Bioforsk Report
Vol. 4 No. 7 2009
iPOPY discussion paper

# Constellations of public organic food procurement for youth

## An interdisciplinary analytical tool

Benjamin Nölting, Anne-Kristin Løes, Carola Strassner
Bioforsk Organic Food and Farming Division

www.bioforsk.no

**Main office**
Frederik A. Dahls vei 20,
N-1432 Ås
Norway
Cell-phone: +47 40 60 41 00
Fax: +47 63 00 92 10
post@bioforsk.no

**Bioforsk Organic**
Tingvoll Gard
N-6630 Tingvoll
Norway
Cell-phone: + 47 452 30 200
Fax: + 47 71 53 44 05
okologisk@bioforsk.no

| *Title:* |
|---|
| Constellations of public organic food procurement for youth |
| *Author(s):* |
| Benjamin Nölting, Anne-Kristin Løes, Carola Strassner |



| *Date:* | *Availability:* | *Project No.:* | *Archive No.:* |
|---|---|---|---|
| January 19, 2009 | Open | 2010099 | 631 |
| *Report No.:* | *ISBN-no.:* | *Number of pages:* | *Number of appendix:* |
| 4 (7) 2009 | 978-82-17-00464-6 | 30 | 1 |



| *Employer:* | *Contact person:* |
|---|---|
| Bioforsk Organic | Anne-Kristin Løes |



| *Stikkord/Keywords:* | *Fagområde/Field of work:* |
|---|---|
| Økologisk mat, barn, unge mennesker, offentlig matservering, tverrfaglig forskning, skolemat, konstellasjonsanalyse / | Økologisk landbruk / |
| Organic food, youth, public procurement, interdisciplinary research, school meal systems, constellation analysis | Food policy and nutrition |



*Sammendrag:*

I forskningsprosjektet "Innovative løsninger for økologisk mat i offentlige serveringstilbud til barn og unge" (iPOPY) er det mange ulike perspektiver. Ulike land, og forskere med ulik faglig bakgrunn deltar i undersøkelsene. Dette er en nødvendig betingelse for en helhetlig forståelse av offentlige matserveringstilbud til ungdom. I et slikt prosjekt er det en utfordring å integrere resultatene fra ulike arbeidsområder. Da trenger vi en tverrfaglig tilnærming som kan stimulere til diskusjon. I denne rapporten er en mulig metode beskrevet, *konstellasjonsanalyse*. I denne arbeidsmetoden forutsettes det at sosiale, fysisk/biologiske og tekniske elementer og utviklingsforløp er nært sammenvevd, og at man må ta hensyn til heterogeniteten i disse elementene og utviklingsforløpene nå de skal analyseres. Konstellasjonsanalysen kan tjene som en brobygger mellom arbeidspakkene og et redskap for å integrere prosjektresultater. Arbeidspakke 1 har ansvaret for å trekke konklusjoner fra prosjektet som helhet. I rapporten er foreløpige resultat av en konstellasjons-analyse av et (økologisk) skolemat-system vist som eksempel. I et vedlegg er det vist en ordliste (iPOPY glossary) som forklarer og avgrenser bruken av viktige begrep i prosjektet. Denne ordlisten vil bli videre utviklet, og kan senere bli publisert i annen form.

Picture frontpage: B. Nölting

*Summary:*

The research project "innovative Public Organic food Procurement for Youth" (iPOPY) combines a multitude of national and disciplinary perspectives: a necessary condition for a holistic understanding of public organic food procurement for youth (POPY). One challenge of such a research agenda lies in the integration of diverse results. This calls for an interdisciplinary research approach that facilitates discussion about results generated in different work packages (WP). This report sketches the methodological tool *constellation analysis*, one of the basic assumptions of which is that technical, natural and social elements and developments are closely intertwined and can only be analysed by taking into account their heterogeneity. Constellation analysis may serve as a bridging concept for the integration and synthesis of project results, which is a task of WP 1. This report presents preliminary results from an explorative constellation analysis of (organic) school meals. In the appendix, a list of definitions with regard to POPY is provided – the iPOPY glossary, which may later be further developed and published separately.

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|---|---|
| *Land/Country:* | Norway |
| *Fylke/County:* | Møre og Romsdal |
| *Kommune/Municipality:* | Tingvoll |
| *Sted/Lokalitet:* | Tingvoll |

Godkjent / Approved
Research Director, Bioforsk Organic

Atle Wibe

Prosjektleder / Project leader

Anne-Kristin Løes

# Contents



**List of abbreviations**

| | |
|---|---|
| CAP | Common Agricultural Policy of the EU |
| DK | Denmark |
| ESD | Education for Sustainable Development |
| FI | Finland |
| iPOPY | innovative Public Organic food Procurement for Youth |
| IT | Italy |
| NO | Norway |
| P(O)P | Public (Organic) food Procurement |
| POPY | Public organic food Procurement for Youth |
| WP | Work package |

# 1. Introduction: The purpose of an interdisciplinary research tool

Organic farming and organic food production have traditionally been linked to bottom-up processes. However, in recent years many European countries have developed public aims for increased organic food production and consumption. Further, public bodies recognise the responsibility of the public sector to buy organic, both as an efficient tool for achieving these aims and as a role model. As a consequence, top-down policies are gradually being developed on public procurement of organic food at the national, regional, and local levels. Public procurement of organic food is a significant and growing factor in the organic food market, as well as being a dynamic sector gaining momentum in Europe.

In this context, it is the main aim of the research project "Innovative Public Organic Food Procurement for Youth" (iPOPY) to study how strategies and instruments for public procurement of organic food in food-serving outlets for young people may increase the consumption of organic food. School meal systems are the most important channel of public food provision for youth, but other ways such as kindergartens, universities, and the army are also of interest. We have chosen to focus on the youth because they are the future food buyers. The challenge is to raise awareness about organic food and sustainable nutrition in this new generation of consumers, which may have a deep impact on increasing their interest in food quality, environmental and health issues. iPOPY is one of eight transnational pilot projects funded by the CORE Organic funding body network (www.coreorganic.org).

Public organic food procurement for youth (POPY) is a complex phenomenon comprising a multitude of elements and aspects, including regulatory frameworks; policies; decision-making processes at European, national, regional and local levels; supply chain management; certification procedures and standards; perceptions, preferences, and practices of young users; learning processes; food and health policies of schools and other food-serving outlets as well as the potential of organic food to reduce health risks (e.g. obesity). POPY programs may vary considerably across European countries and regions, all having specific traditions and development paths which have led to the accumulation of a rich source of experience, best practice and innovations.

The specific objectives of the iPOPY project according to the proposal are:

1. To identify and verify POP experiences 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 patterns 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 activities to support the introduction of organic food in public food-serving outlets for youth and to increase the building of knowledge about sustainable nutrition.

In order to analyse these topics, the iPOPY project adopts a double analytical perspective. On the one hand, it analyses thematic aspects of drivers and constraints of POPY. This research is organised in four explorative work packages (WPs), each with a disciplinary focus, studying

a) political strategies and instruments with regard to POPY as well as their implementation (WP 2),
b) supply chain management and procedures for certification of serving outlets (WP 3),
c) users' and stakeholders' perceptions and participation (WP 4) as well as

d) the potential of organic food in relation to health and obesity risks (WP 5).

On the other hand, the project investigates and compares different national and regional systems as well as specific cases of POPY in Italy, Finland, Denmark, and Norway. This helps to reveal critical points and best practice in the countries, allows for a better understanding of their respective POPY systems, and points out particular problems and opportunities in each country.

Thus, the iPOPY project combines thematic and disciplinary studies on POPY with comparison of national studies. The researchers are from Norway, Finland, Denmark, Italy as well as Germany and have diverse disciplinary backgrounds. The comparison of different countries and best practice cases as well as the integration of diverse disciplinary perspectives enhance the analytical understanding of POPY and stimulate new visions that can contribute towards sustainable food systems. The multitude of national and disciplinary perspectives is a strength of the iPOPY project, because it implies the possibility of combining results from different disciplines and comparing different POPY experiences and structures between countries, regions and cases. This is a necessary condition for a holistic understanding of POPY in order to generate structured knowledge and develop comprehensive strategies.

The challenge of such a research agenda lies in the integration of diverse empirical and theoretical findings. This calls for an interdisciplinary research approach that facilitates discussion of results generated in the different WPs and for different countries. This report intends to sketch out a methodological tool that will serve as a bridging concept for the synthesis of project results. It is the task of WP 1 to integrate results from different WPs of iPOPY, each using methodological and theoretical approaches appropriate for answering their respective research questions.

The report sketches the background of POPY in the four countries (chapter 2). Central terms required for conducting the iPOPY research are defined in chapter 3. In chapter 4, the method of constellation analysis is introduced. An analytical tool for interdisciplinary research in sustainability, technology and innovation studies, one of the basic assumptions of constellation analysis is that technical, natural and social developments and logics are closely intertwined in current societies and can only be analysed when taking this heterogeneity into account. Chapter 5 shows preliminary results from an explorative constellation analysis for a POPY constellation. The last chapter (6) reflects on further uses for this tool in the iPOPY project. In the appendix, a list of definitions with regard to POPY is provided.

We acknowledge the valuable contributions, comments, and criticisms from our iPOPY colleagues Matthias Koesling, Niels Heine Kristensen, Minna Mikkola, Bent Egberg Mikkelsen, Gun Roos, and Roberto Spigarolo.

# 2. Background regarding public organic food procurement for youth in four countries

For European youth, decisions related to food consumption are of increasing importance with regard to health risks such as diabetes 2 and overweight (ROOS 2005) as well as quality of life (MORGAN/SONNINO 2008). Sustainable nutrition is environmentally friendly, healthy, satisfies nutritional needs and contributes to life quality. Food supply should correspond with daily life routines, and foster socio-cultural diversity (EBERLE et al. 2006, p. 54). Organic food is one option for facilitating sustainable nutrition and environmentally friendly agriculture. The EU has recognised this potential and has been promoting organic food and agriculture with the Organic Action Plan of 2004 (European Commission 2004). Several European countries have public goals for increased organic food production and consumption.

In this social and political context, the iPOPY project investigates whether and how policies for public organic food procurement for children and youth might be an efficient instrument for increasing the overall consumption of organic food. The project identifies and develops innovative ways through which ever more public institutions procure ever more organic food for youth. Furthermore, youth is an especially interesting target group of POP, because they may learn about organic food and sustainable nutrition through these institutions and, as a consequence, be inclined to consume more organic food when they establish their own households. These learning processes could be enhanced via young people actually experiencing and consuming organic food in kindergartens, school canteens, university canteens etc. POPY serving outlets may in some cases (ironically) be characterised as “captive catering” (MIKKELSEN/et al. 2004), because young users’ choices can be quite restricted. However, an “eat what is offered!” system also implies an important opportunity to introduce young users to organic food. But reducing choice can only be one element of influencing young people in a desired direction. Other such elements include experiencing food in a variety of ways, good quality meals, motivated and skilled workers involved in food preparation, political conviction, reasonable price, etc.

So far, researchers have not analysed POPY and its effects extensively. Often, very little scientific knowledge is available about POPY concerning its various aspects as well as opportunities and restrictions. Hence, the iPOPY project conducts exploratory research on POPY to fill this gap.

In all iPOPY-countries (IT, FI, DK, NO), the responsibility of public institutions to buy organic is recognised by national and sometimes even regional and municipal policymakers. Increased POPY also reflects the increasing importance of “out of home” food intake. Public authorities are consequently becoming more and more sensitive about public health and nutritional questions and politicians are on the way towards evolving preliminary concepts for nutritional policy (EBERLE et al. 2006). Pioneer projects of organic food procurement have often been initiated bottom-up by parents, individual schools, municipalities etc., whereas current projects tend to be top-down, initiated by public authorities. Three levels of action can be identified within POP: definite public institutions serving organic food, such as schools and kindergartens; coordinated activities within a district or region, administrated or supported by public authorities; and programs, campaigns, etc. on a national level where POP becomes integrated within other policy sectors such as the environment, consumer protection, and health. Policy goals to increase organic consumption should have a substantial influence on local food procurement policies. However, national level decisions can often be implemented in inappropriate, even counter-productive, ways via local policies. Public food catering has to compete with other needs in public budgets, making it difficult to prioritise (premium-priced) organic food. 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 POPY, the functioning of organic food and supply chains as well as communication between suppliers and customers need to be improved. Food chains include all steps that food may travel between farms 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 are crucial for the quality and volume of agricultural produce (MIKKOLA/SEPPÄNEN 2006; MIKKOLA 2008a). Choosing suppliers only by price might 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 POPY process should focus on value for money and encourage the development of sustainable partnerships between supply chain actors. 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 of ordering and receiving large volumes, because meals are consumed according to a planned schedule and *en masse*. Whereas organic food production, processing and distribution are regulated by international standards, there are no such standards for certification of food-serving outlets using organic produce, and Germany is the first European country where participation in a control and certification system is compulsory for organic food serving outlets (STRASSNER et al. 2004, STRASSNER/LØES 2008).. Certification of a food outlet may in fact act as both 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.

On the side of the consumers, 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, presented, and linked to information about it. All these factors influence the "framing" of consumers' choices (WARDE/MARTENS 1998), and knowledge of them is required in order to design successful menus with organic ingredients. The potential of POPY to increase the consumption of organic food is dependent on young users' satisfaction and preferences. Their current eating environment is highly diverse. A panoply of convenient food choices is offered via conventional meals, fast food, ethnic cuisines, and functional foods. Captive catering in some day-care institutions and school canteens may offer sustainable nutrition; however, these meals have to be embedded into the culturally 'normal' average diet so as to be accepted. In Finland and Italy, school meals are deliberately utilised in order to teach about food, nutrition and health (Etusivu 2007; MORGAN/SONNINO 2007; MORGAN/SONNINO 2008). It would be interesting to study how POPY can be supported by participatory actions that can stimulate learning processes and knowledge creation.

Finally, policymakers are increasingly concerned with the health-related challenges facing European youth. POP policies can induce changes in menus and nutrition. To save costs and keep to a budget in the face of organic premium prices, menu planners may apply "less meat more vegetables" strategies, which are moreover in accord with current nutritional advice. Introduction of organic food has been found to induce changed dietary patterns (O'DOHERTY JENSEN/et al. 2001). There is empirical evidence from Denmark that organic caterers serve healthier menus than non-organic caterers. This is due to a higher degree of sensibility concerning health issues, better training of staff and the price premium on and the availability of organic produce, which steers caterers towards using more vegetables (MIKKELSEN/ELLE 2005; MIKKELSEN et al. 2006). POPY seems to be a way to promote the implementation of food and nutrition policies at local institutions (DFFE 2004), and food and nutrition policies have become associated with healthier eating patterns in schools (VEREECKEN et al. 2005).

POPY policy, supply chains, certification, users' perceptions, as well as nutrition and health can be structured in different ways. POPY varies considerably in the four countries analysed by iPOPY, as can be seen through the example of school meals, which have been described in their general context and with respect to the use of organic food served in primary and lower secondary schools in the four iPOPY countries (BOCCHI et al. 2008; HANSEN et al. 2008; LØES et al. 2008; MIKKOLA 2008b). The national context of school meals in each country determines the scope of organic food procurement. Against this institutional background, specific POPY "regimes" for school meals are in place. Highly different features of school meal systems are observable in IT, FI, DK, and NO, including differences in how organic products are included in the meals (NIELSEN et al. 2008 forthcoming).

In Italy and Finland, school meal systems are well established; all public schools serve a warm lunch. In Italy, the use of organic food in school meal systems has increased considerably over the last decade, linked to the increased emphasis on high-quality school meals. In 2006, 93 % of the caterers used organic food at least weekly and over 40 % (by weight) of all acquired products were organic (BOCCHI

et al. 2008). Supply chains for school meal catering have evolved, and high quality standards for school meals are pushing the use of organic ingredients further into the fore. This striving for high-quality school meals is complemented by educational programmes, aimed at reaching young aware consumers, explaining the value of organic and regional agriculture. School meals are deliberately utilised to create experiential and communicative situations about local culinary traditions and food quality (MORGAN/SONNINO 2007). Altogether, organic food is highly visible in the Italian school meal system (BOCCHI/et al. 2008), and the country can be seen as the pioneer of POPY in Europe (MORGAN/SONNINO 2008).

In Finland, 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, www.ekocentria.fi). The conventional meal system is the prevailing one, freely available for students as it is fully paid for by public funding (MIKKOLA 2008b). It is based on national dietary recommendations and a plate model describing meal standards and is considered to be both healthy and efficient. Hence, changes towards (more) organic school food do not have a high priority at the moment. Nevertheless, there are also moves being made towards sustainable catering in hundreds of schools throughout Finland, mainly due to the Education for Sustainable Development (ESD) programme and to the dedication of some municipalities, caterers and schools in trying to increase the use of organic/local food within the well-established and -managed public school meal systems. In the end, some experience has been had with the use of organic ingredients, which are slowly making their way into the customary Finnish system.

Unlike the Finnish and Italian systems, in Denmark and Norway the pupils are used to bringing their own lunch and getting milk at school through a subscription scheme. In Denmark some schools are currently introducing (partly organic) school meals, and organic food offered commonly used in day-care institutions. On the whole, the norm for Danish school meals is currently going through dynamic changes, and the demand for warm school meals is increasing. However, parents have to pay for lunches served at schools and a common meal-serving system has not yet been established. Hence, at this point the use of organic food in school meals depends on the initiative of local actors, a broad range of which are on the scene. Factors that may foster POPY in Denmark include a well-established market for organic food, a rise of private catering firms offering organic food, and some model projects and initiatives on the part of municipalities (HANSEN et al. 2008).

In Norway, the homemade packed lunch is well established, supplemented by milk and fruit subscription schemes. In some regions it is possible to purchase organic fruit and/or milk to serve in schools. Very few schools serve warm meals, and, if served, they usually have to be purchased. Whereas in 2005 60% of the pupils subscribed to the well-established milk service, only 12% subscribed to the recently introduced fruit service (Utdanningsdirektoratet 2006). Research in Norway has shown that pupils who would benefit most from an increased fruit intake (i.e. from low-income families) did not subscribe and that the serving of free fruit in schools led to a permanent increase in fruit intake, even after the period in which they were served free food (BERE/KLEPP 2005; BERE et al. 2007). Hence, since August 2007, all pupils in schools for 8$^{th}$ to 10$^{th}$ graders receive one piece of fruit daily without payment (LØES et al. 2008).

# 3. Terms and working definitions of the iPOPY project

Against the different national backgrounds described above, a common understanding of central terms is a prerequisite for interdisciplinary and transnational research. This section explains some terms and gives a working definition of POPY. These explanations and definitions may be elaborated further during the research process.

Morgan and Sonnino present one of the rare existing definitions with regard to school meals: one which has inspired our own work. In their words, a sustainable school meal service is one that

> delivers fresh and nutritious food; conceives healthy eating as part of a socially negotiated 'whole school' approach; and, wherever feasible, seeks to source the food as locally and as seasonally as possible. The most important vehicle for securing a sustainable school meals service is creative procurement policy, which takes a holistic view of the food chain because it recognizes that production and consumption need to be calibrated at the local level. (2007, p. 19)

**Public procurement** is the acquisition process of goods and services by the public authorities. Public procurement is usually organised by means of contractual arrangement after public competition and spans the whole life cycle from initial conception of the needs of the public service through to the end of the use of the assets or the end of a contract. Public procurement may be guided by the concept of "best value for money", which can be described as an optimal combination of whole life cost and quality to meet the customer's requirements (see e.g. Northern Ireland Government Department of Finance and Personnel 2002). The EU, European states, regions and municipalities as well as public administrations may have guidelines for public procurement (see e.g. European Parliament/European Council 2004). Morgan and Sonnino consider public procurement to be an untapped potential for sustainable development (MORGAN/SONNINO 2008).

**Public food procurement** means that public authorities purchase food in order to provide it to users in public settings, including day-care institutions, schools, the army, homes for the elderly etc. as well as in canteens for employees of public institutions. The food can be prepared locally at the place where the meals are served or in a centralised kitchen that has several food outlets. The catering service can be provided by public units, by enterprises that are owned by public institutions, or it can be outsourced to private firms. Such food service is financed totally or at least partially by public authorities, in the sense that at least some of the indirect costs for organising the food service are covered by public institutions. Users (e.g. children or their parents) might be charged for meals, which may in some cases reach a rather high share of their costs.

In the context of public procurement, **food** is understood as a "meal system" including all food, from single items such as milk and fruit to snacks and complete meals as well as drinks (school milk etc.), that is served or provided to young people at public institutions. This excludes all food and drinks that young people bring themselves (from home or bought in a nearby kiosk, fast-food outlet etc.). An environment of alternative food offerings can influence the development of public food procurement and has to be taken into consideration.

**Organic food** is defined by the EU-Regulations on organic farming (Regulation EEC N° 2092/91) and on organic production of animals (Regulation EC N° 1804/1999). From 2009 on, the revised EU-Regulation N° 834/2007 on organic production and labelling will come into force, replacing previously existing regulations. Organic food procurement means that the meal system contains organic produce, ranging in overall proportion from only one to a few organic ingredients to entirely organic meals that might even be certified as organic according to the EU-Regulation.
A central interest of iPOPY is the analysis of how organic food is implemented in the serving of food items or meals in school settings, especially primary and lower secondary schools. Public school meals are understood as institutionally prepared and/or served food or complete meals for school children.

The focus of the iPOPY project is on **youth**. The project concentrates mainly on pupils of school age from 5 to 16 years. However, the project may also include younger children from 3 years on (e.g. day-care institutions, kindergartens) or "older" youth, up to 25 years, such as students at high schools and universities.

Finally, the expression **innovative** refers to the fact that public organic food procurement may require specific new instruments and/or the combination of established instruments and new approaches. Such instruments may comprise laws and directives specifically adapted to the requirements of organic food procurement, standards and certification procedures, labelling, training, or qualification measures. New approaches may, for example, foster learning processes and experiences with regard to organic food and/or support the building of actor networks. Innovative public procurement pursues public goals, but should also try to be responsive to user needs and wants. This may require a new governance perspective in order to integrate diverse instruments and to cooperate with actor groups beyond the legal and fiscal responsibilities of public institutions.

Having explained these central terms, the iPOPY project uses the following **working definition** of public organic food procurement for youth (POPY):

> Public organic food procurement for youth comprises all activities with regard to procurement in public food services for children and young people up to 25 years in schools and other public institutions for youth, such as day-care centers, universities, hospitals, and military facilities. The meal system is organised and its costs are carried, at least partially, by the public institution in question. Youth, or their parents, may need to pay for the food, at least in part. The food contains organic products conforming to EU-Regulations on organic production.

Further explanations of important terms with regard to POPY, sustainable nutrition and stakeholders in the field of nutrition will be provided in the following sections. A comprehensive term list – the iPOPY glossary – is available in the annex.

# 4. The method of constellation analysis

Given the complex and highly variable background of POPY, there is a need for iPOPY to have a bridging concept and analytical tools to:

- stimulate discussion in the project across work packages, disciplines, and national experiences
- analyse interdependencies between the different aspects of POPY
- discern specific characteristics of the four countries with regard to the general structures of POPY
- synthesise results from different iPOPY work packages
- develop comprehensive measures and strategies for POPY.

For the synthesis task of WP 1, we have chosen the tool of **constellation analysis** as a bridging concept between results from rather differently focused explorative WPs. This tool will be explained in the following sections. A phenomenon such as POPY consists of heterogeneous elements that form a constellation. On the one hand, such a constellation is characterised by a certain degree of order. It relies on the relations and interdependencies between the elements and actors of the constellation in question. This order is not fixed but rather dynamic, without being completely instable or confusing. On the other hand, a constellation has to be analysed from different angles to capture its diversity and heterogeneity, thus requiring an interdisciplinary approach. The forms of expertise and knowledge brought to bear by those participating in a constellation analysis, though legitimate and informed, contribute only partial views of a larger picture that none would be able to draw on their own (SCHÖN et al. 2007)[1].

The basic idea of constellation analysis is to bring together various approaches, data sources, and forms of knowledge to create a picture of the constellation at large that can be shared by all of the participants involved, with the perspectives of various academic disciplines as well as those of various actors being brought together in a constructive way. Neither natural science nor social science or engineering can provide a single theory that is capable of satisfyingly explaining diverse aspects of heterogeneous phenomena. Therefore, constellation analysis assumes that there is no theoretical substantiation or explanation for an *a priori* ranking or prioritising of the heterogeneous elements of a constellation; in principle, they can all be of equal relevance. There is no leading discipline or theory that should structure a constellation beforehand. Only a representation of a specific constellation can illuminate the shades of relevance of each element in it with respect to the whole. Therefore, constellation analysis focuses on the relations between elements.

The methodological principles of constellation analysis comprise:

- a language intelligible to all participants of the research process;
- a graphical representation of the constellation, making use of the capability of graphical images to depict complex interrelations in a lucid way that enables different disciplinary perspectives and worldviews to correspond;
- a discursive character, because all participants have to agree on the relevance of any element in a constellation, as well as on the relevance of the relations among the elements in the graphical representation.

A constellation analysis is usually performed in three steps, which may be repeated. In the first step, the constellation is “mapped”. The participants accept beforehand that, in principle, every element of a constellation can be of equal relevance. Then, in the process of reconstructing a specific constellation, they have to identify and rank its most important elements as they see fit, arranging the elements in a graphical map that represents how the elements are related. Mapping is done using

[1] For more information see: www.konstellationsanalyse.de.

coloured index cards on a pin board. Various, previously defined symbols are used to represent the elements as well as the relations between them. Four types of elements are distinguished:

- actors (e.g. persons or groups),
- technical artefacts (e.g. cars, power stations, streets, kitchens),
- sign systems (e.g. laws, standards, current political or social concepts, customs),
- natural elements (e.g. air, water, plants, animals).

The types of elements are indicated by different symbols, as shown in Figure 1.

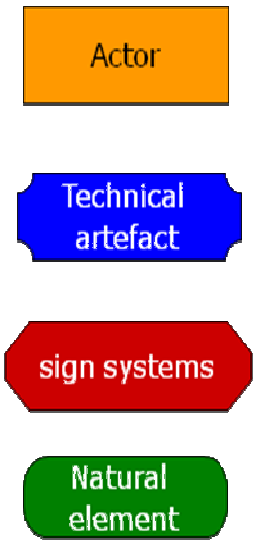


**Fig. 1:** Visualisation of the four types of elements used in a constellation analysis (SCHÖN et al. 2007)

In a second step, the functional principles and characteristics of the constellation are analysed and interpreted. For this purpose, the relations between elements or even clusters of elements can be specified and depicted as in Figure 2.

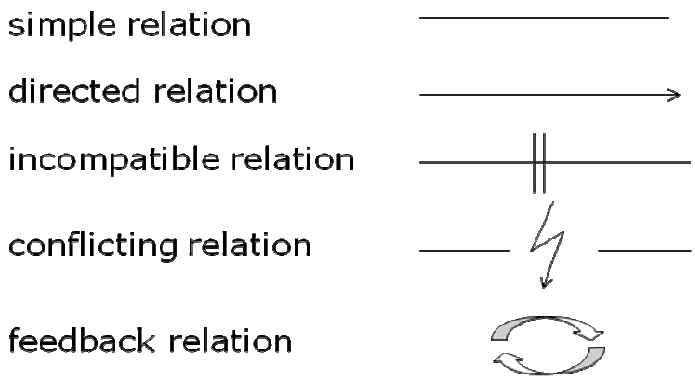


**Fig. 2:** Types of relations between elements

Further, so called sub-constellations that form a coherent section of the overall constellation can be identified, described in more detail and be given a name. Sub-constellations can be displayed or mapped in more detail by “zooming” them in. Finally, the dynamics that are at play the entire constellation are examined in a third step.

As shown, the method of the constellation analysis is based on visualising the constellations to be examined. The graphical representations form the starting point for bringing together expertise from

different academic disciplines and non-academic areas on equal level. They govern the interdisciplinary negotiating process about the best representation of reality. The constellation analysis itself does not provide any theoretical explanation for the structure of the constellation under investigation. Different disciplines, theories and experience-based knowledge are required for that. It may be useful to make different graphical representations to discuss alternative representations or interpretations of reality. The graphics pinpoint the basics, whereas verbal, detailed explanations are required to analyse the constellation in more detail.

The visualisation provides an overview over the entire constellation. Therefore, the group has to decide about priorities and has to select only the most important elements and relations for the mapping. Detailed constellation analyses in different fields of POPY may reveal specific development paths and variations, which can be compared through the graphical representations. Constellation analysis can help to link results and insights from different analyses and perspectives.

The iPOPY team started a constellation analysis with a common exercise during the first project meeting in September 2007. The iPOPY team collected possibly influential *actors* (on oval yellow cards) and *framework conditions* (on rectangular green cards) of organic school meals as an example of a POPY constellation. It discussed their relevance, agreed on central actors and framework conditions and mapped an organic school meal-constellation on a blackboard (Fig. 3). Due to limited time, the team used a simplified approach of constellation analysis by distinguishing only between actors and framework conditions which subsumed sign systems, technical artefacts and natural elements. As this map was generated in the first project meeting, it does not reflect any results from iPOPY research in the different work packages and countries.


**Figure 3:** Project discussion about iPOPY constellation

In a follow up-process, elements of the frame work conditions were assigned to the categories: sign systems, technical artefacts, and natural elements. The mapping and its verbal explanation were revised, advanced and commented from the team members. The next chapter displays the results of this explorative and preliminary mapping of a POPY constellation.

# 5. Results: Mapping the constellation of organic school meals

The constellation studied here was organic school meals in general, being a prominent part of POPY. In this section, we assign the elements of the organic-school-meal constellation to *actors* in the field of POPY and to *framework conditions* subsuming sign systems, technical artefacts, and natural elements. POPY is not decided and determined by one single actor, but rather by several actors, groups of actors and actor networks, all of whom influence and shape POPY. Moreover, framework conditions from very diverse societal sub-systems, such as food production, policy, education, media, and health care, are interwoven into the process and determine the room for manoeuvre of the actors involved, who may also reciprocally influence the conditions. Mapping facilitates identifying and describing such linkages and interplays. Further, such visualisation may reveal "blind spots", possible dynamics of the overall constellation and feedback loops between sub-constellations.

In the following sections we first describe and map the main actors of POPY; secondly, we describe the framework conditions involved. In a third step, both descriptions are integrated into a preliminary map of a very general POPY constellation with regard to (organic) school meals.

## 5.1 POPY actors and networks

A range of actors is involved in POPY. Some are collective actors, such as organisations, companies, municipalities and other administrations, while others are individuals, such as policy decision makers and users, which consist of children, youth and their immediate social environment, including parents, teachers, school nurses, and school administration.

These actors can act differently and play various roles with regard to POPY. They can:
- hamper, block, or object to POPY
- facilitate (support, champion, motivate)
- control (hygiene, labelling, certification etc.)
- finance
- regulate
- perform network management (organise, bring together actors, motivate them, moderate, overcome conflicts)
- substitute (evasion strategy, replace functions by other means)
- educate (explain organic agriculture issues to youth, train operators etc.).

These roles can vary from actor to actor and in relation to other actors. For example, school administrations or municipalities can motivate pupils to opt for organic food, while imposing severe restrictions on caterers. Moreover, roles and behaviour can change over time in dynamic actor networks that are characterised by the entry of new actors, the exit of others and the formation of new alliances or rival camps.

The POPY actor network can be described by looking at the food chain. At the one end of the food chain are the producers, at the other the final users. In between, there are many more actors who have their say in POPY or influence it. Some of them are described in the following paragraphs. However, this description provides only a very rough sketch of possible actors in POPY constellations for school meals. It is not an analysis based on empirical research by the iPOPY project.

**Supply chain actors**

*Farmers* (organic and conventional) and *processing firms* (organic and conventional, or both in the same firm) provide the products that are needed for the preparation of meals or the distribution of foods like school milk, fruits, vegetables, drinks etc.

Sometimes, (organic) farmers are organised in (*organic*) *farmers' associations*, co-operatives or marketing initiatives, which try to enhance their position in the market. Caterers deal with such co-operative organisations as well as with individual farmers, tough the latter may make commissioning, accounting and logistics more complicated for caterers. (*Organic*) *wholesalers* connect supply and demand and provide this service to caterers.

*Caterers* occupy a central position in the supply chain, being connected to primary producers, processors, wholesalers and schools as the end consumers. The *production unit* is the division of a catering firm that is responsible for the preparation of meals and determines food quality to a large extent. The production unit can range from a large, central kitchen delivering thousands of meals to several food-serving outlets to small decentralised kitchens at the schools themselves. Another division of a caterer is the *purchasing unit* (the "buyer"). This might also be a procurement official who is not located in the kitchen or production unit, but rather is part of the administration. These actors take care, for example, of issues concerning compliance with the EU directive on procurement. Altogether, there is a great difference between centralised systems and decentralised systems in which single schools or day-care institutions prepare food themselves (for the actors involved, see Fig. 4).

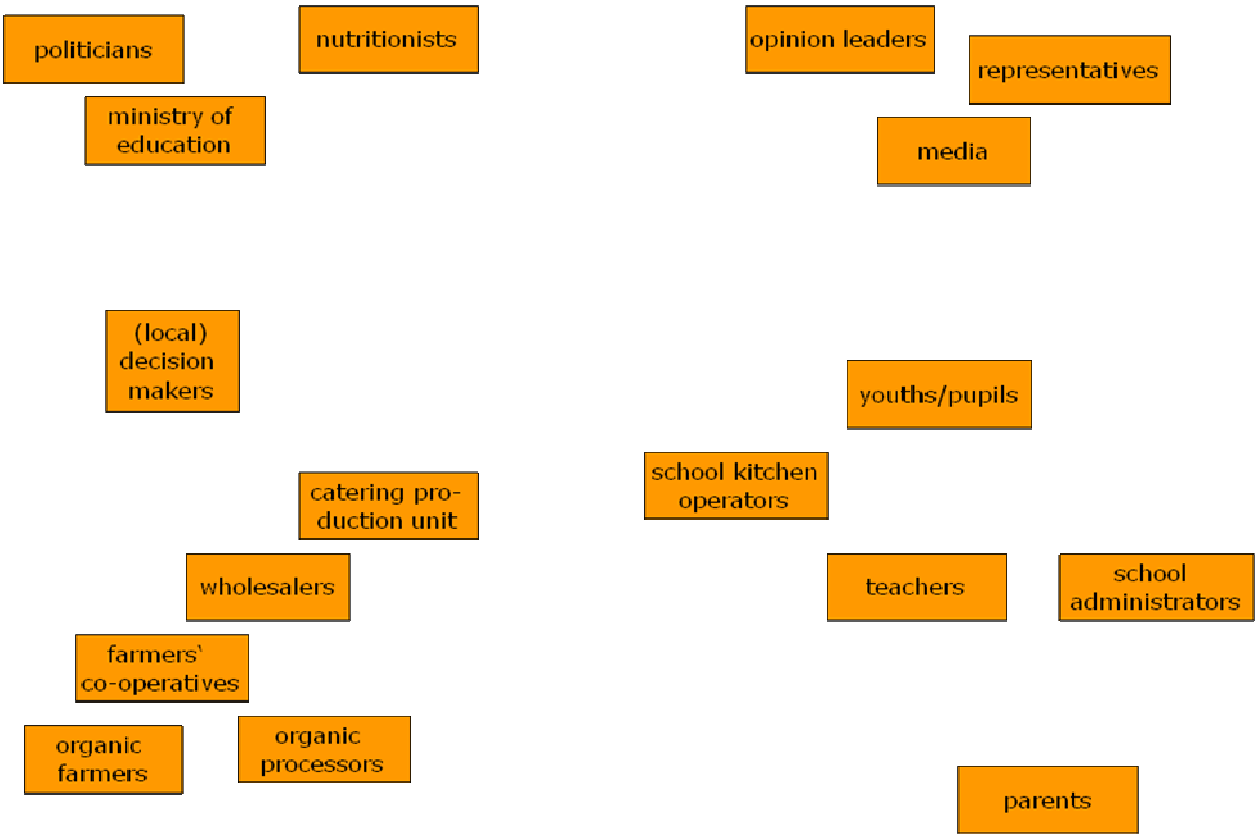


**Fig. 4:** Actors in a general POPY constellation for school meals

**User side**

In public food procurement clearly defining who the users are poses some difficulties, because there is not a single actor who chooses, orders, pays, and consumes the food in the same way as consumers normally do. Therefore, the *young people* who actually eat the food that is supplied are termed *direct users*. Even though they are the final users, they are less influential than normal consumers in the market, because they do not necessarily order and pay for the food. They have little influence over school meals; their role is often restricted to accepting or rejecting whatever is served. Public *decision makers*, on the other hand, do exert control over the food that is served. Their influence varies

according to the different organisational structures for P(O)PY within and between municipalities, public administrations and school administrations. They commission and purchase food and meals and organise meal service either directly or indirectly by contracting out the service to an external firm. In addition to ordering (organic) food for youth, they can act as stage managers organising networks, providing means to overcome bottlenecks in POPY. But they also have the power to counteract the adoption of organic food for school meals, usually to save costs.

*Indirect users* are actors involved in P(O)PY because they pay for meals, such as parents and/or other actors who are requested to give their opinions about a school's meal service and/or participate in evaluating school meals, such as the "Canteen Commissions" in Italy in which parents participate. Therefore, they may represent an important counterpart to public bodies that run meal systems.

**School environment**

The school environment sets the direct context for public food procurement. A *school administration* is an indirect user, paying in part or totally for meal service and it may also be requested to give opinions about the meal service and/or participate in a control body. The school administration is crucial for the implementation of a school's food policy and providing proper facilities for it. Therefore, it is an important actor, all the more in a decentralised procurement system. It can facilitate or hamper organic food consumption considerably.

*School kitchen operators* prepare, warm, serve and/or sell food. They are the interface between the caterer (supply chain) and the pupils, having direct contact to the latter when the food is delivered. For this reason, they act as gatekeepers of a sort and can hamper or enhance POPY considerably.

*Teachers* have the possibility to refer to the food that is procured at their school during class time and are mainly responsible for formal learning about food and nutrition. They, as well as school nurses, tutors etc., also participate in the eating environment at school and, consequently, are involved in informal teaching and learning about nutrition and food.

*Parents* are indirect users, because they influence the choices of their children by paying for school meals and/or providing other food or opportunities to acquire food or not. For instance, they may give children money to buy their food instead of bringing sandwiches from home. Both teachers and parents function as role models for children and young people. Consequently, their behaviour is very influential, and motivated parents have the ability to campaign successfully for implementation of POPY.

Last but not least, *pupils* are an important part of the school environment, where they decide what is actually eaten: from "nothing" to tasty organic meals. Parents, teachers, school administrators and pupils can build a network at the school level and influence POPY and the eating environment. However, the possibilities of having an effect on supply chains varie considerably within school settings and in different countries.

**Further actors**

Although some actors are external to supply chains, consumption, and the school environment, they may still impact POPY constellations. *Politicians* set regulatory frameworks for POPY at the EU, national and regional levels, including its broader context in terms of, for example, health regulations. The question is how much importance they assign to POPY with regard to their political agendas.

*Nutritionists* make recommendations concerning nutrition for youth and public food procurement for them. These recommendations provide a framework of norms, guidelines and standards for public catering.

*Media* and *opinion leaders* shape the public discourse on nutrition and organic food, influencing the perceptions of youth (which foods are trendy?) as well as of politicians. Even though there are public nutritional recommendations, they don't influence the food cultures or nutritional patterns of youth as

directly as they are intended to do. These seem, rather, to be more greatly influenced by media and opinion leaders (celebrities, sports stars, advertising etc.).

*Representatives* like consumer organisations, environmental organisations and other NGOs are sometimes involved in debates on organic food and sustainable nutrition; sometimes they engage in projects or programmes in support of POPY, exerting pressure on decision makers and politicians to extend healthy organic food procurement for youth or even to introduce organic food step-by-step.

To conclude, this exemplary though generalised collection of possibly relevant actors for POPY needs to be refined and deepened for any specific POPY constellation.

## 5.2 Framework conditions for public organic food procurement

POPY is also shaped by framework conditions that delineate the scope of action. Relevant elements of a constellation might be the existing regulatory framework, food quality, markets, information and perceptions of young users, and the health of the youth, factors which are described below (see Fig. 5).

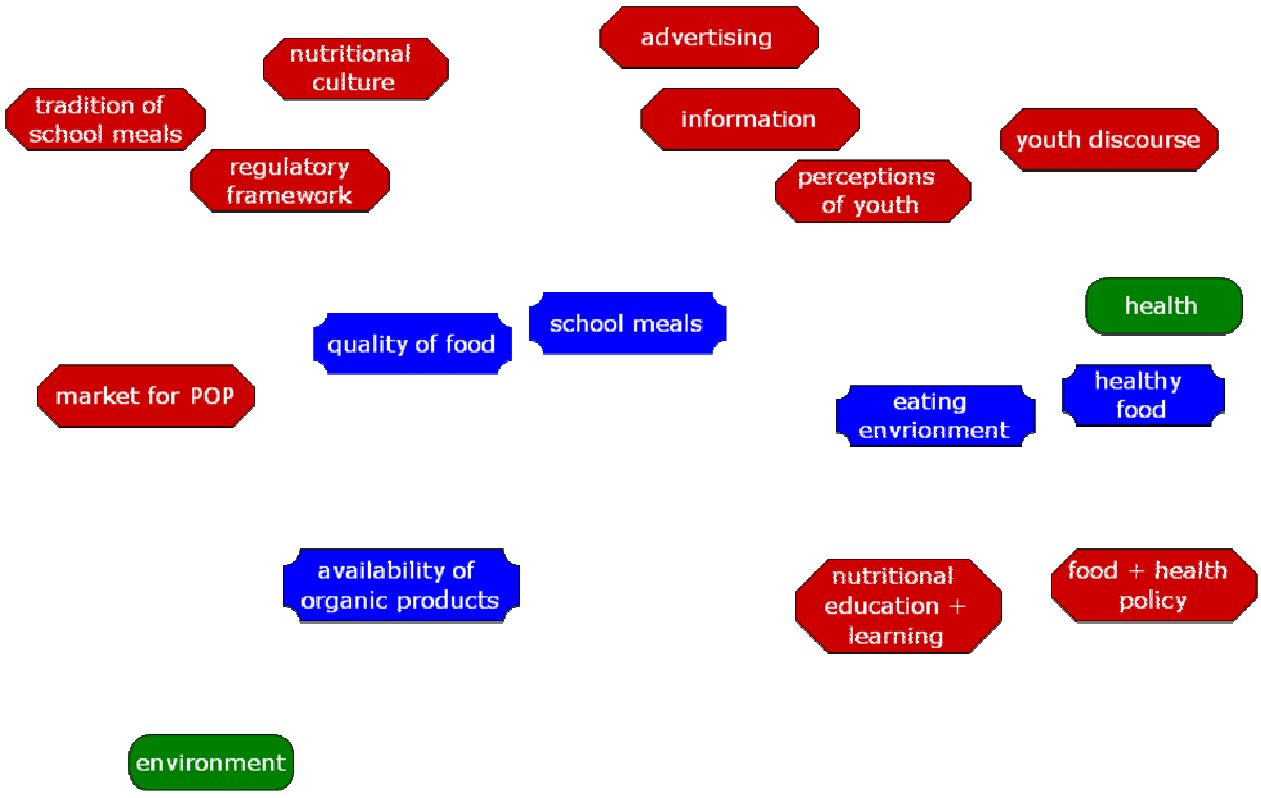


Fig. 5: Framework conditions in a general POPY constellation for school meals

**Regulatory framework**

The *regulatory framework* has an important impact on POPY. It consists of policies about agriculture, the environment, nutrition, education, and health as well as political programmes and strategies for POPY. Further, political instruments that are relevant for POPY can be laws (regulations and directives) and programmes at the EU, national or regional levels. Further aspects of the regulatory framework are a country or region's traditions regarding public food procurement (e.g. for school meals), national/regional experiences as well as financial means for POPY. It is mainly politicians who shape

and influence the regulatory framework, complemented by routinised structures (e.g. in politics, administrations, lobbies, supply chains, daily life routines etc.), which often are difficult to change because they are embedded in a complex context shaped by several, partially diverse functional sub-systems of society.

**Food quality and supply chains**

*Food quality* may be decisive for the success or failure of the expansion of POPY. The high quality of organic food and meal systems may attract users and decision makers. This quality can be influenced by, for example, *quality requirements* for caterers. Often, rather technical requirements dominate instead of the kinds of sensory aspects that may be more important for children. Organic *standards and certification* are an additional, formalised food safety and food quality requirement. Further, the availability of organic produce may become a bottleneck for POPY and organic catering in general.

Further aspects of the framework conditions include markets, which can be highly regulated for school meals. At the same time, POPY is confronted with alternative food offers from outside schools (nearby restaurants, bakeries or lunch boxes from home). Also the information available to, learning habits of, and perceptions of young users are crucial here, equally as well as food and nutrition policies at the municipal or school levels.

## 5.3 Relations between actors and framework conditions: a POPY constellation

So far, many actors and framework conditions have been identified as parts of a general POPY constellation for school meals. The integration of both actors and framework conditions into one map depicting a POPY constellation is a further step of the constellation analysis.

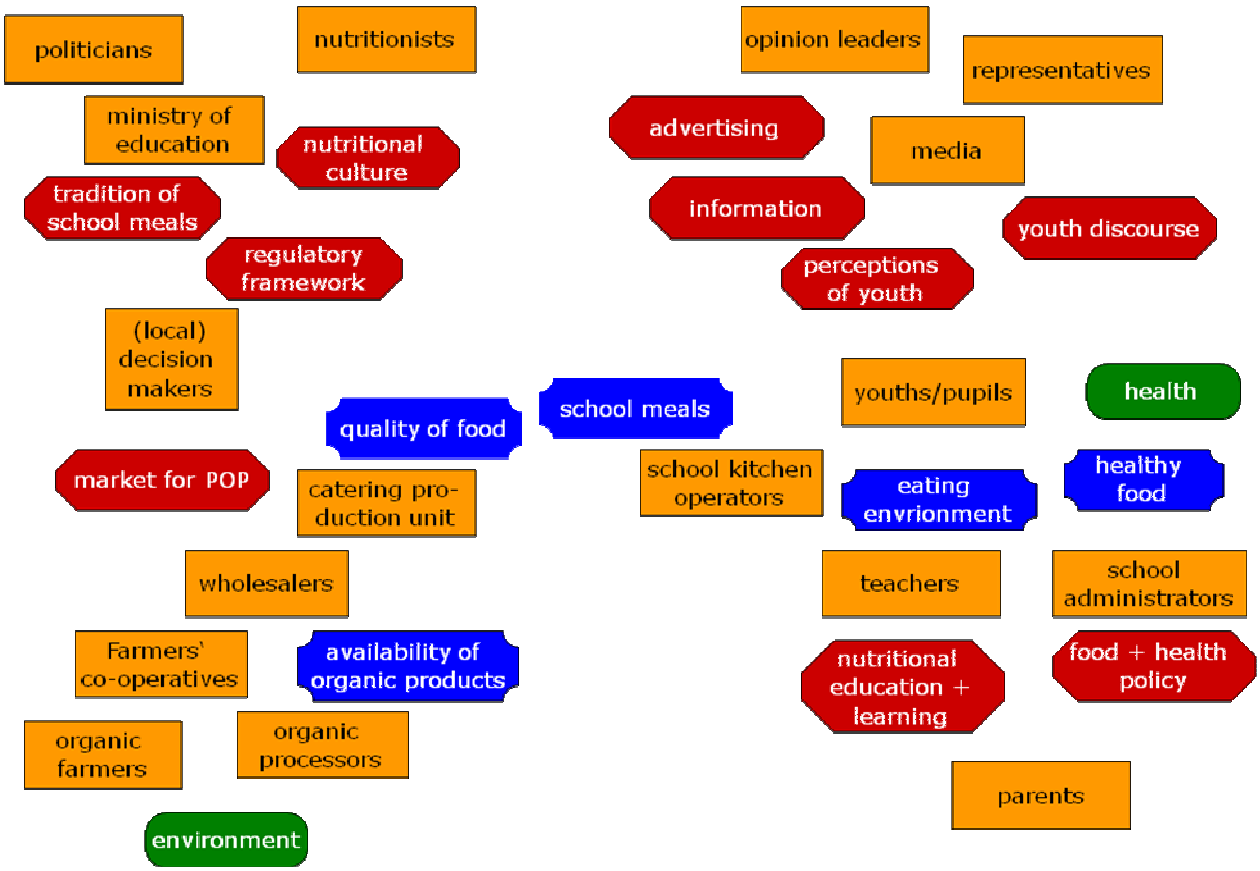


**Fig. 6:** Actors and framework conditions in a general POPY constellation for school meals

The visualisation provided by this map brings to the fore central actors and framework conditions, achieved, however, at the cost of reducing the overall complexity of the process. The relevance of the elements and relations, the selection of some and omitting of others, needs to be discussed and refined further. Altogether, this comprehensive perspective allows for the exploration of the determinants, central linkages or dynamics of such a constellation, which could then be analysed in depth (see Fig. 6).

Further steps in constellation analysis are the analysis and interpretation of the functional principles and characteristics of the constellation at hand. Finally, the dynamics that affect the constellation also need to be examined. These steps include, for example, more systematic identification of stakeholders, the description of relations between elements, and interpretation of the constellation.

One aspect of such interpretation is the delineation and description of so called sub-constellations that form coherent sections of the overall constellation. To highlight the main features of these sub-constellations, some of the actors and framework conditions need to be left out to form a more condensed map (Fig. 7). In our case, four sub-constellations within the general POPY constellation are of specific interest for the research project:

- POPY policy including the regulatory framework)
- Supply chain management and certification (food chains)
- User perceptions, practices and learning
- Nutrition and health

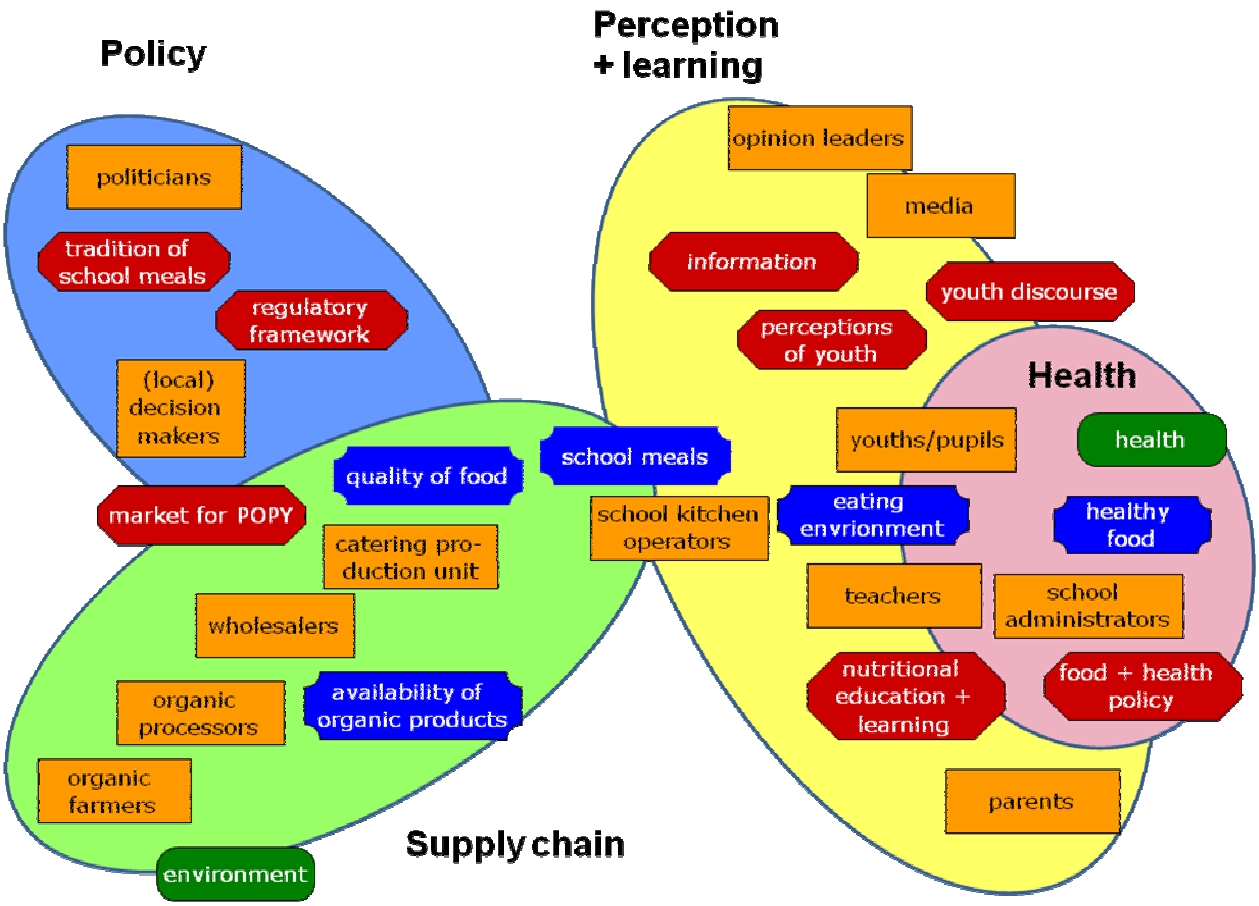


**Fig. 7:** Sub-constellations in a general POPY constellation for school meals

These four sub-constellations are in line with the four thematic work packages of the iPOPY project. The map can provide a common point of reference for all work packages and can stimulate the synthesis of their results.

The above-presented example of a how such a constellation mapping can be done points to how upcoming the differing results from the work packages and each country can be set in relation to each other within the overarching POPY context. It sensitises the researchers to aspects and problems related to other sub-constellations of POPY, while providing background for interdisciplinary discussion about the status of specific results of single work packages or countries.

# 6. Further steps for synthesising results in the iPOPY project

This outline of a methodological tool for WP 1, synthesising results of the iPOPY project, builds on a) a rough description of the background of POPY in the four countries of Italy, Finland, Denmark, and Norway, b) on the glossary that has been developed (see appendix) and c) on the methodological tool of constellation analysis.

These three elements can stimulate interdisciplinary communication within the iPOPY project and sensitise the participating researchers about certain dynamics peculiar to POPY, such as with regard to the

- degrees of relevance of actors and framework conditions
- relations and interdependencies between elements and sub-constellations of POPY constellations
- possibilities for re-designing and shaping POPY framework conditions
- instruments and strategies that are needed to enhance POPY.

In light of the constellation analysis presented here, further steps towards the integration of results with regard to specific POPY constellations could include

- more systematic and refined mapping of stakeholders and framework conditions
- description of relations between elements and within sub-constellations
- "zooming" in relevant sub-constellations and relations in order to display specific results of work packages in more detail, but also to focus on relations and intersections between work packages or sub-constellations
- description and interpretation of functional principles and characteristics of the constellation (e.g. relations between sub-constellations)
- description of POPY constellation dynamics.

The mapping of POPY constellations in the four countries can be a useful tool for synthesising results from several work packages. This can be complemented by mapping specific aspects (sub-constellations) in more detail for each country or mapping interesting cases. These maps can be used for the comparison of countries, regions, or cases. Such visualisation has the advantage of bringing similarities and differences out into the open.

To summarise, constellation analysis is a tool that facilitates the interdisciplinary synthesis of results concerning different aspects of POPY. The mapping of POPY constellations needs to build on the empirical and theoretical findings generated by the WPs of the project.

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# Appendix: The iPOPY Glossary

This glossary gives working definitions for terms that are central for the iPOPY research. The definitions may be developed further during the research process. Some of the definitions in the report are repeated here in order to provide a comprehensive glossary.

## Terms of the project title: Innovative Public Organic food Procurement for Youth

**Innovative** refers to the fact that public organic food procurement may require specific new instruments and/or the combinations of established instruments and new approaches. Such instruments may comprise laws and directives specifically adapted to the requirements of organic food procurement, standards and certification procedures, labelling, training, or qualification measures. New approaches may, for example, foster learning processes and experience with regard to organic food and/or support the building of actor networks. Innovative public procurement pursues public goals, but should also try to be responsive to user needs and wants.

**Public procurement** is the acquisition process of goods and services by the public authorities. Public procurement is usually organised by means of contractual arrangement after public competition and spans the whole life cycle from initial conception of the needs of the public service through to the end of the use of the assets or the end of a contract. Public procurement may be guided by the concept of "best value for money", which can be described as an optimal combination of whole life cost and quality to meet the customer's requirements

**Public food procurement** means that public authorities purchase food in order to provide it to users in public settings, including day-care institutions, schools, the army, homes for the elderly etc. as well as in canteens for employees of public institutions. The catering service can be provided by public units, by enterprises that are owned by public institutions, or it can be outsourced to private firms. Such food service is financed totally or at least partially by public authorities, in the sense that at least some of the indirect costs for organising the food service are covered by public institutions. Users (e.g. children or their parents) might be charged a contribution.

**Food**, in the context of public procurement for youth, is understood as a "meal system", including all food that is served or provided to young people at public institutions, from single items such as milk and fruit to snacks and complete meals as well as drinks (school milk etc.). This excludes all food and drinks that young people bring themselves (from home or bought in a nearby kiosk, fast-food outlet etc.).

**Organic food** is defined by the EU-Regulations on organic farming (Regulation EEC N° 2092/91) and on organic production of animals (Regulation EC N° 1804/1999). From 2009 on, the revised EU-Regulation N° 834/2007 on organic production and labelling will come into force, replacing previously existing regulations. Organic food procurement means that the meal system contains organic produce, ranging in overall proportion from only one to a few organic ingredients to entirely organic meals that might even be certified as organic according to the EU-Regulation.

**Youth** include children from 3 years on (e.g. day-care institutions, kindergartens) up to "older" youth, up to 25 years, such as students at high schools and universities or soldiers. The project focuses mainly on pupils in the school age from 5 to 16 years.

**Working definition of Public Organic food Procurement for Youth (POPY)**
Public organic food procurement for youth comprises all activities with regard to procurement in public food services for children and young people up to 25 years in schools and other public institutions for youth, such as day-care centers, universities, hospitals, and military facilities. The meal system is organised and its costs are carried, at least partially, by the public institution in

question. Youth, or their parents, may need to pay for the food, at least in part. The food contains organic products conforming to EU-Regulations on organic production.

## Terms with regard to the complex of public organic food procurement for youth

Public organic food procurement for youth forms a whole complex of processes, some of the central terms of which are explained as follows.

**Food chain:** A food chain includes all steps from farm to fork and everything that is required to supply consumers with (organic) food. Food chains can be differentiated according to food products (cheese) or product groups (dairy products).

**Supply chain:** A supply chain is the part of the food chain that covers the production process from the farmer to the kitchen or the processing unit; it includes it includes packaging, refining, and processing industry (e.g. bakery) of a product or product group.

**Direct users:** Direct users are located at the end of the food chain and actually eat the food served (e.g. pupils in school, patients in hospital, and employees in a canteen).

**Captive catering:** Captive catering describes the situation of users/clients/patients in "captive" settings, such as hospitals, schools, canteens etc., where access to meals is "granted" through the individual's relation to that setting (e.g. employment, being a pupil at a school, admission in a hospital etc.). They are normally served food with a restricted choice – in contrast to situations where consumers are offered a certain range of meals etc. that they can choose from. However, users may choose between different food items and meal components in many (school) canteens.

**Indirect users:** Indirect users are actors involved in P(O)PY because they pay (in part or totally) for meal services, such as parents, and/or are requested to give an opinion about the meal service and/or participate in the evaluation of P(O)PY (e.g. Canteen Commissions, the so called "Commissione Mensa" in Italy). Indirect users may represent an important counterpart to public bodies that procure the meal system, e.g. in Italy.

**Production unit:** The production unit is the place where the food is prepared either in a central large kitchen or in rather small local kitchens. Kitchen staff works in the production unit preparing the meals. The production unit may be part of public bodies (e. g. municipalities, school administration, hospitals) or an external catering service. These private firms are under contract with the public body that is in charge of the food procurement.

**Organic certification:** The process whereby the production unit or the organisation claiming organic use or status is inspected and its claims are verified. This is usually carried out by an independent third party.

**Canteen:** A canteen is a place where users buy food and (usually) eat it.

**Canteen service staff:** They may warm food up, serve and sell it in canteens other eating environments. The canteen service staff has direct contact with the users/pupils and, for this reason, act as a kind of interface between the catering service and the pupils.

**Food and nutrition policy:** This is a set of principles to provide for the nutritional needs of pupils at schools, ensuring the availability and accessibility of healthy foods.

**Sustainable school meal service:** "[A] service that delivers fresh and nutritious food; conceives healthy eating as part of a socially negotiated 'whole school' approach; and, wherever feasible, seeks to source the food as locally and as seasonally as possible. The most important vehicle for securing a sustainable school meals service is creative procurement policy, which takes a holistic view of the food chain because it recognizes that production and consumption needs to be calibrated at the local level" (MORGAN/SONNINO 2007, p. 19).

## The context of POPY

In addition to the POPY complex, some important terms for the context of POPY and stakeholders are described as follows.

**Sustainable development:** Sustainable development is defined by the Brundtland commission as a development that "meets the needs of the present generation without compromising the ability of future generations to meet their own needs" (BRUNDTLAND 1987).

**Sustainable agriculture:** There are various definitions of sustainable agriculture, which can often be a matter of interpretation. Most of them follow the FAO guideline: sustainable agriculture must be economically viable and socially responsible. It must be geared towards conserving land, water and genetic resources for future generations.

**Sustainable nutrition:** Sustainable nutrition is environmentally friendly, healthy, satisfying nutritional needs and contributing to quality of life. Food supply should correspond with daily life routines and foster socio-cultural diversity (EBERLE et al. 2006).

## The iPOPY project

The aim of the project "innovative Public Organic food Procurement for Youth – iPOPY" (http://www.ipopy.coreportal.org/) 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. The research project is a cooperative effort between Norway, Denmark, Finland and Italy (2007-2010). German researchers are also participating, funded by the Research Council of Norway. iPOPY is one of a total of eight projects that are funded through a joint call of the ERA net CORE Organic.

More at www.coreorganic.org

**Project contributors:**
**Norway:** Bioforsk Organic Food and Farming Division and SIFO, National Institute for Consumer Research
**Germany:** University of Applied Sciences, Münster and Center for Technology and Society, Berlin Institute of Technology
**Denmark:** DTU, Technical University and DTU, National Food Institute
**Finland:** University of Helsinki, Ruralia Institute
**Italy:** State University of Milano, Dep. of crop science and ProBER (Association of organic and biodynamic producers of the administrative region of Emilia Romagna)

**Project manager:** Anne-Kristin Løes, Bioforsk Organic Food and Farming Division, Norway

# iPOPY Publications:


*Bocchi, Stefano, Roberto Spigarolo, Natale Marcomini and Valerio Sarti; Bioforsk Report, Vol. 3 No. 42 2008, iPOPY discussion paper 3/2008, Organic and conventional public food procurement for youth in Italy.*

*Hansen, Stine Rosenlund; Hannah W. Schmidt, Thorkild Nielsen, Niels Heine Kristensen, Bioforsk Report Vol. 3 No. 40 2008, Organic and conventional public food procurement for youth in Denmark.*

*Løes, Anne-Kristin, Matthias Koesling, Gun Roos, Liv Birkeland, Liv Solemdal, Bioforsk Report Vol. 3 No. 43 2008, iPOPY discussion paper 4/2008, Organic and conventional public food, procurement for youth in Norway.*

*Mikkola, Minna; Bioforsk Report Vol. 3 No. 41 2008, iPOPY discussion paper 2/2008, Organic and conventional public food procurement for youth in Finland.*

*Strassner, Carola; Løes, Anne-Kristin; Kristensen, Niels Heine and Spigarolo, Robert (eds.); Proceedings of the Workshop on Organic Public Catering held at the 16th IFOAM Organic World Congress, 19th June 2008 in Modena, Italy.*


**All publications can be downloaded from the website:**
http://www.ipopy.coreportal.org/