

Towards Implementing the ETP Food for Life

Developing Lead Markets for the Food Industry

Response from the ETP Food for Life to the questions raised by the Commission in their letter of the 28th July 2006.

The European market share of global food and drink export markets is shrinking and there is increasing market penetration by non-EU manufactured food products. Overall profitability of this major sector of the EU economy has not been maintained at a sufficient level to keep or expand investment, notably in R&D. The solution to the generation of new market opportunities can only occur in the development of value-added products that consumers wish to purchase. An analysis of solutions to this dilemma, undertaken within the auspices of the ETP “Food for Life”, shows that a much greater investment in R&D is of fundamental importance.

Other factors also contribute to the current competitive position of the EU industries. Consumer confidence in the market has been affected by a series of health scares, real and imaginary, and this has inevitably led to an even greater regulatory burden on the sector. EU Regulations are increasing rapidly and are very specialised and complex. There are an excessive number of prescriptive controls to which the industry has had to respond, further limiting its investment options, and placing large additional costs on product development. The SME sector is particularly affected by such controls.

The principal issues that will need to be addressed in the near future relate to those markets where EU companies have a lead (vertical issues) and those that apply to the sector overall (horizontal issues).

Vertical issues

Lead markets in the European industry include foods with health benefits, food processing technologies, and the diversity of foods with high added value. The competitive position needs strengthening through RTD initiatives that will ensure:

- The provision of mechanisms to ensure a major Europe-wide, co-ordinated, investment by national funding and other bodies, in diet and health related research.
- a major initiative in the area of “omics” technologies, with particular emphasis on nutrition, bioactive substances in food and food toxicology in order to better understand function at the sites of action and improve the scientific basis for defining benefit and risk.
- a better understanding of the material sciences in relation to mouth feel and bioavailability and the transfer of this knowledge to food processing operations.

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- The application of technologies at various scales (from molecular to meso- and macroscale) to food systems to improve organoleptic properties of foods and to develop new packaging materials.
- The development of flexible manufacturing systems for personalised foods that integrate knowledge on the interface between production technology, product characteristics and personal needs
- Encouraging Member States' Health Authorities to issue research tenders for the development of foods that can be used to prevent and manage disease risks more effectively, as well as for the development of food with novel bioactive compounds that can be used to treat or manage disease.
- Development of *joint public-private technology initiatives (JTI's)* in:
 1. Diet and health: Identification of the effect of genotypic variations on dietary risks and benefits
 2. Quantitative application of omics to the determination of dose-response curves of food substances at nutritionally-relevant doses.
 3. Food processing technologies for healthy diets with high quality and convenience.

Horizontal issues

Overall the competitive position of the sector would be improved by:

- Ensuring multidisciplinary, consumer science research are networked in centres of excellence across Europe in order to provide the critical mass of skill necessary to address the challenge of understanding consumer's needs effectively.
- The setting up of mechanisms to improve the organisation and management of the EU agro-food sector within the highly competitive, dynamic and global food chain sector.
- The development of mechanisms to encourage supply chain efficiency and consolidation of production at the raw material level together with a joined-up strategy between the agriculture and food sectors
- Ensuring that common research activities are developed within related ETP's particularly in the areas of production of safe and nutritious food, and sustainable production systems.
- Further ensuring that the CAP does not result in exporters paying higher prices for raw materials than are found on the world market.
- The development of a major research programme to assess risks more rigorously and more precisely

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- Support for an initiative on the Global Harmonisation of Food Regulations and Legislation now being led by the EFFoST
- A better understanding of the mechanisms leading to pathogenicity in food micro-organisms.
- Ensuring that there is effective liaison between national authorities and the Commission to maximise synergy and exchanges of information and best practice and minimise unnecessary duplication at the national level.
- Widening the definition of SMEs to encompass more medium-sized firms who have successful experience of innovation but which are currently excluded from any process of Community support.
- The development of new formats for technology transfer and training on a national and transnational level.
- The active promotion of a global patent law

Background: The European food and drink industry is the largest manufacturing industry in Europe. It transforms over 70% of the EU production of agricultural raw materials, employs over 4 million people mainly within the SME sector, and had a turnover of 840 billion euros in 2005. The European agro-food industry is a leading global exporter [45 billion euros, with a positive trade balance of 5.8 billion euros, in 2005] and results in significant value addition with considerable scope for economic growth within new EU Member States and Candidate Countries, and in the development of regional economies. Nonetheless, the European food and drink sector is lagging behind its major competitors. Production value, value addition and labour productivity are all deteriorating over time¹.

Consumers are demanding more choice and quality in the food they purchase but price and convenience of purchase still remains the most important factor in their choice. While improvements in quality and increased diversity of choice will determine future markets, efficiency of production and marketing will still be required to ensure affordability, with the exception of consumers whose purchasing power is high and for whom convenience of food preparation and novelty are important determinants of choice. The market for added-value food products aimed at specific consumer demands, particularly those that benefit health and well-being, has enormous potential for growth.

Whilst Europe is a world leader in innovation and investment in some areas of food science and technology, such as process engineering, there is increasing competition from low wage cost countries across all areas except those where the consumer demand required for market penetration can be provided through a high R&D input (e.g. nutraceuticals, low calorie products, flexible processing, novel processing methods etc.) or where authenticity is the main selling point (regional, fair trade, organic etc.). RTD will be a very important component of future innovation and, thereby, avoid the situation where increasingly greater amounts of value-added products are imported into the EU, or compete more effectively with EU-export markets.

There is a positive interest in products that are perceived to ensure their health and quality of life is improved. Increasingly consumers are demanding food that is ethically produced, authentic environmentally sustainable and reliable. These demands are able to be met by the

¹ (p15, CIAA Benchmarking Report 2006, http://www.ciaa.be/documents/brochures/Benchmarking_Report_FINAL.pdf)

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application of appropriate technology but *substantial RTD investment is required if they are to be achieved.*

The RTD opportunities are clear *but there are serious constraints in ensuring their delivery.* Central to the challenges facing the sector's future competitiveness is the ability to identify and promote technologies acceptable to consumers in a sector that is acutely sensitive to their preferences. Negative consumer anxieties over the utilisation of some technologies in the food chain, particularly those that involve the use of chemicals in food production, will otherwise pose a formidable barrier to the introduction of new technologies. *Improved understanding of the European consumers' demands, and integration of this information with technical R&D, will be a crucial factor for competitiveness.*

The food sector faces unique and difficult challenges to meet these demands. They will only be effectively solved if there is a more holistic and integrated plan covering all aspects of the production and distribution system, together with regulation. *This will require urgent action at the political level both at the member state and EU level.*

A. The RTD Challenges for the Future Competitiveness of the Food Sector.

A1. Potential of Technologies.

A1.1 Ensuring that the healthy choice is the easy choice for consumers.

Understanding how consumer's demands for food products are influenced by:

- their cultural and religious background,
- their perceptions of quality and safety,
- their desire to repeat purchases of new food products,
- how foods affect satiety and well-being,

are all scientific issues that are little understood at present. The consumer sciences (e.g. social science, psychology, and physiology), together with sensory perception and market analysis are in a position to address these challenges. Consumers would benefit from the provision of a more diverse range of food choices that better satisfy their requirements, whilst food manufacturers would develop products with a greater certainty of market success in a world-wide context.

Multidisciplinary, consumer science research in centres of excellence networked across Europe, are essential to understand and exploit the opportunities for producers in improving the match of products and technologies with consumer acceptance, and to ensure the free movement of food products within the EU. These centres need to be at the forefront of developments in the cognitive and neurological sciences to ensure that there is a seamless interaction between the biological sciences and humanities, a key aim of the European Research Area.

A1.2 Delivering a healthy diet.

There is a serious and growing incidence of obesity in both the developed and developing countries. Diet-related diseases such as diabetes, cardiovascular disease (CVD), cancer and cognitive decline are increasing in incidence, with obesity a common major risk factor in the aetiology of many of these age-related chronic diseases. The growing evidence that sub-

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populations metabolise foods differently, and with differing health outcomes, provide promising market opportunities for *food products that improve the personal health status rather than being targeted at the population as a whole.*

Three research areas need to be addressed with priority, e.g. the relation of diet and dietary compounds to brain function, immune & gastro-intestinal function and metabolic function (obesity and associated metabolic disorders). Achievement of these goals will require R&D that is at the cutting edge of the life and material sciences. Central to this requirement is a major initiative in the area of “omics” technologies, with particular emphasis on nutrition, bioactive substances in food and food toxicology. These technologies have the power to eventually provide information, at levels that are nutritionally relevant, about the mechanism of actions of individual bioactive substances in foods, according to genotype. Such data will enable a new generation of food products to be developed that will be beneficial to health for specific groups of consumers without posing unacceptable risks.

The development of food products in Europe with health promoting or disease preventing effects would deliver a market potential that is presently not being met by any major world-wide competitor, and stimulate growth in a field where the EU has already shown important innovation. Such research could also lead to the identification and production of pharmacologically-active food chemicals or specific foods useful in the prevention (or even treatment) of disease at comparatively low cost. However, the present regulatory situation for food supplements and functional foods pose substantial barriers to such developments, and full utilisation of the opportunities require that there is a radical change in attitudes to research, IP, finance *and regulation.*

Present forecasts expect the food market potential to grow by at least 15% per annum from the world-wide value of sales in 1995 of 16.1 billion US\$. Japan currently leads the market (5.7bn US\$). Both Japan and the US have a notably more relaxed regulatory system in the novel food area.

A1.3 Developing value-added food products with superior quality, convenience, availability and affordability.

An increase in market choice will provide the consumer with *the right type of food (i.e. that required by the individual) at the right time and in the right place* through technological inputs. Technological developments can add value to a product as well as decrease the costs of

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production providing enhanced market flexibility. Innovative processes, value-added products, new marketing concepts, novel ways of selling products and innovation in cooperation between the production and supply chain to create products targeted at consumer demands should all ensure that the consumer is provided with *safe products possessing the required characteristics (sensory, ethical, nutritious etc.) at maximum convenience and at an affordable price.*

Consumers are increasingly wishing to purchase foods that are healthy, nutritious and will help them to control energy intake. Most reduced-fat products now on the market do not have the same consumer appeal as the full fat or calorie versions. The technological challenges to be overcome include:

- understanding the factors that both determine sensory properties and influence satiety,
- reducing metabolic energy conversion without producing adverse physiological effects,
- a better understanding of the material sciences in relation to mouth feel and bioavailability, in order to develop new product formulations that deliver the same characteristics as those found in the traditional products.
- The development of flexible manufacturing systems for personalised foods that integrate knowledge on the interface between production technology, product characteristics and personal needs incl. health status.

The application of nano- and micro-technology to food systems and packaging is being actively studied and useful novel products that meet some of the needs listed above may be expected in the future.

A1.4 Assuring safe foods that consumers can trust.

Whilst the food manufacturing industry has a good record for the production of safe food, there continues to be the threat of contamination by pathogenic and food spoiling micro organisms, as well as chemical toxicants. This area is of widespread and growing concern to consumers throughout Europe. The Commission annual report on Rapid Alerts announced that 27% of all alerts were concerning potentially pathogenic micro-organisms.

Research is needed to enable:

- detection of contamination in real time,

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- better understanding of the mechanisms leading to pathogenicity which could allow new safe organisms to be introduced into food to antagonise the growth of pathogens in the food or the GI tract, and to develop early warning of newly-emerging pathogens,
- development of tracing methods for use throughout the food chain to enable sources of contamination to be identified and quickly removed from supply,
- development of new methods for the more accurate assessment of risk particularly from exposures to low doses (see **Regulation**, below).

“Omics” technologies will be utilised in some of the solutions to these challenges.

A1.5 Achieving sustainable production.

Presently the production, manufacture and distribution of food in Europe is of major environmental impact in terms of energy and water use, as well as in the fields of waste disposal and recycling. All these issues are of major political attention at the national and regional level, and are of increasing concern to industry as production constraints and costs continue to grow. Solutions to the problems are not currently easy to solve, given the present pressures on industry to supply a diverse, safe and secure food supply. In addition the regulatory environment in the Member States, where variation in political priorities affect the relative competitiveness of relevant production methods, and often make import of food from third countries, produced without consideration of sustainability, the economically optimal solution for retailers, is an issue that will need to be addressed.

As an essential *first stage* of this goal it will be important to:

- undertake dynamic modelling and scenario studies to identify critical areas where priority action needs to be taken to reduce inputs and minimise environmental impact in balance with economic growth and fair social conditions

As costs of production across all stages of food production and distribution are likely to escalate with the impact of global warming, reduction of water supply and increased fossil fuel costs, this is an area which will pose an increasing challenge to the European food production system and where technological solutions will have to be applied to maintain competitiveness.

A.2. Issues affecting the development and market take-up of new products and services.

A characteristic of the food industry has been its ability to innovate in production to efficiently supply a reliable, secure source of food. However, the challenges it is likely to face in the future are greater than ever. *Many countries [notably China, India, Brazil] with lower wage costs, less regulation and sources of raw materials are now in a position to compete effectively in the production of value-added goods.*

Demographic changes in Europe, the lack of overall growth in population, rapid changes in consumer demands and the pressure to eat healthily and even more safely, all create particular challenges to the sector. In addition it will be necessary to address the social demands of environmental protection and sustainability. As even more developing countries are able to meet the manufacturing standards and efficiency of output at lower cost, European innovativeness will be put to the test.

Food manufacturing encompasses the whole cycle of creation, production, distribution and end-of-life treatment of products and services in order to realise a consumer-driven innovation system. In line with all manufacturing industries in Europe, the food sector will have to adapt its production in a flexible and rapid manner, and encourage more localised, small-scale manufacturing if it is to compete with changing circumstances and situations. *New technologies will have to be combined with new business practices.* The organisation and management of the sector is still far from optimal, especially within SMEs, which generally lack the necessary expertise to manage the highly competitive, dynamic and global food chain sector.

The agriculture sector is a long way from adapting itself to meet the growing demand for a consistent supply of high quality, locally-produced food, at low cost. In particular there is an urgent need to improve the methods for dialogue with SMEs, to identify which R&D and training needs are relevant for the SMEs and to ensure that these needs are given appropriate attention in academic institutions. Attention should also be given to the creation of awareness of the importance of innovation for the SMEs – especially in the new Member States – and to foster the generation of their needs in R&D. The key issue is to systematically ensure opportunities for researchers to listen to the views of people working in

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SMEs (knowledge exchange), rather than just lecturing to them (knowledge transfer). In this respect the use of publishing knowledge in formats, which are more user-friendly for the industry, e.g. the best practice guides, short research summaries for industry use etc., should be encouraged. This could be further enhanced by benchmarking the success of publicly funded R&D more in terms of the number of jobs created in companies that implement the research results, giving correspondingly less weight to the number of research papers.

Improved efficiency in the agriculture sector is not assisted by the Common Agricultural Policy, CAP. The protection and subsidy offered to producers by EU or national subsidies divides producers from their market, distorts price signals and masks inefficiency. The move towards support for quality rather than production will only partially overcome these basic distortions in the market. Although reform processes are underway, it is important to ensure that, where reform is not providing access to competitive prices, alternative instruments [such as inward processing that enable importation of raw materials at world market prices] are allowed for processing and subsequent re-exportation.

Few EU countries effectively encourage supply chain efficiency and consolidation of production at the raw material level, which would improve stability of income and thus of supply. The European agri-food production system needs to be encouraged to “join up” by encouraging producers, manufacturers and distributors to work through *common management structures* that take into account all aspects of the management challenges in a food network. Greater emphasis on the more direct selling of food, if encouraged, would gradually eliminate those intermediaries who increase price without necessarily increasing efficiency. *Such policies would benefit the SME sector particularly.*

Efficient management of the food chain should work towards a reduction in the complexity of the chain, implement best practice more widely and undertake strategic analysis to evaluate best practice for future scenarios and the likely economic benefits they would produce if implemented. Management support tools are also necessary to build consumer trust such as the development of information systems for tracking and tracing, and food quality control. These systems must be effectively tailored to the needs of the very large agri-food SME sector to ensure effective innovation through the development of high quality chains and networks with regional diversity.

A.3 Impact on investment in relevant technologies.

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Adoption of the above recommendations would create a more favourable investment climate. However, the R&D resources of the food industry are almost exclusively focused on the technical/practical aspects of innovation, how to produce food and drink with the characteristics and price/quality ratio demanded by the consumers. In contrast it is unable to invest the resources that are necessary to provide the more fundamental scientific knowledge to define which characteristics should be aimed at. The competition is intense, patent protection is often weak and the legislative process for marketing products with fundamentally new properties can be too extended and excessively expensive even for large companies¹, not to mention SMEs.

This situation demands *a major investment in research by the public sector* if the opportunities highlighted within the ETP Food for Life are to be fully realised. This is especially important in the diet and health area, where fundamental advances in understanding the relationship of diet and dietary components in health and disease are crucial prerequisites for any commercial innovation. Nonetheless, whilst individual national administrations and funding bodies have often initiated programmes in relevant longer-term research, the investment is invariably too low, poorly-coordinated, and the development of effective international co-operation very limited.

The Finnish Government, recognising the essentiality of more effective co-operation than that already occurring under EU Framework Programmes, has actively sought to promote international cooperation under its Research Programme on Food, Nutrition and Health (ELVIRA). But examples of this are too infrequent amongst the Member States and are certainly not a condition of support².

The Commission's ERA-NET initiative is a good start, there being an ERA-NET in Food Safety, but it should be rapidly expanded and delivery actively monitored. The ETP Food for Life will facilitate the development of an ERA-NET in Nutrition/Food and Health early in FP7. ERA-NETs are seen as an important means of developing an effective Mirror Group for this ETP.

Areas of food research that are suitable for the FP7 proposal for *joint public-private technology initiatives (JTI's)* include:

² As part of the national promotion and consultation on the ETP Food for Life, national food platforms will be established in Austria, Czech Republic, Denmark, Hungary, Italy, Russia and Turkey, in addition to Poland and The Netherlands. These will be proactively networked and may result in similar activity to ELVIRA.

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- Diet and health: Identification of the effect of genotypic variations on dietary risks and benefits
- Quantitative application of omics to the determination of dose-response curves of food substances at nutritionally-relevant doses.
- Food processing technologies for healthy diets with high quality and convenience

Each of these topics would satisfy the general criteria that have been set as essential for these initiatives i.e. societal benefit, high impact on competitiveness, and lack of existing instruments.

Future competitiveness in the sector will also require the recruitment of people who are trained appropriately. Food science and technology research and training in Europe are insufficiently focussed on areas that will be needed in future by industry. The future for manufacturing clearly lies in the adoption of cross-cutting technologies and the part of the industry that is research sensitive is already drawing heavily on training in other disciplines to advance technologically. *However, there is a very big gap between the technological skills in the large, multinational companies and the medium and small manufacturers* which rely heavily on graduates from food science and technology departments³. Mechanisms need to be developed, which ensure that young graduates get practical skills with food manufacturers and get an understanding of the way-of-thinking of the industry, irrespective of whether they will pursue a career in this industry or elsewhere. In addition too many food research institutes in Europe are concentrating on research that will not directly lead to or underpin innovation, or are duplicating work going on elsewhere in a more innovative environment, or that industry itself is better able to exploit.

The public research sector must be dynamic, flexible and world class. At present it is inflexible in many EU countries. There should be more exchange between centres of higher education and the industry they service, a situation encouraged within the **People** pillar of FP7. More scholarships should be offered where the student is based in industry but pursues a research agenda agreed between industry and the centres of higher education. Universities and institutes should provide opportunities for on-job training to industry, and

³ ETP Food for Life regards Communication, Training, Technology Transfer as the most important areas of its operation since failure here will obviate successful innovation within the remaining, science-driven areas of its activity. Professional organisations such as the European Federation of Food Science and Technology, EFFoST, and the Food Chemistry Division of the European Association of Chemical and Molecular Sciences, EuCheMS are at the heart of the ETP's activities. A major effort in the establishment of an industry-led structured technology transfer activity is currently ongoing through a collective of Food Federations and the CIAA.

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research workers in the public sector urgently need entrepreneurship training. European-wide programmes of accreditation must be developed to ensure that standards are uniformly high across the EU.

There are also situations within Europe whereby the brightest students actively seek to gain employment in the public sector, rather than to take jobs in industry because of the relatively good working conditions and security offered by the public sector. Such attitudes will need to change. The Leonardo da Vinci Programme needs to consider not just the promotion of world class talent but must also ensure that the environment in which young research workers are trained is one that satisfies these criteria. The Marie Curie Fellowship Programme can also make a good contribution to industry-academia exchange. However current procedures and conditions severely hamper easy access to this scheme, especially for the SMEs in the food sector.

B. Specific Issues.

B1. Regulation of markets and services.

Food products and their composition are one of the most heavily regulated industrial sectors and in too many instances *regulations do not favour innovation*. EU Regulations have become highly specialised, complex and excessive. There are few signs that there is any pressure to lift the regulatory burden or to critically examine the effectiveness of regulations on informing the consumer, or on improving the public health. The pace and amount of regulation have considerably increased administrative burdens and costs of compliance which must deter entrepreneurs from exploiting technological innovation, unless the market opportunities are sufficiently large. The investment required is such that the multinational companies are able to meet the challenges but the smaller industries are clearly disadvantaged.

In many cases the critical step is the interface between the company and the local administration, which is responsible for ensuring that the regulation fulfils its purpose, e.g. to ensure food safety. However, improved design of the administrative procedures, based on a constructive dialogue involving both the SMEs and the relevant public administrators, can provide very substantial reductions in efforts for the companies and thus their costs, and/or make a regulation more effective without increasing the burden. *Systematic implementation of best practice for practical administration of trans-national regulations will provide substantial competitive advantages to European SMEs with no loss of safety or quality of the food.*

In addition regulations applied in the food chain have been used to impede trade both within EU Member States and in the global context. *Non-tariff trade barriers are common in the sector and are more easily introduced when there is disagreement over the scientific basis of assessing hazards and risk, and when non-scientific arguments are used to justify regulation.* The EU Novel Food Regulations need urgent reconsideration since they exemplify many of the arguments adduced here for the negative impact of regulation on innovation. The EU should ensure that an initiative on the Global Harmonisation of Food Regulations and Legislation, like the one led by the EFFoST, is successfully promoted and implemented.

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Risk assessment involves the process of hazard assessment in which the potential hazard is characterised by evaluating the potential of a chemical to cause adverse effects in humans, taking into account all the available data on toxicity and the biological mechanisms leading to toxicity. Invariably this process is subjective since the evidence base is more often than not provided as a result of *animal experiments using doses that are rarely those to which humans are likely to be exposed*.

Because the process is one where there is bound to be uncertainty, this is reduced by applying uncertainty factors to arrive at doses that are likely to result in no adverse effects in humans. In this way any potential risk is minimised. This invariably means regulations are framed to ensure that any residual risk is very low when compared to other risks. The process dedicates vast resources to the process of hazard assessment of individual chemicals but not to the process of determining *the likely risk when consumed as part of a food*.

From the consumer perspective, the inability of experts to provide meaningful ranking of risks, especially those that are assessed to be very low, causes concerns and distrust, where any discoveries of violations of the regulations are seen as indications that the system is unsafe, whether any objective risk to the consumer has been identified or not. This has led to a situation where the majority of consumers rely on trust-related indicators of food quality and consider natural, unprocessed foods from local sources wholesome and safe, whilst non-organic, manufactured foods of unknown origin are met with suspicion and seen as less valuable.

The concept that most foods, or constituents of those foods, reflect a balance of risk *versus* benefit⁴ is a concept that most consumers find normal and logical. However, they are generally not provided with the relevant information to make informed choices, because the regulatory process focuses almost entirely on risk estimation and reduction, and not on benefit assessment and its enhancement. The science necessary to assess any benefit has not developed to the extent of that for assessing risks, but the increasing focus on improving the healthy properties of foods means this is becoming more and more important.

The Commission urgently needs to ensure that there is:

⁴ This concept is regularly applied in the pharmaceutical sector and ETP Food for Life will organise joint “food/pharma” workshops to transfer and exchange experience and best practice in this and other [e.g. nanoparticle safety assessment] areas.

- a constant review of existing legislation in order to identify where it can be simplified, and if it is producing a non-level playing field in terms of international competitiveness, or is disproportionate in controlling the real risks that specific regulations are attempting to control.
- Harmonization and simplifying approval procedures for products covering more than 1 legislative area i.e. food, health/medicine, veterinary medicine, environment etc.
- introduction/ development of systematic optimisation of the administrative practice at the local level, to minimise burdens on companies and enhance the effectiveness of the legislation, across cultures and types of companies.
- harmonisation of those areas where there are still national differences in approaches considering alternatives to legislation wherever possible.
- no legislation is introduced:
 - before a thorough impact assessment has been undertaken (including the effect on third country exports),
 - that will lead to differing interpretations,
 - that is disproportionate to the declared objective or risk,
 - that is not based on thorough scientific rationale,
 - that entails divergence from existing international standards,

and that enforcement of EU law is as effective as possible throughout the EU.

These actions need to be complemented with a major research programme to assess risks more rigorously and more precisely.

B2. Product standardisation.

Consumer confidence has responded positively to the development of a growing series of voluntary “charter” schemes that certify the authenticity of a product, or indicate that the product has been produced under conditions that give the consumer assurance of the quality stated, four of which have been officially recognised at the EU level: PDO, PGI, TSG and organic. Further action needs to be taken to standardise more of these schemes across Europe in order to provide additional quality assurance, and to develop methods that *independently guarantee* the product is what it claims to be. Any product standardisation

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criteria should be based solely on ensuring that consumers are accurately and clearly informed about the nature of the product.

Whenever necessary new quality standards should be introduced that will favour the cross border movement of foods and ensure consumer trust in the products. The process of setting standards must not be protracted and mechanisms to be adopted must be efficient, while the standards must still be sufficiently strict to provide clear distinction from anonymous products, to ensure they are not perceived by consumers as just a marketing gimmick.

B3. Intellectual property issues.

Food producers are rarely able to utilise patent rules in ensuring market protection for technological developments, since it is very difficult to enforce patents on production technology, and the food as such is rarely patentable. Where patent protection is possible e.g. foods that contain previously unknown constituents, the introduction of such products is fraught with difficulties, both legislative and in terms of consumer concerns. Consequently they can only be considered for market development by the multi-national companies whose resources permit the large development costs to be absorbed. SME's are generally unable to enter into such investment commitments. The only IP protection that is generally available and used across the food sector is trademark protection. However, often a trademark does not provide effective protection against "me-too" products that tend to appear shortly after any successful introduction of an innovative food or drink product, substantially limiting the time available to recover all the expenses associated with the innovation and introduction of the new product. This is the primary reason why the sector is unable to finance the basic research behind innovation, in contrast to e.g. the pharmaceutical or electronic industries,

Where opportunities for patent protection exist the problem is complicated by the lack of a global patent law and the development of this should be a high priority for the Commission.

B4. Public procurement.

EU public procurement policies should set the lead for all public procurement policies in Member States. Consideration should be given to how best they can ensure that the goals of support for environmentally-friendly and healthy food production, forms a component of any

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tendering process and procurement. Some member states already have such guidelines, such as support for conversion to organic food in public catering or nutritional quality requirements for school food, but they tend to be limited to special sectors and are variable even within a country.

There is a need to exchange best practice in these areas so that variation between different parts of Europe can be minimised.

One area where much more attention could be given to driving the demand for innovative goods is if health authorities in the Member States were to issue research tenders, or in other ways sponsor the development of foods that can be used to prevent and manage disease risks more effectively, or where natural components of the food chain can be used to treat or manage disease. Diet and lifestyle are the means of choice to improve/ maintain the health status of the consumer. In this context foods could be developed for hospitals or homes for the elderly, with sensory properties that would encourage relevant consumers to increase their energy intake, while schools could benefit from foods that enhance attention and alertness. Such an involvement could result in great cost-benefit savings in the public health care sector.

B5 Availability of risk capital.

The proposed Entrepreneurship and Innovation Sub-programme (EIP) of the Competitiveness and Innovation Programme, CIP, that will run alongside FP7 is to be supported through the European Investment Fund (EIF). The promotion of venture capital financing for SMEs with high growth potential needs to be carefully adapted so that SMEs in the agro-food sector are not excluded. The definition of SMEs needs to be extended to encompass more medium-sized firms who have successful experience of innovation but which are currently excluded from any process of support. The problems specific to this sector need to be addressed through a dedicated set of initiatives since the definition of what constitutes “high growth potential” is unclear at present.

There continues to be a strong case for ensuring that EU Structural Funds drive the innovation agenda. The ‘Joint European resources for micro to medium enterprises initiative (Jeremie)’ supported by the EIB and the EIF, will enable Member States to use part of their Structural Fund Allocation for the purpose of funding small enterprises. Technical and

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organisational assistance, venture capital and business angel investments and guarantees are all envisaged. Nonetheless it is unclear how this initiative will work in practice to ensure the SME *food* sector takes full advantage of the scheme when previous initiatives have not been that successful.

On the other hand, if publicly supported research is successful in providing more definitive understanding of the links between food and health, both positive (functional foods) and negative (food safety), then the publication of this basic knowledge will enable a large number of companies to develop new improved products each in their own area of expertise, The factors mentioned above which make it difficult for EU companies to develop this basic knowledge in-house, also mean that they are well positioned to carry out the final steps of technical development and marketing, where the ability to quickly establish a range of “me-too” products will be a positive factor in the global competition.

C. Ongoing activities within the ETP.

At present the only activity undertaken to address the issues raised above has been to consult with the industry to comment on the issues raised or to bring to general attention other issues that are impeding progress in the sector. However in the coming 15 months, during which the SRA and IP will be published, it is intended to:

- initiate discussions with other stakeholders to obtain their reactions,
- raise the issues at stakeholder national consultation meetings being organised to comment on the ETP's Stakeholders' SRA, and
- organise a debate with relevant DGs in the Commission and the Industry, Research and Energy Committee (ITRE) of the European Parliament to highlight the specific issues facing the sector and what action needs to be taken.
- organise a workshop on how to improve joint public-private support for innovation promotion in the food sector.

C1. Initiate discussions with other stakeholder communities to obtain their reactions.

Contacts have additionally been made with the coordinators of all relevant FP6 projects [IPs, NoEs, STREPs and SSAs] to seek their expert inputs, as a partnership and as individual project partners, and also with large national projects, professional organisations and networks. In addition, specific sectors, such as aquaculture, the cold chain, nanotechnology and fruit and vegetable juices, have been approached for inputs since it is recognised that the SSRA does not yet fully reflect their importance. The European beverage market is rapidly evolving, with juice and juice drink producers responding to consumers' desire for a *healthy lifestyle*. Healthy eating campaigns are encouraging consumers to move from sugary carbonated drinks to more *nutritious, added-value alternatives* and these will be significant drivers of innovation.

C2. Raise the issues at stakeholder national consultation meetings being organised to comment on the ETP's Stakeholders' SRA, SSRA.

The ETP's SSRA was developed by some 80 experts drawn mainly from industry and academia and presented to 150 stakeholders at an Expert Consultation held in Brussels last February. However, the support, commitment and expert opinion of stakeholders from all

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parts of Europe will be necessary if the platform is to be truly European and is able to address the challenges and opportunities of all regions of the continent.

The ETP SSRA is currently being promoted across Europe through 26 National Consultations and a Regional Promotion for Central/Eastern Europe that will involve EU Member States, Candidate Countries, European Neighbourhood States and West Balkan Countries, and which will be jointly funded by the Central European Initiative, CEI. At these meetings the background and content of the SSRA will be presented, the requirements of the consultation process described [inputs to the ETP website, www.ciaa.be], opinions exchanged and questions answered. As mentioned earlier, a number of countries have established National Food Platforms as a direct result of these consultations and these will greatly facilitate interactions between stakeholders at national level and enhance [two-way] communication with the ETP.

ETP Food for Life places great importance on its openness and transparency and shown by the appointment of a dedicated member of its Horizontal Activities WG to take responsibility for these issues. All consultation inputs will trigger a response describing the process to be adopted for considering the opinion and indicating ways in which the response might support the activities of the ETP. A statement of the ETP's openness and transparency policy is posted on the ETP website <http://etp.ciaa.be>.

C3. Organise a debate with relevant DGs in the Commission and the Industry, Research and Energy Committee (ITRE) of the European Parliament.

Policymakers at national and regional level are key stakeholders of this, and all ETPs. Links with MEPs have already been developed in concert with the other five ETPs⁵ within the Knowledge-based Bio-economy (KBBE) sector and these links will be further exploited in order to organise the most effective and cost-effective activities. ETP Food for Life has common areas of activity with ETP Plants for the Future, particularly in the areas of production of safe and nutritious food, and sustainable production systems and close contacts at all levels will be maintained in order to maximise synergy and exchanges of information and best practice and minimise unnecessary duplication.

⁵ *Plants for the Future, Animal Breeding, Global Animal Health, Industrial Biotechnology, Innovative and Sustainable Use of Forest Resources.* Contacts are also being developed with other relevant ETPs such as *Nanoscience for Health*, and with the *European Action Plan on Diet, Physical Activity and Health*.