

## Scientific background and state of the art

For European youth, decisions related to food consumption are of increasing importance for health reasons (diabetes 2, overweight; Roos 2005), and quality of life. A sustainable nutrition is environmentally friendly, healthy, satisfying nutritional needs and contributing to life quality. Food supply should correspond with daily life routines, and enable socio-cultural diversity (Eberle et al. 2006). Organic food and agriculture are promoted by the EU in the Action Plan of 2004, and several European countries have public goals for increased organic production and consumption. It may be efficient to design policies for increased organic consumption such as public organic food procurement (POP) with children and youth as the target group. When youth are taught about organic food and sustainable nutrition, they will get used to these products and be inclined to consume more organic food when they establish their own households. POP serving outlets may (ironically) be characterised as “captive catering” (Mikkelsen 2004), because the consumers’ choice is usually quite restricted. However, an “eat what is offered!” system implies an important inherent opportunity to influence the consumers in a desirable direction. Meals served in day-care institutions, schools and universities are central public food serving outlets for young people. School meals are very differently organised in the four countries participating in iPOPY; IT, FI, NO and DK. In IT and FI, all public schools serve a warm lunch. IT school meals are deliberately utilised to communicate and experience food culture, local traditions and food quality. 93% of the caterers use organic food at least weekly and > 40% (weight) of all acquired products are organic. In FI, school meals emphasise nutritional education (Etusivu 2007), and organic food is served in about 100 schools participating in a “Steps to Organic Food” programme (Luomukeskus 2007). Additionally, many day-care institutions and schools use locally produced organic food. In DK and NO, pupils are used to bringing their own sandwiches for lunch, and milk and fruit (conventional and organic) may be bought as a subscription service. In NO 2006, only 12% subscribed to the recently introduced fruit service, whereas 60% subscribed to the well established milk service (Utdanningsdirektoratet 2006). In DK, organic food is commonly used in day-care institutions, and some schools are currently introducing (partly organic) school meals. School meals are generally of great public interest. The IT parliament is discussing a national law enforcing organic food in all day-caring institutes and paediatric hospitals, and demanding organic meals on the menus in all school canteens. NO authorities want to increase the quality of school meals as well as the national consumption of organic food. In DK, the school meal is also rapidly changing, and health and organic food issues are frequently discussed.

In all iPOPY-countries, the responsibility of the public catering sector to buy organic is recognised, and POP *policies* are developed. Increased POP also reflects the increasing importance of “out of home” food intake. Public authorities and food chain actors become increasingly more responsible for the public health, and nutritional policies are evolving (Eberle 2006). Pioneer POP projects were often bottom-up initiated (e.g. by parents), whereas current projects tend to be top-down initiated. Three levels of action can be identified within POP: Definite public institutions serving organic food, such as schools and kindergartens; coordinated actions within a district or region, administrated or supported by public authorities; and actions on a national level where POP becomes integrated within other sector policies such as environment and health. A national level decision to increase the organic consumption should have a substantial influence on the definite local food procurement policies. However, a national level decision is often tackled in inappropriate, even contra-productive ways when implemented in local policies (Kristensen et al. 2007). Public food catering has to compete with other needs in public budgets, making it difficult to prioritise (premium priced) organic food (Mikkola & Bergström 2007). In conclusion, knowledge is required about strategies and instruments that may increase the efficiency of national POP policies when these are implemented on a local level. To achieve an effective POP, the functioning of organic food and *supply chains* should be improved, to ensure an uninterrupted two-way flow of organic products and information between suppliers and customers (Scott & Westbrook 1991). Food chains include all steps between the farmers and the consumer’s plate, whereas the term supply chain is used for the part of the food chain that goes from the farmer to the kitchen, or the processing unit. The relationships between chain actors impact

the quality and volume of agricultural produce, as well as the supply chain development (Mikkola 2007; Mikkola & Seppänen 2006). Choosing suppliers by price may be detrimental for the quality of meals and services. The price focus generates increased competition, and induces catering companies to streamline their costs. Instead, an efficient POP process should encourage the development of sustainable partnerships between supply chain actors, and agreements about specific requirements for organic products in public procurement food chains (e.g. package size) should be made. A driver for increased organic consumption is the possibility to order large volumes because meals are consumed in a planned schedule. These topics require further studies, especially of best practice cases in various countries. Whereas organic food production, processing and distribution are regulated by international standards, there are no international standards for certification of food serving outlets using organic produce. Germany is the only European country where participation in a control and certification system is mandatory for food serving outlets (Strassner et al. 2004). Certification of a food outlet may act both as a driver (marketing, communication) and a constraint (costs, bureaucracy). It is important to clarify when and why it is a driver, and how the most serious constraints linked to certification can be avoided. Food preferences are influenced by individual attitudes and values, but also by structural, organisational and material factors, such as the way the food is prepared and presented and food related information. All these factors contribute to the framing of consumer choice (Warde & Martens 1998), and knowledge of them is required to design successful menus with organic ingredients. The potential of POP for youth to increase the consumption of organic food is dependent on the young consumers' satisfaction. Their current eating environment is highly diverse. A panoply of convenient food choices is offered by fast food, ethnic cuisines and 'phood' (functional foods being increasingly impacted by the pharmaceutical industry; Dixon et al. 2006). The captive catering of day caring institutions and school canteens, where the meals often reflect the culturally 'normal' average diet, may serve as an arena to counteract the convenience influence. In FI and IT, school meals are deliberately utilised to teach about food, nutrition and health (Etusivu 2007, Morgan & Sonnino 2005). It is of interest to study how POP can be supported by participatory actions, which can stimulate learning processes and knowledge construction. Policymakers are increasingly concerned with the health related challenges facing European youth (obesity, diabetes 2 etc.). POP policies can induce changes in menus and nutrition. To save costs and keep the budget with organic premium prices, menu planners may apply "less meat more vegetable" strategies, which comply well with current nutritional advice. Introduction of organic food has been found to induce a changed dietary pattern (O'Doherty et al 2001), and "green" caterers serve healthier meals than their non-green counterparts (Mikkelsen et al 2006). POP increases the implementation of nutrition and food polices at local institutions (DFFE 2005), and POP polices are associated with healthier eating patterns in schools (Vereecken 2005).

The proposed project will combine studies of drivers and constraints for public organic food procurement with studies of best practice cases, to generate structured knowledge and develop comprehensive POP strategies which are practically and contextually adaptive. Four work packages will study policies for increased organic consumption, supply chain management and certification issues, consumers' preferences, and actual health related eating habits. Schools and day-caring institutions will be the most important cases to study, but other cases may also be relevant.

### **Main aim**

The main aim of iPOP is to study how increased consumption of organic food may be achieved by the implementation of strategies and instruments used for public procurement of organic food in serving outlets for young people. Supply chain management, procedures for certification of serving outlets, stakeholders' perceptions and participation as well as the potential of organic food in relation to health and obesity risks will be analysed.

### **Specific objectives**

1. To identify and verify experiences of POP for young people in all participating countries, and to make them accessible.
2. To analyse and suggest strategies for policy implementations that may increase the consumption of organic products in public food serving outlets for youth.

3. To identify various best management practices in relevant supply chains, including innovative approaches such as development of sustainable relationships between chain actors, and to reveal and assess the constraints for POP (e.g. premium prices, supply chain bottle necks).
4. To explore the preferences, perceptions, practices and learning of young people introduced to organic food through POP.
5. To identify the extent to which POP might act as a driver for healthy eating among young people, and to explore the potential of participatory actions to support the introduction of organic food in public food serving outlets for youth and to increase the knowledge construction about sustainable nutrition.

#### **Project relevance, relation to the call**

The iPOPY project addresses topic 3 in the CORE organic call: *Innovative marketing strategies – identification of successful marketing methods, local markets*; especially item 2: *Public procurement of food. Provision of organic food to public institutions – best practices and constraints*. The studies of supply chains are also relevant for item 1: *Impact of large-scale conversion (...) - consequences for (...) the supply chain*, and consumer studies are relevant for item 4: *Marketing and consumer behaviour – benefits in terms of environment and health, knowledge based consumer choices and branding strategies*. Possible health impacts of organic food are relevant for the topic 2 of the CORE organic call, where nutritional benefits of organic food are asked for.

#### **Project description. Participants, work packages, management and user involvement**

Research institutes and universities from DK, FI, IT and NO participate in the iPOPY consortium and the Research Council of Norway (RCN) will also fund research service from Germany (DE). The collaboration is organised in five work packages (WP's), and the participation of co-workers in each WP is shown in Appendix B. The project management will be carried out by Dr. Anne-Kristin Løes (NO). The relevance of project deliverables for practical users will be ensured by national user groups, where *lead users* personally engaged in POP serving outlets for youth and children will participate. Contact will also be ensured to other stakeholders (producers, certification bodies, politicians etc.) by national and transnational workshops. Communication within the project will be achieved by mail, phone, meetings, workshops and a web based team room at [www.kunnskapsnettverk.no](http://www.kunnskapsnettverk.no).

#### **Specific aims and initial statements of each WP**

For each WP, initial statements are formulated, reflecting our current understanding based on the scientific literature and our common expertise. These statements indicate the orientation of the research. At least one paper for a peer-reviewed scientific journal will be produced in each WP.  
WP1: Project management, conclusions and knowledge dissemination, lead by Anne-K. Løes, Norway  
 WP1 will ensure that the project is carried out as described within the assigned time period and funding. A common analytical framework will be produced, where relevant factors for the degree of success of POP can be discussed and evaluated by all WPs, as well as a scientific paper synthesising results from WP2-5. WP1 will provide relevant information about the project in the national languages, take care of the project website, produce a regular web-based newsletter for POP stakeholders, and ensure that results are presented at national and international conferences. The selected cases studied in WP2-5 will be described in a common database maintained by WP1, to provide instructive examples. WP1 will arrange open seminars, nationally and internationally, where results are presented to important user groups and stakeholders, and networks are built.

Initial statements: \* Public procurement of organic food in serving outlets for young people is an efficient way to increase the consumption of organic food.

\* Difficulties linked to supply chain management, lack of knowledge and economic resources among important stakeholders, and complex public regulations hamper an increased use of organic food in public food serving outlets for young people.

WP2: Policy analysis, lead by Niels H. Kristensen, Denmark

WP2 will analyse national and relevant local policies and instruments used in DK, FI, IT and NO to introduce or increase the share of organic food in public food serving outlets for youth, and to evaluate the outcome of these policies and instruments. This includes top-down policies as well as more “soft” regulatory, informational, and network initiatives that bring together civil society, market and national policies. The measure for evaluation will be the extension of the organic food consumption in each

country, especially within POP for young people. WP2 will also assess how or to what extent general public aims such as sustainability, public health and food culture are integrated in POP policies, and analyse under what conditions POP will be a successful strategy to increase the consumption of organic food in a country. These findings construct the research basis for policy recommendations that will be developed for relevant decision makers in touch with POP.

Initial statements: \* National and regional POP policies tend to have unclear goals and means.

\* National POP policies and instruments have a higher impact when political decision makers, proactive bureaucracies, as well as supply chain actors are involved and engaged.

\* Comparisons between countries and the transnational project cooperation will produce knowledge useful in the design of new strategies and instruments on European, national and local levels.

Research methods: The research will be based on quantitative and qualitative data. Guidelines for data collection will be made and data collected by partners in DK, NO, FI and IT, in coordination with other WPs. Data collection comprises literature, questionnaires, in depth- and group interviews with key persons and decision makers in POP projects, public programmes and in the supply chains. All WP2 partners will be supervised by the WP2 leader to produce a national report on POP policies and strategic challenges for the development of POP. A comparative analysis will define strong and weak points in the identified (national, regional, local) strategies.

WP3: Supply chain management and certification, lead by Stefano Bocchi & Roberto Spigarolo, Italy

WP3 will analyse the relative success and failure of various relevant supply chains in DK, FI, IT and NO, and reveal critical constraints for their efficiency. The key criteria for appointing a supplier will be identified, and we will study the impact of such criteria on the development of relationships between supply chain members. A number of case studies will be analysed to identify supply chain models and their structure. Specific requirements for organic products in public procurement systems (e.g. package size, quality) will be discussed. WP3 will also review and analyse procedures for certification of food serving outlets in DK, FI, IT, and NO; and in DE as a reference country, to propose certification procedures adapted to general European conditions.

Initial statements:

\* The organic food industry is emerging, and hence POP is confronted with organisational and informational problems, lack of experience, and lack of motivation among stakeholders. Many problems can be overcome when POP gets more common, and supply chain management adapts to this. However, the early introduction of organic food in any serving outlet needs specific support (financial, qualification of key actors).

\* Understanding and acceptance of the organic food concept among the catering staff is crucial for the degree of success in each case of POP.

\* Specific requirements for organic products in public procurement supply chains will facilitate an efficient supply of organic food.

\* Common elements relevant for the certification of public procurement kitchens/catering units serving organic food may be identified on a European level.

Research methods: Supply chain information will be collected by questionnaires among catering staff, producer organisations etc. Trends and expectations will be analysed by in-depth and focus group interviews with relevant stakeholders. Specific requirements for organic products will be discussed with relevant stakeholders. Relevant information about the procedures for certification will be reviewed by the national WP3 representative in DK, FI, IT and NO, after an initial review of the situation in DE and a list of relevant questions has been produced by C. Strassner. Interviews with relevant stakeholders will be required to reveal attitudes and strategies towards certification.

WP4: Consumer perceptions, practices and learning, lead by Gun Roos, Norway

WP4 will provide new insights into young people's perceptions and practices related to organic food. Based on relevant cases in DK, FI, IT and NO, WP4 will study how organic ingredients are incorporated into meals in the school setting, and how this is communicated to the consumers. WP4 will explore the perceptions, satisfaction and practices linked to procurement and consumption of organic food among pupils, parents and professionals. Eating organic meals is not only a matter of nutrition, eating habits or menu design. It is also a matter of learning how to relate to sustainability. Organic food is connected to peoples' conception of sustainability, and WP4 will explore how young

people's understandings of the ecological and social impacts of organic food are influenced by the introduction of organic food and relevant education in public serving outlets for youth.

Initial statements:

- \* Selected organic ingredients are incorporated into traditional school meals rather than offering completely organic meals.
- \* Participation of pupils and stakeholders in the shaping of organic meals increases the acceptance, implementation, consumption and learning potential linked to organic food in the school setting.
- \* The introduction of organic school meals, accompanied by education, develops conceptions and a positive understanding of sustainability and healthy nutrition.
- \* The captive catering approach in POP for youth may be an incentive for high quality meals and participatory learning processes, when appropriate external conditions are provided.

Research methods: WP4 will analyse young consumers' perceptions and practices related to organic food and procurement of organic ingredients for school meals in relevant cases. Data will be collected mainly by qualitative methods, including focus group interviews with pupils, interviews with key informants and observations in the school setting.

WP5: Nutrition and health, lead by Bent Egberg Mikkelsen, Denmark

Positive attitudes towards organic food are associated with healthier menus in worksite canteens, but it remains to be proven that POP policy in fact contributes to a healthier eating pattern. WP5 will explore whether organic conversion of public food systems will lead to changed dietary patterns that in turn may result in healthier eating among young consumers in school settings.

Initial statements: \*The implementation phase of POP in schools is often associated with adoption of general food and nutrition policies.

\*The implementation phase of POP in schools is often associated with comprehensive redesign of menus to overcome premium prices on organic products.

\*School based food and nutrition policies support healthier eating patterns.

\*Processes of change related to implementation of healthy eating and POP initiatives in schools are associated with learning processes among key stakeholders that might support healthier eating.

Research methods: Food practices before and after introduction of organic food will be studied by interviewing catering managers in DK, FI, IT, NO and DE in a web-based questionnaire. A pre/post test will be performed on Danish cases (= schools in Copenhagen, for the time being introducing organic food as a part of the school meal service) and controls (non-organic school meals), studied during the introduction period of organic food in the case schools. Comparable schools with respect to location and size will be selected. Finally, focus group interviews will be performed with 5-6<sup>th</sup> graders in Norway and Denmark to reveal attitudes, values and beliefs related to health, nutrition and sustainability.

**Dissemination plan and list of milestones**

All WPs will produce at least one paper for a peer-reviewed scientific journal. Relevant journals are e.g. International Journal of Consumer Studies, Public Health Nutrition and British Food Journal. In addition, several papers will be produced in trade journals in each country. The project will arrange open workshops and participate in relevant international and national conferences. An important instrument to disseminate the acquired knowledge will be an electronic newsletter published 5-6 times per year, with parallel editions in English and each national language.

<u>Time</u>	<u>Milestone</u>
June 07	Project starts. WP leaders include co-workers in detailed planning.
Sept 07	1st project meeting, develop first version of common analytical framework.
Nov 07	National user groups established. Project web page and 1 <sup>st</sup> newsletter launched.
Feb 08	Project meeting with open seminar, Italy. Focus WP3.
June 08	Reporting year 1, revision of project plans.
Nov 08	Project meeting with open seminar, Finland. Focus WP4.
March 09	Project meeting with open seminar, Germany. Focus WP3.
June 09	Reporting year 2, revision of project plans.
Oct 09	Preliminary conclusions, focus on WP2 and WP5. Open seminars, Denmark.

Feb 10 Drafts of manuscripts of scientific papers submitted to all co-workers.  
May 10 Final project meeting with nat. user group representatives. Open seminar, Norway.  
June 10 All publications submitted. Project evaluation.

### **Ecological, social and economic relevance**

Increased organic consumption will decrease the negative environmental impact of agriculture. Hence, more efficient POP policies will contribute to reduce negative environmental impacts, which is of high **ecological** relevance. POP has a large potential for spin-off products such as partnerships between food serving outlets and local farms or educational gardens. Strengthened relationships between supply chain actors will increase food quality and innovation. If clear relations can be found between the use of organic food in schools, nutrition policies and healthier eating habits, overweight and other serious health problems may be reduced. All these items have a clear **social** relevance. The market opportunities of new and innovative organic products in the food service area are substantial. The market for organic food will increase by better POP, which is of high **economic** relevance.

### **The added value of this collaboration**

The project will produce important knowledge for the design of future European POP policies. Until now, trans-national research in public procurement systems for organic food has been virtually non-existent, and research in food systems serving young people is limited. The only way to achieve a critical mass of POP cases is to include several countries in a trans-national project. Similarly, researchers from various countries should collaborate to exchange experiences and methodology to ensure a required scientific quality. By joining researchers from a range of institutes, various scientific approaches will meet and a true interdisciplinary work will arise. This is favourable for the complex and diverse research topics of the proposed project. There is a great need for networks between POP researchers. Existing European networks are at a practical level, i.e. Biofach "Out of home"-meetings and the Nordic "Healthcat" network. Since innovation in this area seems to be driven more by practise than by scientific evidence, there is clear rationale for stronger cooperation, and for creating evidence and scientific knowledge through studies of best practices in relevant cases.

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