadequate are of the opinion that foodstuffs present health hazards, and 54% of this group consider that the risks are considerable.
- Similarly, 82% of those who consider inspections conducted at food sales points to be inadequate are of the opinion that foodstuffs entail a health hazard.
- And the situation is similar with regard to imported foods (84% of those who consider that import controls are inadequate are of the opinion that these products entail risks for consumer health).

Here again, opinions on whether controls and regulations are adequate or inadequate are related to the attitudes adopted to new technologies.

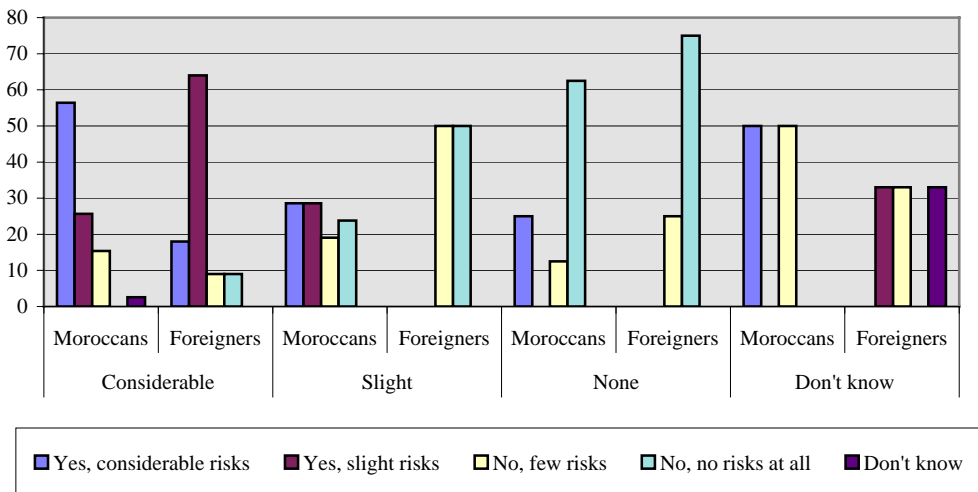
Figure 7.6



7.3 - Food risks and quality marks

a) The demand for quality marks depends on the perception of health risks:

Figure 7.7 - The demand for quality marks taking account of the perception of health risks

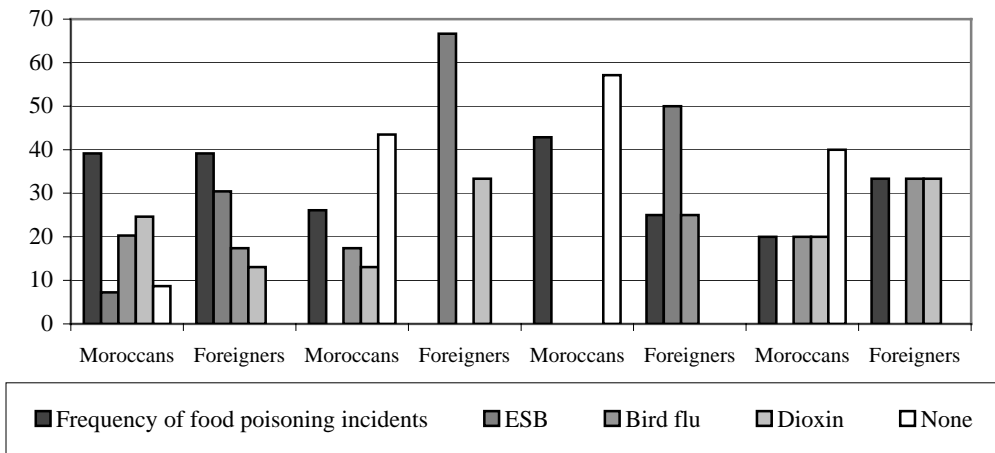


Source: surveys conducted by El Baz F (city of Rabat, 2005).

In the case of both Moroccan consumers and foreign residents, the perception of the role played by quality marks in improving food quality is closely related to the risks entailed in foodstuffs. For approximately 80% of the Moroccan and foreign interviewees who attach great importance to quality marks consider that foodstuffs present slight to considerable risks. However, 63% of the Moroccan interviewees and 75% of the foreigners who do not attach importance to quality marks consider that foodstuffs present no risks whatever.

b) The demand for quality marks depends on the influence of food crises:

**Figure 7.8 - The demand for quality marks and food crises**



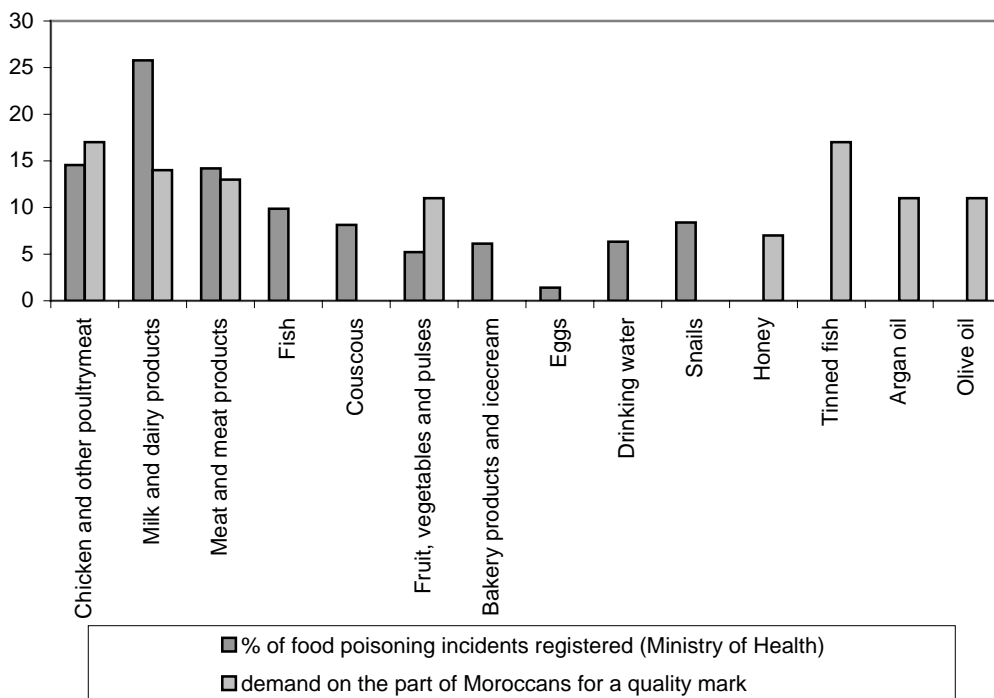
Source: surveys conducted by El Baz F (city of Rabat, 2005).

Most of the Moroccan interviewees who said that they attached importance to foodstuff certification were influenced by the recent crises in the agro-food sector (at both the national and the international level) such as the frequency of food poisoning incidents (39%), dioxin chickens (25%), and bird flu (20%). However, 57% of the Moroccan interviewees who said they attached no importance to quality marks also said that they were not influenced by food crises.

Although the foreign consumers said they were very concerned about the food crises, this factor nevertheless did not seem to influence their demand for quality marks.

c) Quality marks for the products incriminated in food poisoning incidents:

**Figure 7.9 – Food poisoning incidents recorded and Moroccan demand regarding the products requiring quality marks**



Source: Surveys conducted by El Baz F (city of Rabat, 2005) and data on food-borne diseases provided by the Ministry of Health.

Moroccan consumer demand for the certification of certain foodstuffs is closely linked to the frequency of food poisoning involving those products. Chicken (17%), dairy products (14%), and red meat (12%) are in fact the principal foods for which Moroccan consumers are calling for certification; these products have been incriminated in numerous cases of food poisoning. Tinned fish was cited by a considerable proportion of the interviewees (17%) despite the fact that it does not in fact constitute any real health hazard; this can perhaps be explained by inadequate perception.

As for the products which have not been incriminated in food poisoning incidents such as olive oil or argan oil, there could be other valid reasons explaining the demand for certification such as the need to safeguard the authenticity of these oils or to protect them against the fraud to which they are often subject (sale in bulk, etc.).

The foreign consumers also called for certification of certain foodstuffs incriminated in numerous cases of food poisoning such as dairy products (16%), red meat (21%), fish (16%) and chicken (17%). As was the case with the Moroccan consumers, the foreign interviewees mentioned products which, according to Ministry of Health data, have not been identified as major sources of food poisoning. The reasons may be connected with the desire to upgrade a local product by giving it a designation of origin (as is the case with honey, argan oil and olive oil), the fraud to which products of this nature are subject or, lastly, the influence of certain foreign media (in the case of snails).

#### **7.4 - Conclusions**

In a national environment marked by the absence of preventive and monitoring structures and structures for consumer information and education, consumers (and in the case of Rabat they are relatively “well-educated”) perceive risks through a prism of information on international problems that are given wide media coverage or of food poisoning rumours. Since these consumers base their opinions mainly on criteria such as freshness, taste and appearance in order to evaluate the quality of foods, they do not always perceive the real risks involved. Even if the opinions expressed on products entailing health hazards sometimes tally with expert opinion, the reasons given are not the same. This is the case, for example, with industrial chicken, on which beliefs are formed that are fostered by the dioxin and bird flu problems discussed on satellite TV. The experts, on the other hand, place more emphasis on residues of veterinary drugs.

Other products are perceived as entailing health hazards, whereas this is not in fact the case. This applies to tinned fish, whose quality and safety has improved as the result of export requirements. This is a case where Moroccan consumers base their opinion on beliefs and rumours which have not been confirmed.

Consumers’ loss of confidence in the quality monitoring structures that are intended to protect them has repercussions not only on their perception of foodstuffs but also on their perception of the technological processes used in the processing industry such as dehydration or deep-freezing.

The 2005 survey demonstrated that the products that had been incriminated in food-borne diseases were relatively well perceived, a fact which can be explained by experience and information by word of mouth. But the data on food poisoning incidents do not take account of all of the cases of chemical contamination such as residues because this type of contamination is propagated very slowly. It is only cases of food poisoning that are due to lack of hygiene in the preparation, transport and preserving of foodstuffs or to the excessive use of pesticides and are thus more spectacular which are consequently more easily identified and registered. Tourists and foreign residents, who are more aware of food problems, are influenced by

information from tourist guides or other more "official" recommendations. Their attitudes become more positive after their stay in the country, the taste of the local food being one of the major culinary discoveries.

The desire to be "reassured" by labels and quality marks or, as the case may be, "safe investments" such as the reputation of a brand that is supposed to diminish doubts is no doubt to be explained by the fact that people perceive the risks but are unable to identify them exactly.

The reasoning is clear. The only way to have a favourable impact on the national agro-food system is to provide several forms of information (education, awareness raising, knowledge, etc.) in particular by developing a strict system of quality marks, by encouraging and supporting consumer associations and thus enabling them to play an effective role, and by stimulating prevention and control structures within the framework of one single body. This information would reassure consumers and develop their knowledge thereby reducing unwarranted doubts, creating real opportunities for competitive new quality products, and contributing to the development of tourist loyalty and the preservation of the tourist market, on which considerable efforts are being focused.





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Annual report  
2006

Centre International de Hautes Etudes Agronomiques Méditerranéennes

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