The Role of Wholesale and Retail for the Food Supply of Tomorrow

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The wholesale and retail sector is characterised by permanent change. The food assortment has grown in diversity and procurement sources, and it is increasingly based on highly processed foods. Stores have expanded in size, and at the same time strategies of segmentation like discounters or retailers with service facilities or even internet-traders are pursued. Information technologies have become an important strategic tool for distribution because “quick” defeats “slow” in a situation of global competition. Tracing/tracking and knowledge of good agricultural practice as well as data about their consumers, today, are an essential part of successful Corporate Social Responsibility of retailers. In the future, global access to food and feeding the poor will also play a major role in the political positioning of retail leaders.


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1 Introduction

The role of wholesale and retail in the food supply chain has changed dramatically in recent decades, as indicated by the increase in store size, broadening of the range and diversity of the assortment, number of stores per retailer, size of companies, ranging from local up to international or even global players, use of IT tools for management, and heterogeneity of customers. Also, procurement has grown from local and national to global. Another characteristic of today’s retail is the year-round supply of food stuffs that were only seasonally available in earlier times.

Traditionally, a conceptual distinction was made between wholesale and retail business. This view has been replaced by the notion of a functional split which is neither congruent with the former concept of “wholesale” nor with the former concept of “retail”. The nature of distribution has also changed from an exclusive focus on the consumer towards the reintegration of production and marketing by the setting of benchmarks and standards that are accepted in the whole supply chain from farm to fork. This system of standards is based on rules established by private organisations, followed by their implementation, adaption and administration, and has gained great importance in the management of the food supply chain. Examples of such organisations are Orgainvent, GlobalGAP or QS.\(^1\) A standard set by private organisations can be seen by one party as a tool to save costs or to guarantee food safety, while another party might consider it to be a non-tariff trade barrier.

Looking ahead at the 2050 horizon, a major challenge for wholesale/retail will be global food security. The Food and Agricultural Organization of the United Nations (FAO 2013) and the EU Commission (EC) estimate an increase in demand for food of 40 %, while on the other hand the availability of arable land will decrease for various reasons. Furthermore, research projects like ForWaRd (http://foodrecoveryproject.eu/) and FUSIONS (http://www.eu-fusions.org/) show that nowadays about 40 % of the food produced for human nutrition is either lost in production and processing or wasted in distribution, households and restaurants. Optimisation of the total supply chain is needed, taking into account also underprivileged groups. This means that the economic target should be enriched to include environmental and ethical targets.

2 Development of Store Size and Assortment

Taking the situation in Western Europe after the Second World War, food retail in those times was very specialised in categories like milk, meat, fruit, and vegetables. Only small neighbourhood stores of about 30 to 50 square metres sold staple food like wheat, rice, pulses and daily foods like butter, milk and cheese, packed by the retailer from bulk units into individual consumer-size packages. With the introduction of self-service markets with pre-packed food, the stores transformed into the forerunners of today’s hypermarkets. From the initial 200 to 300 items in the 1960s and early 1970s, the assortment has expanded to 8,000–10,000 articles within the new standard format for supermarkets of 800 square metres (Hallier 2011a).

In order to remain competitive, retailers strive to adapt their assortment to the diverse needs of customers: Exotic products like pineapples, kiwis or mangoes have step by step broadened the local offer. To satisfy customers who place special emphasis on freshness, taste and maturity, a distinction is made between exotic fruit transported by ship and fruit imported by air. Some fruit like pineapples are offered already peeled as “convenient food: ready to eat”. Products such as yoghurt differ not only in package size, but also in flavour, fat content and other properties. Some articles are classified as “functional food”, meaning that they are enriched with special ingredients such as vitamins and minerals which are expected to have positive impacts on health. Religious traditions of immigrants also affect the assortment. Products labelled as “kosher” address Jewish consumers, products labelled “halal” address Muslim consumers. Other labels such as “organic” or “locally produced” refer to the method of production or food miles required.

In Germany and in most other European countries, the food industry is the driving force behind the expansion of the product range, in response to the saturation of food markets. Con-
sumer research in the last century was either the domain of manufacturers or of research think-tanks like ACNielsen or GfK paid by the industry (Hallier 2001, p. 65). Until the end of the 1970s, the cash registers of retailers were only capable to register product groups, not the individual items. Only the introduction of barcodes on the products, starting in 1975 and coordinated between food industry and retail in Germany by the CCG (Centrale für Coorganisation), enabled retailers to analyse their sales bit by bit. According to literature, it was even in 1987 a hot topic to write about maximising shelf-space by using modern tools in trade magazines like “Absatzwirtschaft”. When in 1995 an article claimed that retailers were on the way to achieving market leadership (Hallier 1995) this was seen as a provocation by several manufacturers.

Besides the food manufacturers, innovations of the packaging industry also have been a driver of new products. The shift from the “mom and pop” food specialist (milk store, fruit trader, chocolate store) in the 1950s towards the self-service supermarket was only possible on the basis of pre-packed sales units for margarine, butter, sugar, beans, milk, etc. In the 1970s, cooling and freezing enabled the sales of pizzas and frozen vegetables in self-service. On the other hand, packages were developed to keep products fresh for a longer time without refrigeration. In the mid-1980s, the burning and disposal of empty packaging in overcrowded landfills created big problems and led to regulatory action by the German Federal Government and its environment minister (Hallier 2001, p. 80). Since then, the burning of one-way-pallets or package-waste has been a criminal offence. Transport units were changed to multi-trip pallets/cases or to recyclable products; consumer units were optimised to fit better into logistic units (ISO modules ranging from cases and pallets up to specifically constructed delivery vans), taking account of handling costs in retail for loading, storing, unwrapping, costs of package waste. The key word was “Direct Product Productivity”, a calculation system which was developed in Germany under the leadership of the EHI Institute (Hallier 2001, p. 72). After first tests at four outlets (Aldi, Rewe, Tengelmann, and the City of Koblenz) it became clear that the consumers were not willing to bring empty packages of consumer units back to the stores – and that it was also a hygienic risk for the outlets to collect all those packages. Therefore, it was decided that a neutral organisation (“Grüner Punkt” – Green Dot) would collect the package waste at the households in separate containers. The regulation places the responsibility for package waste on the retailers who, in turn, exerted pressure on the manufacturers to optimise packaging and to become a partner of the Green Dot company.

Food retail does not get high marks for product innovation by own efforts. With the exception of Sainsbury and Tesco (both UK) and Carrefour (France), private retail brands have not played an important role in Europe, or only as a “cheap copy”. The launch of the first private brands in the 1980s simply consisted of monochrome packages, e.g. in white or yellow, to demonstrate frugality and cheapness. Even 35 years later, the successful range of Rewe’s “Ja!” products does not show many exciting elements on its package. The sales strategy is simply based on the low price. After all, the food industry has lost the brand competence for those products and has become a mere “bottler” (Hallier 2004).

At the same time, a further differentiation of store concepts and sizes took place. Typical concepts in the food business are: neighbourhood stores (400 m²/4,000 articles), discounters (600 to 800 m²/600 to 800 articles), supermarkets and hypermarkets (30,000 m²/40,000 to 60,000 articles). These figures include near-food and non-food items and demonstrate a change from food-specialists to retailers that are still focused on food but sell other articles as well in order to enhance the profile of the stores. The German discounter Aldi, for example, is surely a typical grocery store, but in the weekly advertising flyer foods play only a minor role. On the other hand, the scope of Aldi’s weekly clothing offer places it among the top ten of Germany’s textile sector ranking. Non-food profit margins are crucial for the “mixed calculation” of grocery shops in Germany. Due to the low prices in the food business, an assortment mix is a must.

Another aspect to understand the shift of opinion in retail is the inspiration from architecture and new concepts of non-food stores. Big
boxes (hypermarkets) were first realised in the mid-1970s by IKEA and Toys “R” Us, roughly at the same time. This new format is mixed with the concept of shopping centres located outside the cities as a new type of “all under one roof” concept. In the UK, especially Tesco was inspired to build small shopping centres outside the cities, with Tesco as an “anchor” combined, e.g., with health and beauty shops and specialists for electronics, etc. In Russia, Swedish IKEA developed shopping centres of 120,000–180,000 m² sales area – mostly with the French hypermarket/food specialist Auchan as the other anchor of those “shopping/sales machines”. Mass production met mass distribution for mass consumption at a time of mass mobility, all under the low-cost principle. Today, these criteria are key to the strategies of retailers.

3 From Instore IT up to Smartphones

The development of retail in terms of expanding store sizes, increasing diversity of assortments, and number of stores run by one retailer was only possible through continuous improvement of organisational processes and technological upgrading. From the mid-1970s, barcodes for electronic identification through scanners, shelf optimisation, chip technology, and QR code (Quick Response code) pixels were introduced over time. Some of these IT technologies concern the “internal” retail world, such as store management or relations with warehouses or logistic companies; a key word in this context is “automatic ordering”. Others also apply to the relationship with consumers. Even brick-and-mortar stores provide information on the Internet or experiment with their own virtual shops as a product line extension.

Data from the check-out points and from “loyalty cards”, recording customer information and purchase history, can be used for “data mining”. Investigating the individual buying behaviour enables retailers to optimise their own promotion strategies (timing, article mix) and to classify consumers into gold, silver or bronze customers. Via modern technology (Internet, smartphones, apps) those customers can be approached already before entering the shop or they can be guided through the shop by an electronic shopping card. Metro (Future Store) and Ahold NL, among others, are testing these tools.

In Korea, shopping by mobiles and QR codes is already common practice, not the exception. “Home plus” – a subsidiary of the British retailer Tesco – has become a leading online provider of food. At subway stations in Seoul, big posters placed on storage racks display products, each with its own QR code. While consumers are waiting for their train, they can select the desired products by taking a photo via smartphone. The chosen products are put into a virtual shopping basket and sent to Home plus. While the consumer is on the train, the supplier compiles the products and prepares them for delivery according to the chosen time-table.

4 Food Safety

A first tracing/tracking system for raw materials was developed in 1994 by the EHI Retail Institute and its subsidiary Orgainvent as a tool to cope with the Mad Cow Disease in the UK. At that time, with the technologies of the 1990s and due to a lack of trust and exchange of information within the total supply chain from farm to fork, retail, wholesale, cutting houses, and even slaughter houses could not guarantee to have no British beef among their supply.

In Germany, each of the Federal States had its own registration system for veterinarians (North Rhine-Westphalia had even three different ones), none of them electronic. While responsibilities on the government side were decentralised, the big retailers distributed their commodities, partially originating from international sources, all over Germany. Therefore, in 1994, the EHI Retail Institute organised a dialogue platform to bring together all the relevant players in the supply chain for cattle and beef at a Round Table. The first step was to build trust between the different players along the supply chain, the second was to develop a joint flow-chart for internal control with interfaces (Fig. 1) to connect all these “information islands”, and the third step was external communication to the consumer.

The tracing/tracking system started as a private initiative under the name “EHI label”. Two years later it was institutionalised by a joint ven-
• to open information channels to consumers along the different stages of the supply chain without violating the trade secrets of the companies involved;
• to transform bilateral communication standards into multilateral standards in order to run the system efficiently.

Based on these discussions, Tönnies and its partners decided to pass on the new tool and experience to GS1 Germany (Global Standards 1 – which is the former CCG, now a member of the worldwide Global Standard 1 network) as a common standardisation platform. F-tracing represents a shift away from the original tracing/tracking philosophy. In 1994, the philosophy was to enable data flow through interfaces from farm to fork, with the aim to allow quick checks for crisis management. In contrast, fTrace of 2011 is a marketing approach with the aim to allow the consumer to check the supply system from fork to farm. The danger of this marketing strategy is potential misuse by checking the sources for competitive reasons. Clearing houses as neutral data collectors that are able to supervise incoming and outgoing data according to agreed standards for access will therefore play a major role in the future partnerships of the total supply chain.

Since the 1990s, the retail business has gained an important role, also politically, in the supply chain, due to the concentration processes, the absolute size of the big players, their global experience in acquisition and distribution, and their growing concern about raw materials. As an example, the annual turnover of the US company Walmart is bigger than the Gross National Product of Switzerland. And, according to EHI estimates, Walmart's yearly IT investment is bigger than the total turnover of the number one retailer in many countries. Large retailers can only control their distribution activities by using IT. As mentioned above, mass distribution is based on mass production which again is based on standards. In purchase contract negotiations between retailers and suppliers, the product

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Fig. 1: The Empowerment of Retail by Marketing-Tools

Source: Hallier 2001b, p. 115
under discussion is no longer checked physically but defined by certain characteristics that become benchmarks or even standards/norms. It has to be admitted that very often these benchmarks relate to aesthetic appearance and size, which is also due to the fact that other characteristics are not easy to measure. But this approach also reflects consumer behaviour. Changes in the attitude of the consumers could play a role in the future dialogue about food waste.

In earlier times, national administrations or even the EU Commission decided on such norms. But due to the dynamics of the markets and the inertia of administrative coordination by government organisations, this task has shifted to the retailers. The buying department of a retailer wants to know in advance what quality they will receive for their money. Price, quality and quantity of the product delivered are key factors in the marketing and advertising strategy. This often results in clashes with agriculture, which is highly dependent on weather conditions. Retailers seek to provide the advertised products and therefore insist on delivery even if the contracted volumes are not available at the contracted farm, and the supplier has to organise sub-supply at his own cost.

5 The Concentration Process in the Retail Business and Impacts on Agriculture and Manufacturing

An enormous concentration process in the retail sector has gone on in recent years. Considering distribution in Germany within the past 70 years, major changes can be observed: Many regional chains or independent retailers had to sell their companies, and also major retailers such as Edeka, Rewe, Spar or Konsum changed their structures dramatically. While in the 1950s all these four organisations included 30 to 50 regional companies, each responsible for their own purchase, the regional companies were merged step by step and the bargaining for many products shifted to centralised purchasing at the national headquarters. Today, only two of these four organisations still exist. In the Western European countries, the top five retailers account for up to 80% of the retail sales. Due to the opening of the borders in 1990, there was not even one Polish retailer among the top ten ranking of Poland in 2000. Food chain management has also changed under this impact.

While the German literature on business administration in the 1950s differentiated between “retail” and “wholesale”, the English term “retail business” also covers wholesale. With the growing size of “retailers”, quite a lot of them gradually took over the functions of wholesalers, at least in some categories such as fruit and vegetables. On the other hand, former wholesalers started their own retail business either by franchising or by running their own hypermarkets, supermarkets and discounters or even by diversification (covering new markets such as electronics or furniture). For example, in the 1950s, Beisheim (Metro) and Schwarz (Kaufland, Lidl) were Spar wholesalers. While Metro, on the one hand, is still a self-service wholesaler (currently also experimenting with delivery and franchise systems in some countries), Galeria Kaufhof and Real, on the other hand, have their own stores with food departments. Some regional wholesalers jointly developed the hypermarket store concept Familia, serving as their own outlets. Meanwhile, the independent Familia North Germany has outsourced the purchase of certain categories of products to a “purchase group” formed by Familia NorthWest Germany and Familia SouthWest Germany in order to increase their volume and to become an equal partner in negotiations with big manufacturers on a national level. Also MARKANT started as such a purchase group, first nationally – to then expand internationally. Even big retailers like Rewe use purchase groups for certain products; this way Rewe made contact with Billa in Austria, which ended in a takeover by Rewe.

Other aspects are related to logistics: Some retailers do not even have their own depots but their stores are supplied directly. In the UK, on the other hand, retailers collaborate with logistic companies as third parties, and sometimes they jointly use the same logistics organisation for competitive selling points; some even outsource delivery planning and stock management to those partners. Still others run their own distribution centres for their different competing brands for discounters or supermarkets/hypermarkets.

In order to stay competitive, the remaining “classical” wholesalers have to increase compe-
tences beyond the acquisition/delivery of food items, e.g. by providing further services such as washing, packing or merchandising. Financial success can be achieved only by standardisation of the processes and by IT support. Without the right technical equipment, they risk being no longer listed as a competent supplier. The German tobacco wholesalers, for example, which were highly decentralised, entered into a contract with national petrol stations in the mid-1980s to establish a joint organisation (called DTV – Deutsche Tabakwaren-Vertriebsgesellschaft) in order to enable nationwide merchandising and promotion.

Another problem of national and international distribution are the large supply volumes demanded by big retailers. Small and medium-sized businesses may face difficulties in delivering the large quantities of products of a specified quality required by retailers who want to offer items of identical quality across all their stores. This is particularly problematic for the agricultural sector which depends on external conditions such as weather or fluctuating demands. If the aesthetic appearance of the ordered goods does not meet the expectations on the demand side, retailers usually change their supplier. Consequently, distributors carry the full financial risk. It is not clear to what extent long-term cooperation may decrease this imbalance. Some retailers are interested in long-term relationships, at least regarding certain categories of products, e.g. of meat, as in the case of the German supermarket chain Tegut.

Other approaches to support the competitiveness of the distribution sector build on the use of technologies to extend the shelf lives of products. Cooling and ripening systems, for example, help balance short-term fluctuations in delivery from field to retail. However, such solutions rely on the availability of technologies that monitor the status of goods. Apart from the high costs, this is a main barrier for the implementation of assisting technology. Last but not least, small and medium suppliers need to join their forces to be able to supply internationally operating retailers. Otherwise it would be left to the big players to negotiate prices and reductions for big/easy shipping, and thus to decide what is found on the shelves; this would promote the uniformity of the assortments. One example of joint marketing is the Cooperative Growers’ Association ZON at Venlo in the Netherlands, where more than 150 suppliers from the agricultural sector cooperate in order to be able to provide standardised products in sufficient quantities.

An alternative to conventional distribution channels is niche marketing of regional and organic food. Several retail chains already cooperate with agricultural producers and offer certain sales areas within their markets for the promotion of locally produced groceries. In the Frankfurt area, both Rewe and Tegut have created spaces within their hypermarkets for local farmers selling their asparagus during the season. The aim of the retailers is to set themselves apart from other providers by broadening the diversity of their assortment and creating non-standard points of sale (POS) and points of difference (POD).

6 Food Accessibility

Taken the horizon of the year 2050, the focus cannot only be on micro-economic aspects such as business administration of the individual players or the total supply chain but must also include macro-economic aspects such as global access to food, sustainability and environmental justice. The Food and Agricultural Organization FAO (2013) and the EU Commission (EU 2013) estimate an additional demand for food, due to growing population, of about 40 % until 2050, while the availability of farmland will stagnate or even decline for several reasons. Of course, Thomas Malthus (1798) already predicted a growing gap between supply and demand, but he could not anticipate the tremendous technological development in agriculture. Some countries – even Communist China – promote the purchase of arable land in developing countries by globally acting agricultural suppliers in order to prevent shortages (Table 1).

| Table 1: Percentage of Agricultural Land Transfer |
|-------|-----------------|
| Papua-New Guinea | 90 % to Malaysia |
| Gabon | 74 % to Singapore |
| Mozambique | 69 % to South Africa |
| Ukraine | 66 % to the USA |
| Uruguay | 51 % to Argentina |
| Tanzania | 45 % to Sweden |

Source: Jamann 2013
This “land grabbing” usually only shifts the problem from one country to another, often worsening the situation of those countries which are already unable to feed their own population because they cannot afford the high prices – even of financially very vulnerable world markets.

On the other hand, about 40 % of the world harvest is lost on the level of agricultural production and manufacturing or wasted during distribution and by the consumers in rich countries. Therefore, the Food and Agricultural Organization of the United Nations and the EU Commission have initiated various research projects such as FUSIONS or FoRWaRd geared towards optimising the handling of food. FoRWaRd, for example, interviewed partners at all stages of the supply chain as well as food banks and charities about the deficits in know-how seen by the interviewees (http://foodrecovery.eu). Within two years, various proposals for improvements have been presented on the Internet, including:

- an awareness video shown in schools/universities/business;
- an e-learning handbook with 20 modules covering the entire supply chain in order to identify problems and best practices;
- a mini-game targeted at youngsters which is based on learning by fun;
- an Internet platform for the exchange of food stuff aimed at bringing together surplus and demand in order to support underprivileged people.

A zero version will be available on the Internet by the end of June 2014.

What has become clear, not only by FoRWaRd, FUSIONS, SAVE FOOD, and other similar projects, is that public awareness about food waste has considerably increased since 2012. It can be assumed that, in the future, the topic of “avoidance of food waste” will become an integral part of Corporate Social Responsibility. Interestingly, Prince (2014) explained the rise of Aldi and Lidl with the following statement published in the Daily Mail: “The sight of a superstore stuffed with thousands of lines feels decadent, while Lidl and Aldi with their smallish buildings and modest ranges seem positively intimate. Shoppers are tired of expansive advertising campaigns which only mean that we end up with more than we can chew and wasting a shameful amount of food.”

Similarly to the introduction of tracing/tracking, insights into consumer expectations such as the well-being of animals must, step by step, become part of the basic knowledge of retailers. The cooperative company “Westfleisch” was a pioneer in this field by integrating criteria such as animal welfare, environmental protection, sustainability, and regionality of products in their development strategies (see Fig. 2).

Corporate Social Responsibility will have to find a balance between short-term economics and long-term ethical, ecological and social concerns, both on the level of global acquisition and distribution by means of new cooperation patterns within the supply chain and on national, regional and local levels by achieving a fair balance between those who can afford adequate consumption and those who are underprivileged.

Technical tools to speed up this process are social networks on the Internet. The Facebook

![Fig. 2: Westfleisch Criteria: Target Fulfilment](image_url)

Source: Hallier 2011b, p. 126
community, for example, exceeds the population of the most populous country in the world and information is spread at zero cost all around the globe. Given the rapid development in retail business after World War II, it can also bring back a dialogue between consumers and food providers.

7 Outlook

The major innovation cycles in the retail sector usually last around 25 years (Hallier 2004). However, within these long-term strategic cycles there are always tactical counter-cycles created by individual companies. If the trend goes towards self-service, some count on more service and vice versa. While one company outsources functions, another one integrates activities from others. There is never a common concept used by all – because one of the main functions of retail is to differentiate according to individual wishes and needs. Bernie Brookes, Chief Executive Officer of the Australian Myer Holdings, is quoted in Retail Asia (Tian 2014) with the following statement on retail strategies: “Retail today is not a one-trick pony. At times you have to have a cost focus, then an infrastructure focus – at the moment we focus a digital customer interface.”

Nevertheless, two points are worth mentioning:

While from 1990 to 2010 there was a trend among retailers to expand to as many countries as possible, in the past four years major companies have retreated from some of their former target countries, among them even Walmart, Ahold, Carrefour, Tesco.

Another point is category management by joint international ECR partnerships. The concept of ECR (Efficient Consumer Response) was developed by “category captains” (leading manufacturers of soft drinks, washing powder, etc.) and big retailers. The shelves were “optimised” according to the age groups of consumers living in the vicinity of the respective stores and according to their average potential spending. The idea was to create a big volume for the category captains and to decrease costs per sales unit by big shipments of the main products. However, it was not considered that the same system was applied by all the big competitors and in the medium run one store would look like the other since they would be designed according to the same computer calculations (Hallier 1997; Hallier 1999). To get out of this dilemma, retail companies have to create differentiation against competitors by developing individual solutions (strategies based on local details). Using again the example of the UK, another statement from the Daily Mail is quoted: “(In contrast to the big players Sainsbury, Tesco, ASDA, and Morrisons) for X-mas 2012 Aldi launched in the UK the “Roly Poly” free-range bronze turkey, reared near the ancient Thetford Forest, which straddles Suffolk and Norfolk, in portable sheds with access to grassy fields. At 37.99 pounds per turkey, Aldi undercut the competition by 10 pounds.” (Prince 2014) This fits well with the global strategy of Aldi as a price leader and suits local taste in the UK.

Note

1) Orgainvent is a traceability system which was created in reaction to the “mad cow disease” (BSE) crisis in the UK in 1994; GlobalGAP was established pro-actively for fruit and vegetables to guarantee good agricultural practice, and QS (quality assurance system) represents an extension to Orgainvent that includes other meat products.

References


Sustainable Food Systems and EU Policies

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The objectives of this article are to analyze key EU policies in view of their performance to achieve a shift towards a more sustainable food system and to hint at options for more coherent policies. The term “food system” is thereby helpful as it fosters a holistic view on the sustainability debate. We conclude that a substantial reallocation of EU funds among different policy domains is needed: first of all, within the Common Agricultural Policy (CAP) from direct payments to agri-environmental and animal welfare policies in the second pillar of the CAP. And second, potentially also from the budget of the CAP, or at least the current measures of the CAP, towards policies aiming at more sustainable consumption patterns, such as education, awareness raising campaigns, consumer information and research. Finally, the current bioenergy policy needs to be revised and support for biofuels from crops be ended.1