



Midterm Status Report 2002 and Application for Continuation in 2003

For research projects financed by grants from
The Directorate for Food, Fisheries and Agro Business
under the Danish Ministry of Food, Agriculture and Fisheries

1. Research program

Research in organic farming 2000-2005 (DARCOF II)

2. Project title and number

III.1 Consumer Demand for Organic Foods – Domestic and Foreign Market Perspectives

3. Head of project

Associate Professor/Senior Research Fellow
Mette Wier
AKF, Institute of Local Government Studies - Denmark
Nyropsgade 37, DK-1602 Copenhagen V
Tel. 33 11 03 00
Fax 33 15 28 75
E-mail mw@akf.dk

4. Participating institutes

AKF, Institute of Local Government Studies - Denmark
Nyropsgade 37, DK-1602 Copenhagen V
Tel. 33 11 03 00
Fax 33 15 28 75
E-mail mw@akf.dk

Institute of Economics, University of Copenhagen
Studiestræde 6, DK-1455 Copenhagen K
Tel. 35 32 30 70
Fax: 35 32 30 64
E-mail: Martin.Browning@econ.ku.dk

GfK Danmark A/S,

Sylows Allé 1, DK-2000, Frederiksberg
Tel. 38 32 20 00
Fax: 38 32 20 01
E-mail: Henrik.Stender@GfK.dk

Centre International de Recherche sur l'Environnement et le Développement (CIRED)
45 bis, avenue de la Belle Gabrielle, F-94736 Nogent sur Marne, Frankrig
Tel. (33) 1 43 94 73 73
Fax (33) 1 43 94 73 70
E-mail: Millock@centre-cired.fr

Aalborg University (AAU)
Fibigerstræde 1, DK-9220 Aalborg Øst
Tel. 96 35 81 85
Fax: 98 15 53 46
E-mail: Ingeman@socsci.auc.dk

5. Other project staff

Associate Professor Lars Gårn Hansen
AKF, Institute of Local Government Studies - Denmark
Nyropsgade 37, DK-1602 Copenhagen V
Tel. 33 11 03 00
Fax 33 15 28 75
E-mail lgh@akf.dk

Senior Research Fellow Kjeld Høgsbro
AKF, Institute of Local Government Studies - Denmark
Nyropsgade 37, DK-1602 Copenhagen V
Tel. 33 11 03 00
Fax 33 15 28 75
E-mail keh@akf.dk

Research Fellow Laura Mørch Andersen
AKF, Institute of Local Government Studies - Denmark
Nyropsgade 37, DK-1602 Copenhagen V
Tel. 33 11 03 00
Fax 33 15 28 75
E-mail lma@akf.dk

Professor Martin Browning
Institute of Economics, University of Copenhagen
Stuadiestræde 6, DK-1455 Copenhagen K
Tel. 35 32 30 70
Fax: 35 32 30 64
E-mail: Martin.Browning@econ.ku.dk

Consultant Henrik Stender
GfK Danmark A/S
Sylows Allé 1, DK-2000, Frederiksberg
Tel. 38 32 20 00
Fax: 38 32 20 01
E-mail: Henrik.Stender@GfK.dk

Chercheur Associé Katrin Millock
 Centre International de Recherche sur l'Environnement et le Développement (CIRED),
 45 bis, avenue de la Belle Gabrielle, F-94736 Nogent sur Marne, Frankrig
 Tel. (33) 1 43 94 73 73
 Fax (33) 1 43 94 73 70
 E-mail: Millock@centre-cired.fr

Associate Professor Jan Holm Ingemann
 Aalborg University (AAU)
 Fibigerstræde 1, DK-9220 Aalborg Øst
 Tel. 96 35 81 85
 Fax: 98 15 53 46
 E-mail: Ingeman@socsci.auc.dk

PhD scholar Chris Kjeldsen
 Aalborg University (AAU)
 Fibigerstræde 1, DK-9220 Aalborg Øst
 Tel. 96 35 81 85
 Fax: 98 15 53 46
 E-mail: ckj@socsci.auc.dk

6. Project period (month, year)

Start of project:	2000
End of project:	2004

7. Midterm description of the project, its results and progress, and application for continuation in 2003

A. Project summary

In **Work Package 1**, we estimate demand functions for Danish household consumption of organic foods. We utilize a household level panel data set with daily registration of food purchases combined with preference information elicited from panel members through a questionnaire surveyed after the registration period.

Background variables make it possible to model demand dependence on household characteristics such as income, geographic location, occupation, age, number of children, etc. Furthermore by combining the detailed registration of consumption behavior with elicited information on underlying attitudes and valued attributes, we hope to be able to shed new light on the structure and relative importance of various motives for purchasing organic foods within various consumer segments. We intend to focus specifically on (1) purchasing motives (personal health, animal welfare, environmental effects, etc.), (2) attitudes towards organic convenience food and underlying processing technology, and (3) attitudes towards conventional versus alternative sales channels.

An estimated demand system including explicit representation of valued good attributes and underlying attitudes makes it possible to evaluate different information and labeling strategies in addition to more traditional evaluation of the demand effects of prices and demography. We also exploit the possibility of confronting willingness to pay information elicited through a CV-design with revealed demand behavior of the same group of households.

In the work package we conduct similar analyses in one or two neighboring countries, for the following reasons: first, it is highly relevant to explore export markets for Danish organic producers, i.e. identification of foreign consumer preferences and market barriers; second, the importance of specific market factors such as sales channels or labeling of organic products, can be analyzed through comparison between countries that differ with respect to these factors.

In 2003 and 2004 we will

- Identify differences in purchasing motives, attitudes towards convenience food and towards alternative sales channels and processing technology and in the demand (and in its price sensitivity) between different consumer groups dependent on age, number and age of children, income, education, number of preschool children and place of residence.
- Elaborate and analyse household panel purchase data from GfK for a selected export market (preferably UK or France).
- Examine differences in people's confidence in organic product labeling among countries and among different consumer groups within the individual countries.
- Analyze differences in food consumption and consumer preferences from country to country, and identification of key factors behind the differences. Of particular interest is differences in food culture (favorite types of food, attitudes towards imported goods, preferences of prepared/unprepared products etc.), and differences in sales channels (whether the products are sold in supermarkets, through alternative sales channels like health-food shops, food co-ops, in farm shops or on markets).
- Examine differences in purchasing motives, willingness to pay, store choice and the importance of socio-demographic variables for different types of organic products.
- Analyze the effect of policy instruments such as levies, subsidies, information campaigns and different types of labeling depending on both market conditions like sales channels as well as on consumers' socio-demographic characteristics and purchasing motives.
- Make scenario calculations.

In **Work Package 2**, we focus on alternative production, distribution and sales channels. The expansion of organic farming has resulted in a number of organic producers establishing alternative processing and distribution networks, in a search for interested consumers. There can also be identified cases, where consumers have established alternative food networks, in a search for interested producers, who will participate in a closer and more obligating cooperation for both parties. There can also be found cases, where development of producer-consumer relations in organic farming aims at creating local or regional development. The purpose of WP2 is to describe and analyse the possibilities and barriers, these innovative initiatives encounter, and to investigate their potential for reformulating the role and function of existing institutions and policies, aimed at enhancing sustainable development on a local or regional scale.

The project is comprised of three main elements. First, a historical description of the development of the relations between organic farming and its societal context (consumers, other nodes in the agro-food network, local communities etc.). Secondly, case studies will be conducted, where a number of relevant examples among recent pioneer initiatives, aiming at developing producer-consumer relations, are selected for a detailed study. Thirdly, an analytical part, where the selected cases are compared and related to general development trajectories of contemporary society.

In 2003 and 2004 we will

- Complete case studies of the selected cases. Both central persons from production, processing/distribution as well as consumers will be interviewed, using mainly semi-structured, qualitative research interviews.
- Collect quantitative data on the market for organic products
- Prepare working papers for presentation at relevant conferences
- Prepare drafts for journal articles
- Spend 3-4 months on a foreign university or research institution; candidates for the time being are University of Cardiff or University of Essex
- Write the Ph.D.-dissertation, which hopefully will be comprised by journal articles

Table A.1: Work package list (from application)

No.	Work package title	Participants*	Budget (1,000 DKK)	Start	End	Deliverable No:
1	Consumer preferences and demand: potentials and barriers for market expansion	<u>AKF</u> , KU, CIRED, GfK	3,730	2000	2004	1,2,3,5,6,7,8,9,10,11,13,14,15,16,17,21,22,23,24,25,26,27,28
2	Alternative distribution channels: driving forces and potentials	<u>AAU</u>	500	2001	2003	4,12,18,19,20

* Responsible participants are underlined.

B. Objectives and expected achievements

The overall goal is to assess the long-term potential of demand for organic food from Danish agriculture. Thus, we will attempt to identify the market potential at home and abroad and identify the conditions of utilizing this potential - including the effects of various policy instruments, sales channels and information strategies. In order to accomplish these objectives, the project is divided into 2 work-packages:

Goals for WP1 (Consumer preferences and demand: potentials and barriers for market expansion):

To analyze consumer demand for organic foods, including estimation of a system of household demand functions for organic foods with explicit representation of valued good attributes and underlying attitudes. Domestic as well as foreign demand is considered. Special attention is given to

- Evaluation of the effect of policy instruments, such as levies, subsidies, labeling and consumer evaluation,
- Identification of the relations between purchasing motives and willingness to pay
- Examination of consumer attitudes towards industrially manufactured organic food, specifically convenience food/prepared meals versus alternative small-scale manufacturing and distribution.

Goals for WP2 (Alternative distribution channels: driving forces and potentials):

- To identify driving forces behind "alternative" and "small-scale" market initiatives, their opportunities, including institutional and structural limits for further innovations.

C. Midterm results and progress

C.1 Description (summary) of main results and conclusions

Work Package 1:

In WP1, we have accomplished the following:

- Surveyed previous studies on consumption of organic foods
- Identified main prerequisites for growth in consumption of organic foods
- Decided on modeling and estimation approach
- Carried out focus group interviews
- Designed the questionnaire
- Tested the questionnaire on 400 households

- Elaborated on and analyzed results from test sample
- Redesigned and submitted final questionnaire to the GfK household panel
- Received, documented and elaborated data from the GfK household panel
- Analyzed the organic market, based on data from the GfK household panel
- Compared actual and stated willingness to pay for various products
- Estimated a model determining willingness to pay for organic foods
- Carried out macro- and micro-estimations to estimate price- and budget sensitivity, and the importance of household characteristics
- Carried out estimations of consumer valuation of milk characteristics (organic/non-organic, fat content, taste)
- Estimated a model to evaluate the importance of environmental and animal welfare labeling on the egg market
- Published 2 peer reviewed articles (plus 1 submitted and 3 in preparation), 6 working papers, 7 conference papers/presentations, 1 book contribution, 5 other papers and 2 oral presentations.
- Conducted a two-day workshop and meetings in the coordination group on a regular basis.
- Made a home page at www.akf.dk/organicfoods/, from where project description and papers from the project can be downloaded.

In more details, we have achieved the following results:

Market analysis

Most previous studies point to health benefits as the main motive for buying organic foods, while concern for the environment, animal well-being and taste are mentioned next. In other words, for the majority of the consumers, their motivation for buying organic food is, to a greater extent, related to the product-specific characteristics directly benefiting the consumers, rather than toward the production-process-specific characteristics indirectly benefiting the consumers. Motivation, however, varies between different consumer segments. The more "idealistic" consumers, having the highest buying frequency, are driven by environmental concerns and political motives, but amount to only a minor proportion of the consumers. In contrast, those groups that are driven mainly by health concerns have a lower buying frequency, but represent a major proportion of consumers. It is in these "health concerned" segments where there is an increasing demand for organic foods, including organic convenience food and other easily prepared meals.

In the Danish market there is a relatively well functioning processing and distribution system as well as a reliable certification and labelling system. In addition, the majority of organic foods are sold in supermarkets. These factors are the main reasons why Denmark currently has the highest consumption of organic products per capita in the world. This high consumption of organic foods in Denmark is not due to higher interest in organic products, because interest is just as strong in many other countries. Germans, for example, are very interested – compared to other Europeans – in health, ecology, food safety and the freshness of food. However, in spite of this interest in organic food, per-capita consumption is not very high in Germany, due to market barriers, which cannot be found to the same extent in the Danish market. Therefore, further expansion of the organic market in Germany, and else where, will depend on removing these barriers. Firstly, it is crucial that consumers can identify the food as organic or else they will not be willing to pay a premium for it. Thus, establishing a well-known and trusted labelling system is essential. Secondly, future expansion requires increased supply in supermarkets, which are able to reach a wider range of customers, especially the young and busy consumers, who do not have time to shop in speciality shops. A potential exists for sales of highly processed organic foods (e.g. frozen and convenience foods) in supermarket sales. In order to increase sales, new products, designed for the modern consumers should be supplied. Furthermore, the role of information should not be underestimated, and systematic, professional promotion of organic products is a precondition for future expansion. Results from our demand modelling (cf below) based on Danish data for actual purchases suggest that a substantial fall in price premiums will substantially improve sales. Higher prices today are mainly due to an immature market, hindered by inefficiency and a costly processing and transport sector. Gradually, as markets mature and more production is initiated, processing and transport will be possible on a larger scale, and prices will, in all probability, stabilise at a lower level.

Elaboration and documentation of purchase data

The primary data source in this project is "GfK – ConsumerScan (Dansk HusstandsPanel)". Each week households in the panel report their shopping to GfK, and state whether each good purchased is organic or conventional. The working paper explains the nature and contents of the panel data. It gives a general overview of the information available in the data, and as well as examples of the data recorded by GfK. In addition to data on household purchases, GfK has the following background information on households: demographic and socio-economic characteristics, attitudes to food and shopping patterns, eating patterns and media habits. We have access to these data at their most detailed level starting in 1997. The very detailed observation level provides a wealth of information, but, on the other hand, it implies a considerably amount of time to elaborate the data.

Aggregated demand modelling

Using aggregated econometric demand modeling, we analyze the consumption of organic foods in Denmark in the late 1990s. The aim of our study is to identify the influence of price premiums on buying propensity. The methodological approach is econometric estimation based on observations of purchases of organic and conventional products. We apply the AIDS demand system and estimate dynamic as well as static specifications, homothetic as well as non-homothetic specifications, and furthermore specifications with and without trends. The preferred model is a homothetic, static model with a linear trend. We have estimated price and budget elasticity for various types of organic foods.

Results from these studies suggest that price sensitivity in demand for organic products is high, compared to other food demand studies. An important reason for the high elasticities is that the organic and conventional products are close substitutes. Furthermore, it appears that organic products respond much more to price changes than conventionally produced products do. This is partly due to the high budget share of conventional products, and partly indicating that organic products, often newly introduced on the market, may be subject to more price comparison. Similar results can be found in other studies on demand for organic foods in United States (cf. Glaser, L.K. and G.D. Thompson (1998), Demand for Organic and Conventional Frozen Vegetables. Paper presented at the American Agricultural Economics Association Annual Meeting, August 8-11, Nashville, Tennessee, or Glaser, L.K. and G.D. Thompson (2000), Demand for Organic and Conventional Beverage Milk. Paper presented at the Western Agricultural Economics Association Annual Meeting, June 29-July 1, Vancouver, British Columbia.

In the preferred model specification, the budget elasticity was set to unity. However, if this restriction is relaxed, the budget elasticity for organic products is larger than 1. This indicates that organic foods are luxury goods, as the budget share increases with the budget.

Organic products are demanded in all types of households. However, some household characteristics are associated with higher propensity to buy organic foods. Previous studies have found that household size is positively correlated with buying propensity for organic foods. This result cannot be confirmed in our study, as it is the age of children in the household and not the mere presence of children that yields higher volume shares. Thus, families with small children have a higher buying propensity than families without children or with teenage children.

Some studies find that urbanity is positively correlated to organic buying propensity, and that is partly confirmed in our study. The highest organic budget shares are found in the metropolitan area and the lowest in rural areas in western Denmark. Households in eastern rural Denmark are an exception to this rule, however. Regarding consumer age, previous Danish studies conclude that younger consumers have a higher buying propensity. Most studies on countries other than Denmark confirm this, but in addition some studies find that also the oldest consumers have a high buying propensity. In our study, we find that younger consumers, especially between 30 and 40 years, exhibit higher organic budget shares than other consumers. The dependence of age, however, varies somewhat across product type.

Price sensitivity of demand varies across different household types. This implies that reducing the price premium for organic foods will cause an increase in consumption, but this will, however, primarily happen in some household types. In general, households with low organic budget shares show the highest price elasticity in demand and vice versa. This indicates that the price premium is an important reason for not buying organic foods in some households, and policies aimed at reducing price premiums will be highly effective with respect to these households. In contrary, other household types will respond more to other policy measures.

Household level demand modelling

We have specified the utility function we wish to model. We have presented and discussed possible specifications of the demand system to be estimated with the GfK panel and survey data. We have putted forth some potential estimation/modelling problems, and finally proposed specific models and evaluate how they are expected to perform with respect to the potential estimation/modelling problems.

At present, we develop and improve the demand modelling on household purchase data from 1997-2001. We are currently applying micro-econometric estimation of demand for aggregated food groups, utilizing the panel nature of data. In the model, the individual household's consumption of organic foods is modelled, and its dependence on important factors such as prices, household income, geographic location, consumer's occupation, age, number of children, etc. In the current modelling work, we hope to confirm our previous results, in addition to accomplishing new insights.

Three main approaches are followed: First, we have had good results when modelling demand for the aggregated food groups of dairy goods, bread and cereals, and other foods (including meat, vegetables and fruit). Another approach – also with good preliminary results - is modelling demand for various meal types. The meal types are breakfast and lunch (bread, filling and spread for sandwiches, cereals, etc), dinner (meat, fruit and vegetables), basic foods, i.e. food types that may appear in any meal type (flour, milk, sugar etc), and finally additional food, i.e. food consumed in addition to ordinary meals (coffee, wine, candy, cakes, fruit). The third approach is modelling revealed preferences, i.e. modelling demand for (and implicitly valuing) products characteristics like fat content, with/without organic label, small/large producer, convenience and origin. At the current stage this is done for the milk market, cf. below.

At present we are estimating traditional AIDS-systems with between 3 and 5 good aggregates each with an organic and a conventional variant. Several look promising. We have focused on 14 week periods in order to minimize fluctuations in purchases due to stock fluctuations. We have included dummies for each 14 week period to take account of seasonal variation general shifts/trends and national advertising campaigns and food scares. Observations are highly selected. Only those observations that after aggregation have positive budget shares of all good aggregates are included. This ensures constant parameters across observations since the systems is derived under same boundary restriction for all observations - but also gives a lot of selection (i.e. consumers with low eco proportions are under represented). We have also excluded observations from kiosks, gas stations etc where high prices are paid for convenience. We are at present estimating systems with fixed effects for each equation and plan also to allow price parameters to vary between households.

We have developed an inverted variant of the AIDS system which in principal would allow us to utilize observations with zero budget shares in some aggregates. This would allow us also to utilize observations from and describe households with low organic demand. With the models currently under estimation we will be able describe organic demand in general and specifically to ascertain whether organic good aggregates generally are better substitutes than the corresponding conventional good aggregates.

Estimating revealed preferences

We present a characteristics based analysis of the demand for milk in Denmark. Such an approach models the demand for a wide variety of milk types (such as organic ('oko') regular 3.5% milk) as being motivated by preferences over a small number of attributes. In this case the attributes are fat content, taste and whether the milk has been produced under environmentally friendly conditions (oko). Such an approach is particularly appropriate for analysis of the value of the latter to consumers. We consider a number of issues, including:

- Are the data non-parametrically consistent with utility maximisation and a linear characteristics model?
- If so, can we specify the characteristics model using just the (observed) characteristics noted above?
- Can we price a milk type that has never been previously marketed?
- Can we place a valuation on 'oko' both at the individual household level and at the market level?

The basic idea of the approach is that consumers' preferences can be recovered from their individual choices of goods, their budget constraint and the prices of the goods. When a consumer buys a bundle of goods (say (x_1, x_2, \dots, x_g)), we know, that (x_1, x_2, \dots, x_g) is affordable and

that (x_1, x_2, \dots, x_g) is at least as good as any other affordable bundle given the consumers preferences, the prices and the budget. By observing more choices made by the consumer, for instance at different times, we can learn more about the consumer's preferences and when having several observations we can trap the consumer's indifference curve. We can also test a simple rule for whether the consumer's choices are consistent with utility maximisation. The rule is called the General Axiom of Revealed Preference (GARP).

Compared with parametric methods the combination of revealed preference theory and non parametric methods is appealing, because no assumptions about the functional form of the consumer's utility functions are made. For instance, if the integrability conditions are rejected in the parametric model we can not access, whether this rejection is driven by the 'wrong' functional form or there exist no well-behaved form of preferences, which can rationalise the data. Non parametric analysis allows us to check this. Further, when using parametric demand estimates for policy analysis there will always be uncertainty to which extent the welfare conclusions are driven by the chosen functional form. With Non parametric analysis we can obtain bounds on welfare effects and use these bounds to judge the importance of functional form on welfare conclusions.

The GfK-Denmark's household grocery consumption panel data set is particularly well suited for non parametric revealed preference analysis, because it contains plenty of observations for each household. The tightness of the bounds on the consumers' preferences depends on the number of observations for each household. More observations give tighter bounds.

The major technical innovation in the paper is the development of revealed preference (RP) conditions for characteristics models. This means that we do not have to assume a functional form for the utility function. As a side benefit, RP conditions do not have any especial problem with particular households not buying many types of milk in a particular week. By contrast, there are not currently available multivariate censored models for panel data that do not impose strong assumptions. We derive two sorts of restrictions from the characteristics structure. First, we have restrictions on how the prices of the different types of milk evolve over time. These restrictions can be modelled using state space representation models from time series analysis. In the paper we develop a series of dynamic factor models that allow us to address some of the issues discussed above. The second set of restrictions apply RP conditions to the time series of demands and prices for individual households. In doing this we extend current RP tests to allow for linear characteristics models and we also propose methods for allowing for measurement error on the prices.

Focus group interviews, design and test of questionnaire

We have designed, tested and re-designed a Questionnaire. The questionnaire is designed to provide information for model estimation, in addition to panel data. The questionnaire was first inspired by focus group interviews, thereafter discussed with a large number of experts outside the project. Ultimately, it was tested on 400 randomly chosen households (stratified, however, to be representative for the Danish population with respect to geographical location). Elaborating on results from test sample gave rise to re-assessment of the questionnaire, resulting in a new version.

The uniqueness of our study is the availability of detailed self-reported consumption diaries and the opportunity of connecting questionnaire answers with these at family/person level. With this in mind one can seek information for three purposes:

- to supplement GfK-data with information that would allow us to construct a demand model for the individual consumer based on a richer/deeper utility function specification including underlying consumer attitudes, perceived good attributes and information gathering skills/attitudes.
- to supplement GfK-data socio-demographic variables allowing a richer analysis of correlation between these and attitudes, attributes and modelled demand behaviour and potentially giving a better formulation of parameter homogeneity restrictions across consumers.
- to duplicate GfK-data through CV/stated preference elicitation methods thus allowing confrontation of these methodologies with actual behaviour.

We have not yet had time to complete elaboration of final questionnaire data, but the elaboration of test results points towards the following:

- Salmonella, pesticide and medicine residues are top food safety concern. Cholesterol and mad-cow-disease are ranked lower.
- Consumers generally believe that the Ø-label is more comprehensive than it actu-

- ally is. 6% have all answers right. Most consumers are confused about rules for packaging and energy.
- Trust in Ø-label is lower than in previous Danish studies.
 - Note that only 24% agree that organic convenience food is not trustworthy.
 - Order of valued attributes does not vary across organic product types.
 - Avoidance of chemicals is a top concern and top valued product attribute for organic foods.
 - Very few Danish consumers value local/small-scale production. Consumers willing to pay more for organic foods value it more.
 - 15% value 'organically produced' more than other product attributes.
 - 64% of consumers lack confidence in imported organic foods.
 - Gender, presence of children and age have no importance.
 - Barriers to non-buyers of organic foods are 'not enough time to search for organic products', 'not enough knowledge about organic products', 'too high prices', 'appearance', 'organic products going bad to fast', 'lack of trust in control', and 'no observed taste difference between organic and conventional products'.
 - Consumers willing to pay more for organic foods are less willing to support their local grocery store – most probably because small, local stores most often hold little supply of organic foods.
 - Consumers that are willing to pay more for organic foods are more concerned for salmonella than non-buyers.
 - In general, consumers that are not willing to pay more for organic foods have higher trust in not getting ill from food, and buyers have higher disbelief in conventional food industry.
 - Consumers willing to pay more for organic foods understand Ø-label a little better.
 - Consumers willing to pay more for organic foods knew Swan label (an environmental label) better before TV campaign, but not after.
 - Consumers not willing to pay more for organic foods also value low prices more in general.
 - Consumers not willing to pay more for organic foods have lower trust in foreign organic products.
 - Some differences in environmental behavior are observed between buyers and non-buyers, and less environmental knowledge is observed among non-buyers.
 - Twice as many consumers that are willing to pay more for organic foods (than those not willing to pay more) have been members of an organization, because it protects nature.
 - Consumers willing to pay more for organic foods feel to a much higher extent that consumers are responsible for environmental degradation.
 - Consumers not willing to pay more for organic foods have lower trust in highly processed organic food and organic convenience food.
 - Consumers that believe organic products are more healthy and more environment friendly, also buy organic products.
 - No significant differences between buyers and non-buyers in
 - being embarrassed by buying eggs from hens in small cages,
 - valuation of nutrition, freshness, low-fat products, easy to prepare food,
 - concern for BSE, GMO's, contaminated foods and pesticide/medicine residues,
 - understanding and perceiving the Swan label.

Comparison of stated and revealed preferences

For this part of the study, questionnaire data was not available yet. Instead, we use pre-test data from a sample of 400 respondents. The pilot study was mailed to 400 households, representatively distributed across geographical regions and within each region, randomly chosen. The response rate was 31 per cent. The questionnaire consisted of four sets of questions: questions on purchase habits and food culture (choice of store, important product characteristics, statements on risks from eating certain foods), questions on organic food production (identification of the Danish O-label, statements on organic production and its effects), questions on habits and environmental attitudes (use of recycled toilet paper, aluminium foil, membership of environmental associations, statements on the consumer's role in environmental protection), and finally questions on willingness to pay for organic milk. The respondent had to indicate whether (s)he agreed with the attitudinal questions on

a scale from 1 to 5. The respondents who stated a positive willingness to pay were asked a follow-up question asking them to rate whether different characteristics of the organic product were more or less important in their decision to pay more for the organic product (taste, absence of pesticide residue, environmental concerns, good conscience).

A large part (59%) of the pilot sample are willing to pay more than the stated conventional market price for milk. Average stated willingness to pay is a price premium of 32% for a litre of milk. In comparison, purchase data during June 1st 1999-May 31st 2000 shows that on the market, 55% of all consumers in the household panel are willing to pay more for organic milk. The average price premium (revealed willingness to pay) - estimated from purchase data - is 24% for organic milk. Thus, the consumers are on average actually paying less for organic milk than they state they are willing to pay. This may indicate two things: First, consumers may state they are willing to pay more than they actually are, suggesting that contingent valuation may be associated with uncertainty. Alternatively, the results may indicate a considerable consumer surplus, as consumers would be willing to pay more than they actually are.

As part of the analysis of the pilot study, we performed logistic maximum likelihood estimates on the probability of being a BUYER, defined as willing to pay more for organic milk in the survey. We used the attitudinal information in the questionnaire to construct indicator variables for environmental behaviour and awareness, health risk concern, nutrition concern, good conscience from buying organic products, price sensibility, and the attitude towards the statement that 'environmental problems are exaggerated'. We also constructed an indicator variable based on attitudes towards three statements on the impact of consumer behaviour on the environment.

The estimated model seems to generate good predictions of buyer behaviour, with the model correctly predicting buyer rate for 82% of the sample. Among the significant variables, price consciousness and the belief that "environmental problems are exaggerated" decrease the probability of being willing to pay for the four products by about 100%. The presence of small children in the household has a positive significant influence on the probability of being willing to pay more. However, based on this limited sample, we did not find any significant impact of the indicator variables on health, nutrition and environmental awareness.

Evaluation of the importance of environmental and animal welfare labelling

The purpose of this study is to estimate marginal willingness to pay for eggs carrying different labels. Among other things these labels indicate environmental features and different levels of animal welfare for the hens that produce the eggs. Detailed data on eggs are available during the one year period from July 1999 to June 2000.

Compared to simple statistics, such as the average market share of different egg types, econometric estimations make it possible to disentangle the effect of labels from the effects of e.g. differences in prices. Discrete models such as the multinomial logit make it particularly simple to estimate the willingness to pay for different characteristics of goods, in this case different labels. Had the purpose been to estimate substitution effects, a continuous model would have been used instead.

The estimations are conducted using the new and flexible Mixed Multinomial Logit model (MMNL) also known as Random Parameter Logit (RPL). Mixed multinomial logit allows heterogeneity among households by letting the parameters of the household utility functions be drawn from a common distribution instead of restricting them to be identical for all households. Estimating the parameters of the *distribution* of the parameters of the utility functions yields not only a measure of the marginal willingness to pay for different types of eggs, but also a measure of the degree of heterogeneity among the households.

The eggs are divided into battery eggs ('buræg'), barn eggs ('skrabe æg'), free-range eggs ('fritgående') and organic eggs ('økologiske') and the marginal willingness to pay for the three last types relative to battery eggs are estimated. The marginal willingness to pay for different types of eggs turns out to vary with the chain of stores in which the purchase is made. Econometric estimations using store-level data reveals that customers in some stores (e.g. Superbrugsen) are generally willing to pay for labels indicating environmental and animal friendly production methods, while customers in other stores (e.g. Bilka) are reluctant to do so. Combining data from many different stores leads to contra-intuitive results caused by the high level of heterogeneity among customers, prices and variety in the different stores.

It is found that models allowing the consumers' evaluation of the different labels to vary with background characteristics, such as the geographical location of the household residence, are sig-

nificantly better than models ignoring background variables completely. Models allowing the evaluation to vary with attitudes, such as attitude to branded goods, are also significantly better than the model ignoring these effects. The effect of the age of the main buyer is, in most cases, not significant.

It is reasonable to expect the value of different labels to vary between households. Animal welfare may be very important to some households, but have little or no value in other households. These differences are perceived as 'heterogeneity of preferences' in the econometric model. The labels 'barn eggs' and 'free-range eggs' mainly indicates increased animal welfare, whereas the 'organic' label indicates a more environmentally friendly production as well as a higher level of animal welfare. Some households may also perceive the organic eggs as being healthier than other egg types because the hens are fed with organic feed. The heterogeneity of marginal willingness to pay for organic eggs can therefore be induced by differences in the perception and evaluation of at least three different attributes, whereas the heterogeneity of marginal willingness to pay for barn and free-range eggs is expected to arise only from differences in perception and evaluation of animal welfare. Data supports this hypothesis as the estimated heterogeneity of marginal willingness to pay is generally higher for organic eggs than for the two other egg types.

Work Package 2:

The work in WP2 was initiated pr. 1st of december 2001. For the past 8,5 months the project has been running, a major part of the activities have been directed towards establishing a professional network to strengthen the theoretical articulation as well as the practical relevance of the project. Activities include :

- Establishment of collaboration with Ph.D.-student Nina Kirstine Brandt, University of Copenhagen. In her own Ph.D.-project, she is working with the historical development of organic and biodynamical farming, and the project carries many thematic similarities with WP2.
- Establishment of collaboration with Ph.D.-student Martin Haring Boll from Danish Technical University (DTU) and Ph.D.-student Dorthe Ilsøe from Roskilde University (RUC). Co-funded by the Danish Consumer's Council, they conduct projects on consumer's expectations to organic foods. The collaboration includes the exchange of empirical data and coordination of collection of data, as well as ongoing discussion of theoretical perspectives on the projects.
- Initiation of collaboration with research group from DTU (Niels Heine Christensen, Thorkild Nielsen, Maria Bruselius and Mette W. Hansen), who works on the EU-funded project OMIARD. The OMIARD project conducts case studies of organic distribution networks as a part of an European study. The collaboration includes exchange of data, when possible, and coaching of each other's activities.
- Establishment of network with Egon Noe, a former colleague from the Danish Institute of Agricultural Sciences, Department of Agricultural Systems, and Hugo F. Alrøe, DARCOF, who will be coaching the Ph.D.-project.

There has been made a selection of cases for WP2. The following examples of organic producer-consumer networks will be studied in the project:

Case	Description	Contact initiated
Thise Mejeri (Thise Dairy)	Share-based cooperative dairy; producer controlled; relatively traditional distribution methods	x
Bageriet Aurion (The Bakery Aurion)	Bakery and mill; initially consumer owned; biodynamical products, sold via health shops	-
Økoterminalen i Tinglev (The organic freshware terminal in Tinglev)	Organic freshware terminal, based in Southern Denmark; producer owned; went bankrupt in 2001	x

Årstiderne.com	Web-based vegetable box scheme; private ownership (stocks)	x
Spidsroden	Cooperative farm outlet in downtown Copenhagen; consumer controlled	-
Landbrugslauget	Danish CSA (community supported agriculture); consumer owned and collectively organised	x

During the summer of 2002, contact to the various networks has been initiated, and most of the approached persons have agreed to participate in the project via interviews or supply of data.

C.2 Fulfilment of tasks and deadlines

WP1 Consumer preferences and demand: potentials and barriers for market expansion	Time schedule according to application	Deviations, if any*
Task		
T1 Specification of the theoretical model taking outset in literature and focus group interviews	2001-2002	
T2 Design of questionnaire through use of focus groups and tests	2001	
T3 Surveying the questionnaire	2001	
T4 Estimation of price and income elasticities of various products	2001-2002	
T5 Investigation of alternative model approaches Implementing relevant socio-economic and demographic variables, plus underlying attitudes	2002	
T6 Evaluation of the implications of the estimated price sensitivity of demand for organic foods, including evaluation of the effect of economic policy instruments such as levies and subsidies	2002	
T7 Examination of difference between postulated and observed willingness to pay	2002	
T8 Identification of differences in purchasing motives, attitudes towards convenience food and towards alternative sales channels and processing technology and in the demand across consumer groups.	2002-2003	
Deliverables		
D1 Working paper with literature review	12.2000	
D2 Time table version 2	11.2000	
D3 First annual status report	11.2000	
D5 Working paper on Modeling and Estimation Approach	06.2001	
D6 Working paper on Interviews and Questionnaire	06.2001	
D7 Time table version 3	10.2001	
D8 Second annual status report	10.2001	
D9 Working paper documenting results from questionnaire	01.2002	
D10 Int. paper on the importance of prices and income for different types of organic products	04.2002	12.2002
D11 Int. paper on the importance of sociodemographics	09.2002	12.2002
D13 Int. paper with examination of difference between stated and observed willingness to pay	11.2002	06.2002
D14 Int. paper on differences in purchasing motives, willingness to pay and socio-demographic variables	11.2002	02.2003
D15 Int. paper with differences in attitudes towards convenience food and alternative sales channels	11.2002	02.2003

D16 Time table version 4	10.2002	
D17 Third annual status report	10.2002	
<i>Additional deliveries, not in application</i>		
IFOAM Conference paper	08.2000 (not planned, additional work)	
EAERE Conference paper	06.2001 (not planned, additional work)	
Article accepted in British Food Journal	06.2001 (not planned, additional work)	
Working paper documenting Household Panel Data	09.2001 (not planned, additional work)	
Working paper on Modeling Demand for Organic Products – Implications for the Questionnaire.	06.2001 (not planned, additional work)	
Contribution to SJFI report	06.2001 (not planned, additional work)	
An oral presentation on preliminary results at a Seminar on Animal Welfare at the Swedish University of Agricultural Sciences	11.2001 (not planned, additional work)	
5 popular articles	2000-2001(not planned, additional work)	
2 oral presentations at meetings	2001(not planned, additional work)	
CAM presentation	06.2002 (not planned, additional work)	
OECD paper	09.2002 (not planned, additional work)	
Article accepted in Nationaløkonomisk Tidsskrift	2002 (not planned, additional work)	
Article submitted to Journal of Science of Food and Agriculture	2002 (not planned, additional work)	
Working paper on environmental and animal welfare labelling	10.2002 (not planned, additional work)	
An oral presentation at a workshop at Institute of Fiscal Studies, UK.	10.2002(not planned, additional work)	
Int. paper on price and budget sensitivity in demand for organic foods	12.2002 (not planned, additional work)	
Int. paper on revealed preferences (characteristics model) for milk	12.2002 (not planned, additional work)	
Milestones		
M1 Decision of modeling approach	06.2001	
M2 Completion of analysis of the importance of prices and income	04.2002	11.2002
M3 Completion of the analysis of socio-demographic variables	09.2002	12.2002
M4 Results from final questionnaire collected	04.2002	09.2002
M5 Comparison of stated and observed willingness to pay	11.2002	06.2002

WP2 Alternative distribution channels: driving forces and potentials	Time schedule according to application	Deviations, if any*
Task		
T1 Final description of PhD Scholarship for advertising	2000	
T2 Appointment	2001	
T3 Final description of educational program for appointed scholar	2001	
T4 Preparing historical review	2001-2002	
T5 Selection of adequate cases	2001-2002	
T6 Selection of adequate evolutionary theories	2001-2002	
T7 Preparing case studies	2002-2004	

Deliverables		
D4. Working paper: Historical Review	04.2002	11.2002
D12 Working paper: Theoretical foundation	09.2002	
<i>Additional deliveries, not in application</i>		
1 popular article	06.2002 (not planned, additional work)	
2 oral seminar presentations	2002 (not planned, additional work)	
Milestones		
M1 Final appointment	12.2001	
M2 Final selection of cases	06.2002	
M3 Presentation of D4	07.2002	12.2002
M4 Presentation of D12	09.2002	

* Deviations are to be further discussed in D.

D. Description of deviations and subsequent adjustments of plans

Work Package 1:

It turned out to be very time consuming to elaborate the exceptionally detailed panel data set. For that reason, WP1 has been slightly delayed, and some papers will be finished some months later than planned in the application (D10, D11, D14, D15). On the other hand, we have made some additional deliveries, not planned in the application (cf Table C.2). One paper (D13) was finished before it was due, but will be updated with most recent questionnaire data.

Work Package 2:

Due to an unexpected workload with the theoretical foundations of the project, D4 is delayed till November 2002. Correspondingly, M3 (presentation of D4) is delayed till December 2002.

E. Project publications and other products

1. Articles in international, scientific journals with review procedures

Wier, M. and C. Calverley (2002): Market Potential for Organic Foods in Europe. *British Food Journal*, 104:45-62.

Wier, M. and S. Smed (2002): Forbrug af økologiske fødevarer (Consumption of organic foods). Accepted for publication in *Nationaløkonomisk Tidsskrift*.

Hansen, B., H. Fjelsted Alrøe, E.S. Kristensen og M. Wier (2002): Assessment of food safety in organic farming. Submitted to *Journal of the Science of Food and Agriculture*.

Browning, M. L.M. Andersen. L. Blow, and I. Crawford (2002): A Nonparametric Characteristics Model of the Demand for Milk (*in preparation*).

2. Presentations at congresses, symposiums etc.

Wier, M. and S. Smed (2000): Modeling demand for organic foods. The 13th International Scientific IFOAM Conference, Basel, Switzerland, 28-31 August 2000.

Wier, M., L.G. Hansen and S. Smed (2001) Explaining Demand for Organic Foods. *Paper presented at the 11th annual EAERE (European Association of Environmental and Resource Economists) Conference*, June 2001, Southampton, UK.

Millock, K. (2001): Explaining Consumer Demand for Organic Food : A Survey on Danish Consumers. *Seminar on Animal Welfare at the Economics Department, Swedish University of Agricultural Sciences*, Ultuna, November 2001.

Millock, K., L.G. Hansen, M. Wier, and L. M. Andersen (2002) Willingness to Pay for Organic Foods: A Comparison between Survey Data and Panel Data from Denmark. *Paper presented at the 12th annual EAERE (European Association of Environmental and Resource Economists) Conference*, June 2002, Monterey, USA.

Browning, M. (2002) Revealed Preferences for Milk. Presentation at the CAM (Centre for Applied Microeconometrics) *Workshop on Characteristics Models*. University of Copenhagen, June, 2002

Ian Crawford, M. Browning and L.M. Andersen (2002): Nonparametric tests of the consumer characteristics model. *Workshop at Institute of Fiscal Studies*, London, October 14th, 2002.

Wier, M, L.G Hansen, L.M. Andersen and K. Millock (2002): Consumer preferences for organic foods. Paper prepared for an *OECD Workshop on Organic Agriculture*, 23-26 September, Washington D.C.

3. Reports, articles in agricultural journals etc.

Wier, M. (2000): Væksten i forbrug af økvarer. *AKF Nyt* 2/2000.

Wier, M. (2000): Prisfølsomt økoforbrug. *Økologisk Jordbrug*, No. 218, 20. årgang, 2000.

Wier, M. (2000): Dansk undersøgelse om forbrug af øko-varer. *Forskningsnytt om økologisk landbrug i Norden*, No. 4, 2000.

Wier, M. (2000): Forbrug af økvarer. *Forskning i Økologisk jordbrug, Nyhedsbrev fra FØJO*. Sommer 2000.

Wier, M. and L.M. Andersen (2000): Studies on Consumer Demand for Organic Foods – a Survey. Working paper #1, AKF

Wier, M (2001): Markedspotentiale og merpriser, in Christensen, J. and S.E. Frandsen (2001): Økonomiske perspektiver for økologisk jordbrug. SJFI report #124, SJFI, Copenhagen.

Wier, M. (2001): Forbrugernes efterspørgsel genstand for forskning. *Økologisk Jordbrug*, No. 252, Vol. 21.

Andersen, L.M. (2001): Documentation of household panel data. *Working paper #2*

Wier, M. and L.M. Andersen (2001): Designing and Testing the Questionnaire – Results and Considerations. *Working paper #3*, AKF

Hansen, L.G. (2001): Modeling Demand for Organic Products - Implications for the Questionnaire. *Working paper #4*, AKF.

Hansen, L.G. (2001): Demand for Organic Products - Specification of Functions to be Estimated. *Working paper #5*, AKF.

Andersen, L.M. (2002): Consumer Evaluation of Environmental and Animal Welfare Labelling: An Econometric Analysis on Panel Data Using Mixed Multinomial Logit. *Working paper #6*, AKF

Kjeldsen, C. (2002): Samfundsvidenskabelig bæredygtighedsteori. (*Social scientific sustainability theory*) Working Paper #1, Aalborg University.

Kjeldsen, C. (2002): Bæredygtige producent-forbruger netværk? (*Sustainable producer-consumer networks?*) Forskningsnyt for Økologisk Jordbrug i Norden, Summer 2002.

4. Other presentations, public meetings, field days etc.

Wier, M (2001): "Relationer mellem forbrugere og producenter". Presentation at Summer Meeting on "Principles and Goals for Organic Farming" at Askov Højskole, June 21st, 2001.

Wier, M (2001): "Markedspotentiale og merpriser". Presentation at SJFI Seminar on "Economic Perspectives for Organic Farming" at Falconer Conference Center, June 7th, 2001.

Kjeldsen, C. (2002): *Økologiske producent- forbruger netværk i et bæredygtighedsperspektiv. (Organic producer-consumer networks in a sustainability perspective)* Presentation for researchers at Danish Institute of Agricultural Sciences, Department of Agricultural Systems, the 22th of february 2002.

Kjeldsen, C. (2002): *Tendenser i økologisk jordbrug og fødevarerproduktion. (Tendencies in organic farming and food production)* Presentation at SOAR (Research School for Organic Farming) biannual seminar 8th of may 2002 at Roskilde University

F. Scientific education

In Work package 2, Chris Kjeldsen is currently enrolled in a PhD scholarship. Besides ordinary PhD education, he attends the following

- In April 2002 the course "The Craft of Making Social and Political Science" at Department of Economics, Politics and Public Administration, Aalborg University, was completed. The course was about social scientific methodology and the project was presented and critiqued among the participants in relation to the methodological principles presented in the course.
- In early October (from 7th through 11th october 2002) he will be participating in the SOAR (Research School for Organic Farming) summer school, entitled "Research Methodologies in relation to Principles and Practice of Organic Agriculture".

- In late October (from the 21st through the 24th of October 2002) he will be participating in the Ph.D.-course "Sustainability and Empirical Research", which is being held at Roskilde University. The lecturer of the course will be Wolfgang Sachs from the Wuppertal Institute, Germany.

We will raise funding for a PhD scholarship for Laura Mørch Andersen. The scholarship will be on the issues of consumer preferences for organic food attributes and attitudes towards organic standards in an international perspective.

G. National and international cooperation

National co-operation

We have appointed a coordination group, in which we gather contact persons from other related ongoing projects, and discuss our research results. The group meets twice a year. Mette Wier is responsible for arranging, planning and chairing all meetings. The purpose is to

- exchange ideas,
- disseminate preliminary and final findings from the projects to other researchers,
- discuss methods,
- elaborate on results from the projects, and finally
- coordinate the projects, to ensure we base our research on previous findings.

The coordination group has the following members:

- Suzanne Beckmann, Copenhagen Business School
- Helle Bossen, The Organic Service Center
- Thomas Roland, The Danish Consumer Council
- Tino Bech-Larsen and John Thøgersen, Aarhus Business School
- Søren Frandsen, Sinne Smed and Jørgen Deigaard Jensen, FOI - Danish Institute of Food Economics
- Niels Heine Kristensen and Martin Harring Boll, DTU - Technical University of Denmark
- Dorthe Ilsøe, RUC - Roskilde University
- Bea Nielsen, KVL - The Royal Veterinary and Agricultural University
- Jan Holm Ingemann and Chris Kjeldsen, Aalborg University
- Lars Gårn Hansen, Laura Mørch Andersen and Mette Wier, AKF - Institute of Local Government Studies

International co-operation

The French institute CIRED is a partner in the project.

GfK, another partner in the project, is an international institute having departments in several European countries. Data from one of these countries (UK, Germany, Sweden or France) will be applied in the project.

Our questionnaire was kindly commented by Per-Olof Johansson, Stockholm School of Economics, Peter Frykblom, Appalachian State University, NC. Nancy Bockstael, University of Maryland, and Alain Carpentier, INRA, France

We have established close contact with Dr. Ian Crawford, who has visited us for two days in October 2001, and we have begun writing papers with him. Ian Crawford is Director at Institute for Fiscal Studies (Consumption and Savings Research), Deputy Director at Centre for Microdata

Methods and Practice, and Research Fellow at Department of Economics, University College London, UK.

We have contact with Professor Gary Thompson, University of Arizona, Department of Agricultural and Resource Economics. Gary Thompson works with micro-estimations on demand for organic foods himself.

We are participating in an Expression of Interest under the EU Commission's Framework 6: Food quality and Safety in the European Organic Supply Chain. We are currently involved in preparing a project proposal.

H. Critical reflection on the project

WP1:

Organic farming is pesticide free and is attributed a number of other environmental advantages as well. This is why increasing the proportion of cultivated area that is organically farmed is an important element of Danish environmental policy.

Accurate estimates of current organic food demand functions are important steps towards assessing the feasibility of large increases in Danish organic food production. However, understanding and quantifying the underlying motives for organic food demand is also important for at least three reasons.

- First, organic foods are an emerging market where development of products in new areas and consumer learning of product attributes may cause substantial shifts in demand functions. A good understanding of motives and valued attributes is essential if meaningful predictions of such shifts are to be attempted.
- Second, such an understanding is also essential for assessing the future role of alternative versus conventional sales channels, different types of information and labeling strategies and, ultimately, alternative development strategies for organic farming practices.
- Third, such an understanding is important for assessing potential sales on export markets. A good understanding of the importance of differences in supply channels, labeling, price premiums and consumer demand across countries is a prerequisite for exploiting potential demand abroad.

In our project, we have access to a unique panel data set (Danish as well as foreign), in combination with elicited information from interviews on underlying attitudes and valued attributes. Thus, we hope to be able to shed new light on the structure and relative importance of various motives for purchasing organic foods within various consumer segments. However, it requires considerable time to handle, organize, elaborate and utilize the very extensive and detailed data set, encompassing more than 5 million observations of purchase acts. It turned out to be more time demanding than we expected, and this is especially due to three circumstances

- The purchase data is observed at a highly disaggregated level. To analyse, we need to aggregate. Aggregating properly, however, requires full understanding of detailed codes and specifications.
- It is not straightforward to assign proper prices for the alternative goods the consumer is facing in the shopping situation, but is not buying. In purchase data, we only have prices for goods actually purchased.
- It is not straightforward to identify problems of supply shortage, which is very common for organic products. We can see from purchase data when a certain good is not sold, but we cannot tell whether the good was not supplied, or whether it was not chosen by the consumer. This has required some time to handle.
- The purchase data was created in GfK for non-research purposes. This means that there is considerable lack of continuity and consistency across time periods. Thus, the number and meaning of codes and variables may differ from one period to another. This has required some time to straighten out.

In 2003, we turn to a selected export market. Consumption of organic foods at the Danish market is currently stagnating, and has been so for a couple of years. This means that future growth in consumption of Danish organic products will probably call for product development (more processed and elaborated organic products) as well as further export. For that reason, analyses of markets abroad are highly necessary – and more relevant than ever. This means that the part of our product focussing on foreign markets should not be reduced.

We have learned however – from our experience with Danish GfK data – that we need to focus on certain commodity groups and restrict the analysis in this way. Otherwise we will not have the time to analyse all the aspects we have planned in the project proposal. Focussing on certain, carefully selected, commodity groups on the export market will leave time for a comprehensive market analysis.

Some other issues currently discussed at home and abroad, are consumer attitudes towards organic production standards, future application of GMO's in organic production, food safety and consumer risk perception, and finally the importance of information provision to consumers, by e.g. labelling. Organic production standards are developing and changing in these years, and so is labelling strategies. These topics are encompassed in our project, but we attempt to handle them in more detail than originally planned. Among other initiatives, we have changed the first version of the questionnaire to handle these questions in a more comprehensive way.

WP2:

The establishment of a theoretical foundation for the project has proven to be a time-consuming task. One reason is the obvious lack of truly integrative, multi- or transdisciplinary studies of organic producer-consumer networks, or organic food networks. Existing studies seem to be either discipline specific (for example studies within established disciplines as marketing, export economy, agricultural economics etc.) or sector specific. Sector specific studies include studies such as (organic) farm economy, consumer studies, studies of development in the cooperative sector and other types of studies, where one of the processes involved in the operation of the whole network is considered. But examples of studies, which include production, distribution as well as consumption in the area of study, are very rare. There can be found examples of approaches, for example actor-network theory (ANT), which at least in theory claims to embrace all of these dimensions of food networks. But one common characteristic for these approaches is the lack of a sound empirical grounding.

The approach so far developed in the project is therefore a multidisciplinary approach, drawing on insights from a diverse range of scientific disciplines such as (agricultural) political economy, rural sociology, ecological economics, systems theory, environmental sociology and evolutionary/institutional economics. This has so far meant a heavy workload in terms of accessing many different approaches and viewpoints on food networks, thereby delaying the collection of empirical data and completion of the historical review.

8. Budget

A. Account for any change in budgets

B. Budget for the whole project (1.000 DKK)

Total consumption of funds from DARCOF and expected consumption this year and coming years

Year:	Consumption before 2002	Expected consumption 2002	2003	2004	2005	Total
Man-months						
Scientific personnel	19.9	21.2	20.2	3.2		64.5
Technical personnel	10.1	6.5	6.4			23

Year:	Consumption before 2002	Expected consumption 2002	2003	2004	2005	Total
Salaries						
Scientific personnel	737	768	740	99		2344
Technical personnel	205	134	133	2		474
Other operational costs	196	290	217	5		708
Equipment						
Others (please specify)						
Direct costs	1138	1192	1090	106		3526
Indirect costs (20% of direct costs)	227	238	218	21		704
Total	1365	1430	1308	127		4230

Comments:

WP1: As we have planned to study export markets in 2003, we will prefer to postpone paying for the corresponding data until after delivery in 2003. Also, we have paid for the Danish data in 3 parts, during 2001 and 2002. This means that for "Other operational costs", we wish to transfer DKK167000 from 2001 to 2003 and DKK30000 from 2002 to 2003. Numbers in **bold, italic** are changed.

9. Signatures and stamps

Name	Institute	Date	Signature
Head of project Associate professor Mette Wier	AKF Nyropsgade 37 Copenhagen	30.09.02	

Appendix I. Detailed budget

A. Budget for each participating institute (1.000 DKr)

Name of Institute: AKF (including GfK Denmark and CIRED)

Year:	Consumption before 2002	Expected consumption 2002	2003	2004	2005	Total
Man-months						
Scientific personnel	19.5	16	15	1		51.5
Technical personnel	10.1	6.5	6.4			23.0

Year:	Consumption before 2002	Expected consumption 2002	2003	2004	2005	Total
Salaries						
Scientific personnel	728	606	578	35		1947
Technical personnel	205	134	133	2		473
Other operational costs	191	285	212			688
Equipment						
Others (please specify)						
Direct costs	1124	1025	923	37		3109
Indirect costs (20% of direct costs)	225	205	184	7		621
Total	1349	1230	1107	44		3730

Comments:

WP1: As we have planned to study export markets in 2003, we will prefer to postpone paying for the corresponding data until after delivery in 2003. Also, we have paid for the Danish data in 3 parts, during 2001 and 2002. This means that for "Other operational costs", we wish to transfer DKK167000 from 2001 to 2003 and DKK30000 from 2002 to 2003. Numbers in **bold, italic** are changed.

B. Budget for each participating department (1.000 DKK)

Name of Institute and department: AAU

Year:	Consumption before 2002	Expected consumption 2002	2003	2004	2005	Total
Man-months						
Scientific personnel	0.4	5.2	5.2	2.2		13
Technical personnel						

Year:	Consumption before 2002	Expected consumption 2002	2003	2004	2005	Total
Salaries						
Scientific personnel	9	162	162	64		397
Technical personnel						
Other operational costs	5	5	5	5		20
Equipment						
Others (please specify)						
Direct costs	14	167	167	69		417
Indirect costs (20% of direct costs)	3	33	33	14		83
Total	17	200	200	83		500

Comments:

C. Budget for co-financing from each participating institute (1.000 DKK)

Name of Institute: AAU

Year:	Consumption before 2002	Expected consumption 2002	2003	2004	2005	Total
Man-months						
Scientific personnel	0.6	6.8	6.8	2.8		17
Technical personnel						

Year:	Consumption before 2002	Expected consumption 2002	2003	2004	2005	Total
Salaries						
Scientific personnel	18	193	193	68		472
Technical personnel						
Other operational costs	2	52	52	21		127
Equipment						
Others (please specify)						
Direct costs	20	245	245	89		599
Indirect costs (20% of direct costs)	4	49	49	18		120
Total	24	294	294	107		719

Comments:

