

Second regional meeting, Helsinki 26-27 August 2002

The first day was devoted to a members meeting, while the second day included local stakeholders. The meetings were organised by the TTS Institute.

Members present:

Anna-Maija Kirkkari, TTS, Finland
Elina Muutoma, TTS, Finland
Gundega Lapina, LTC, Latvia
Jörg Köhn, Innovationsgesellschaft, Germany
Anna Grzybek, IBMER, Poland
Piotr Pasyniuk, IBMER, Poland
Rolf Olsson, SLU, Sweden
Tõnis Eerme, Tartu Science Park Foundation
Michael Rustand, BECT, Denmark
Finn Rexen, Bioraf, Denmark

Not present:

U.Wurdel, ATI Küste, Germany
Jan Koch, IRC, Poland
Kastytis Gecas, Lithuania Innovation Centre

Network members meeting

Agenda:

1. Welcome
2. Approval of agenda
3. Approval of minutes from first regional meeting
4. Questionnaires and virtual factories
 - a. Experiences and results from Poland (IBMER)
 - b. Experiences and results from Denmark (Bioraf)
5. First discussion on the challenges involved in establishing agro-industrial SME's in the regions around the Baltic Sea. Ways and means to overcome barriers
6. The Basan web-site
7. Meeting of thematic network co-ordinators, 23 may 2002 in Luxembourg
8. Any other business

Ad.1: Welcome

Elina Muuttomaa and Finn Rexen welcomed, and xxxx from the Central Union of Agricultural Producers and Forest owners (CUAPFO) gave an introduction to the current situation in Finnish agriculture.

Finish agriculture

CUAPFO has 180.000 members, including farmers, forest owners and rural entrepreneurs. It has 16 regional offices, and it issues a newspaper three times a week. In total there are 74.000 farms in Finland. Average farm size is 28 ha, however Finnish agriculture experiences large structural changes these years. The number of small farms is rapidly decreasing and the average farm size is increasing accordingly. The total amount of cultivated land is stable.

Finnish agriculture includes the most Nordic (altitude) situated farmers in Europe. Even arctic farming is practised in Northern Finland. The short growing season and low temperatures limit the number of crops that can be grown to ripeness.

Finland is self sufficient in food. It even has a surplus of milk that in some years surpasses the EU quota given to Finland. Surplus milk is processed into cheese and milk powder and exported to Russia, USA and Europe. Subsidies are very important for Finnish farmers economy. Finland is one of the few countries in the Union that is allowed to give national subsidies to farmers in addition to EU

subsidies. (Part of the Finnish agreement with the Commission). These subsidies may fade out during 2003, which will create serious problems for many Finnish farmers and require substantial changes in production patterns.

The government will concentrate more on rural entrepreneurs in the future. The farmers have an advisory system that is separated from the farmers union. The number of organic farmers has increased during recent years, and today organic food is produced on 120.000 ha (6 –7 % of total land), the consumption of organic food is however stagnating. As small rural enterprises like e.g. slaughterhouses have problems with hygienic standards, the animals are often slaughtered and processed in large centralised units, where also the added value is created.

Ad.2

The agenda was approved without changes

Ad.3

The minutes from last meeting were approved without changes

Ad.4

Polish agriculture

Piotr Pasyuniuk from IBMER gave a report on Polish agriculture, and he told about the results from the questionnaire survey. (The paper in its full length is attached to these minutes).

Poland is the 9th largest country in Europe with 312 000 km². The total number of inhabitants is 38,5 million, of which 38 % live in rural areas. In the year 2.000 the total number of farms was 1,9 million (in comparison there are 7 million farms in the whole of EU of 15). The number is slightly decreasing and the average size of farms is increasing. The average farm size is today 9,6 ha, which however is still much lower than the EU average of 18,4 ha.

The number of people employed in Polish agriculture and forestry is high, 18,9 %, compared to the EU average of 4,5 %. The unemployment rate in rural areas is alarmingly high – 43,8 %. Much higher than the country average of 15 %.

Major crops are cereals – 71 % of arable land – rape-seed, sugar beet and potatoes. Poland is the second largest producer of potatoes in Europe, and no. 3 in the World. Poland has a slight deficit in cereals and surplus in potatoes and sugar beet. Water resources are scarce in Poland.

Structural changes in Polish agriculture are strongly needed. The necessary financial means, however, are lacking.

Polish farmers are in general well-educated and skilled in plant growing and post harvest technologies. But most farmers are traditional farmers. Poland is not considered to be well suited for production of speciality crops like medicinal plants and non-food crops due to low soil fertility. (This statement may not be totally correct in all cases. In fact many non-food crops are well suited for poor soils – e.g. lupins and some cereal varieties).

Polish farmers in general are conservative, however the number of farmers willing to change traditional production practises is growing. They have however poor access to information and education concerning e.g. new farming systems, business planning, book keeping etc.

Summary of responses to questionnaires

1. Investment strategy

Investors' interest in agro-biotechnology is high, while the interest in investing in plant and animal production is low. The agro-sector is considered to be a low-profit area, and the pay back time for investments is too long for most investors.

2. Investment in agro-bioindustries

Investment banks, investment funds and local authorities prefer to invest in projects that:

- Create new jobs
- Improve infrastructure
- Are environmentally friendly

3. Major barriers for creating new value added enterprises

There are many barriers to overcome for entrepreneurs, who might want to establish new agro-industrial enterprises in the rural districts in Poland. For example:

- Poor infrastructure
- Location far from the markets
- No access to technical and financial advice
- No local investment and venture capital
- No easy access to public funds due to low interest in financing bio-based activities amongst local investors.
- No access to skilled labour
- Farmers have no experience in specialised crops
- Weak agro-business base
- No interest amongst producers to change field of activities
- No access to incentives like:
 - o Tax abatements
 - o Low-interest loans
 - o Public assistance to venture companies
 - o Reduction in start-up costs for new businesses
 - o Training and education of workforce
 - o Access to know how and technical support

4. Willingness to change traditional production practise

Young farmers do realise the needs for changing the traditional way of thinking, and they are willing to change to new crop varieties and introduce new crops, and even to create small enterprises based on new technology. They are also interested in co-operation with research centres and universities.

5. Trends based on present situation

The current trends are:

- Decrease in number of farms
- Increase of farmland value
- Increase in production in wheat, oil-crops, protein crops and speciality crops, but decrease in rye production.

There is a considerable political interest in bio-fuel, and a political initiative concerning distribution and utilisation of bio-fuels such as bio-diesel and bio-ethanol will soon be launched. Bio-diesel and bio-ethanol production is cheaper and more rational in large factories. It might however be difficult to collect sufficient raw-material for a large factory due to a poor infrastructure (roads etc.) in the rural areas.

The consumption of diesel-oil in Poland is 6.5 million tons, and the Polish potential for rape-seed production amounts to 2,8 million tons. 800.000 tons are needed for food leaving approximately 2 million tons for production of 600 million litres of bio-diesel; 7 % of current consumption of diesel-oil.

A centre for technology transfer in Czestochowa is under consideration. The centre shall focus on transfer of advanced technology in the agro-business sector. The experience from Basan will be taken into consideration.

Poland is one of largest agricultural countries in Europe with good potentials for expansion, and the inclusion in the EU Union might result in an (expensive) increase in the surplus production of food in Europe. The enlargement negotiations with Poland might therefore result in measures to reduce food production or retain the production on the present level. One such measure could be that a certain amount of agricultural land (up to 30 % has been mentioned) in Poland will be characterised as set-aside land. This could give a large boost to non-food productions such as fibres, chemicals and bio-fuels, as the set aside subvention presumably will be given, also when the land is used for non-food purposes. (This is the way the present set-aside system works in the EU). And in the end this would create new activities and increase employment in rural areas.

Bornholm - Denmark

Michael Rustand presented a summary of the Bornholm report. The report has been distributed to Basan members, and it is available on the Basan intranet.

The unemployment rate on Bornholm is higher than average in Denmark (9,7 % versus 4,6 %), but considerably lower than in Poland.

A large number of innovation tools and incentives are available for entrepreneurs, who want to start new businesses on Bornholm. Thus the Danish state and local authorities have established a good public environment for a dynamic business climate, although so far with little avail concerning establishment of new production companies and industrial jobs. As a matter of fact the number of jobs on Bornholm has declined during recent years.

This situation may partly be due to the fact that the main innovation barrier, the remote position of Bornholm, cannot easily be overcome. In addition there are no higher education possibilities, and the entrepreneurial spirit is low.

Virtual factories

Before the meeting in Warsaw all Basan members were sent a business plan for the Baltic protein factory. And immediately before this meeting a business plan for the virtual Nutri wheat factory was distributed.

The first factory project the Baltic Protein- was straightforward, while the Nutri wheat project is much more complex.

The Baltic protein project is based on pilot and semi- commercial experiments and preliminary market tests. And the business plan is like any other business plans on new projects.

The stakeholders on Bornholm have not been confronted with the Nutri wheat project. They have only seen the Baltic Protein project.

Farmers

The Baltic protein project shall use lupins as raw-material. Lupins are not grown on Bornholm, however the farmers, according to the farmers union, were positive towards an introduction of this new crop. On certain conditions however. The profit should not be lower than from traditional productions – cereals and rape-seed- and the investments in additional harvesting and post harvest equipment must not be too high.

They are however, very reluctant to participate financially in the establishment of an industrial production unit. (Perhaps due to past experience)

In conclusion, the farmers are good at adapting to changing conditions and they are willing to change traditional production practise. Today up to 10 % of total arable land on Bornholm is used for growing speciality crops, which is more than in the rest of Denmark.

Investment funds

Also the regional investment funds on Bornholm were positive towards the protein project.

The Private Fund- Sparekassen Bornholms fond seldom supports the establishment of new companies, it is however not excluded that they may participate in a financing package including banks and investment funds. The Fund itself does not have the necessary expertise to evaluate the business plan. Therefore their involvement will depend on expert evaluations from interested banks and investment funds. They might also support part of development work linked to the establishment.

The public Fund: Bornholms Erhvervsfond is also positive towards the Baltic Protein project and might be able to give financial support, provided the business plan, including calculations and markets analysis are realistic. The Fund may also participate actively in the eventual modification and fine-tuning of the business plan.

Both investment funds stated very clearly that a final accept of the project will depend very much on the management of the project. They have to be convinced that the management team is dynamic and has the necessary entrepreneurial spirit. This is perhaps the main obstacle for innovation on Bornholm. It will be very difficult to find an appropriate management team locally.

This is perhaps a major problem that Bornholm has in common with most rural regions in the Baltic Sea area. There are too few local dynamic entrepreneurs. Therefore they have to be imported from elsewhere. And this is certainly not an easy task. How does one persuade entrepreneurs to move to these remote areas.

Ad.5

First discussion on the challenges involved in establishing agro-industrial SMEs in the Baltic Sea regions

Jörg Köhn

In Mecklenburg-Vorpommern only 20 % of the farmers own their own land. The majority, 80 %, of the farmers, live on rented land. Most farmers on rented land have a strong wish to own their land, and those who own land are very much motivated to buy new land and to buy quotas in order to be able to expand (animal) production.

When local authorities expropriate privately owned farmland for public purposes, city expansion, airports etc., they give in exchange the involved farmers new land from the pool of agricultural land rented to other farmers. This practise is naturally disturbing any long term planning by the farmers on rented land, and therefore there is a tendency amongst those farmers only to plan on a very short-term basis.

Most farmers have for the above reasons no incentives to invest in e.g. production plants or any other activities that are not directly related to their core business. To this comes that banks only take land assets into consideration, when farmers apply for loans.

Foreign investors, especially Dutch farmers, who see no possibility for expansion in Holland, increasingly buy land in Mecklenburg-Vorpommern. They are in no way interested in developing the rural communities. They do not live in the area, but run their farms through local machine stations.

The farmers in Mecklenburg-Vorpommern are not only against investments in non-core activities, they are also very reluctant to be involved in contract farming. The following specific case was mentioned:

A group of investors wanted to establish a RME factory and offered the farmers a ten year contract for delivery of rape-seed. The price was fixed at current rate. If prices should drop during the contract period, the involved parties shared the risk. If the rape-seed price was increased above the fixed price, the farmers were compensated with shares in the company. That would have as effect that the farmers in the end might take over the ownership of the factory. The farmers did not accept those terms, and the factory was not built.

Industrial entrepreneurs, who want to establish new productions, have to invest at least 25 % of their own money, 35 – 50 % may be given as state subsidy, and banks and investment companies may finance the rest. (At a favourable interest rate). It is however very important for investors, that long term contracts on raw-material supply are signed.

A considerable amount of land is so-called environmentally sensitive areas, for example 200.000 ha of wetland is only used for grassing. These areas are heavily subsidised.

In Germany, like in other EU countries, not all categories of productions can be subsidised. For example: There is an over-capacity of slaughterhouses in Mecklenburg-Vorpommern. Therefore no subsidy will be given to slaughterhouse projects.

FUTOUR is a state programme to support start up of new companies. Maximum support pr. Project is 750,000 EURO that is given for training of entrepreneurs in a three-year programme.

Gundega Lapina

The main advantage Latvia has over Bornholm is the geographic location. Latvia is close to large markets. The infrastructure is good, and there is easy access to railroads, airports and ports. However the Latvian food producers have many unsolved problems of which most are historically based, and there are plenty of barriers for potential new companies.

The domestic market is not well organised and regulated, and the many illegal companies operating in Latvia, mainly meat producers, distort the market. Furthermore the legal domestic food industry is up against import of cheap- subsidised – food from western countries and from Poland.

The crisis in the Russian market for fish and meat in 1998 resulted in big problems for Latvian producers, who had Russia as their main market, and many went bankrupt.

Most Latvian food companies have old-fashioned machinery, and it is generally realised that a modernisation is badly needed. It is however almost impossible for most companies to find the necessary investment money. National investment funds are few, and the industries often find it difficult to get access to international investment sources. These investors most often require that the companies themselves have free capital to invest, and this is seldom the case. Also limited language skills constitute problems. Latvia has for more than a generation been oriented towards Eastern European countries, where Russian is the dominating language, and therefore few businessmen have the necessary knowledge in English and German.

There are some entrepreneurs among the Latvian farmers, and those are willing to take high risks. Some have started alternative businesses such as ostrich production, onion growing, strawberries etc.

Latvia has a few private owned agro-industries, e.g. a potato starch factory and 3 sugar factories.

Tõnis Eerme

Like Latvia, Estonia has an ideal location for creation of transportation links and distribution chains for goods and services for companies in Europe and the Eastern part of the World. And the infrastructure is well developed.

One third of the population lives in rural areas. The importance of agriculture, measured as percentage of gross national product, is however declining, and is today as low as 3,4 % of GDP.

The domestic market for agricultural products is relatively small, and the largest foreign market, the Russian market, is very unstable. The market situation may change drastically, when Estonia joins the EU. This will however require certain quality standards that might not be met by all Estonian food companies.

Investment funds for value added productions do exist; these funds have however not yet considered investment in high added value agro-industries. One problem is that the low cost of land makes it difficult for agro-industrial entrepreneurs to give enough security for loans.

There is only one agricultural university in Estonia. It was recently together with other Estonian universities evaluated, and it received the lowest marks in scientific quality. It has outdated laboratory facilities and equipment. Furthermore the university has no mechanism for exploitation of potential spin-offs. And there are no links between science and commerce.

The entrepreneurial spirit is in general low. Financial support schemes for entrepreneurial farmers and agro-industries do exist. It is however rather time consuming and complicated to make an application and to fill in the forms. The applicant most often needs help for that, but as there is no public support, he has to rely on consultants, who expect to be paid for their work. And as the entrepreneur seldom has got money for that, this is often one of the main barriers for new activities.

In spite of the many barriers there are examples of new activities in the added value industrial area.

The company Tervex has thus started a production of Sallow Thorn oil that is used for medicinal purposes. It has a number of therapeutic effects such as a wound healing and anti-microbial effect. It stimulates the regeneration of damaged tissue, controls the metabolism of lipids and reduces the cholesterol content in blood.

Pasyniuk

Polish agriculture is at a crossroad these years, and a lot of things have to be changed. Poland share a long border with Eastern Europe, and it has a long tradition for trade with e.g. Russia and Ukraine. The outlet to these markets has however been reduced considerably due to recent political events. It

is up to Poland to find a future place between EU and the East European markets.

Polish farmers need to be more effective and have better equipment in order to be able to compete with other farmers in the EU.

Rolf Olsson

In Sweden private shareholders will not invest in any agro-industrial projects, if the raw material supply is dependent on subventions. It is too risky to rely on politically determined raw-material prices. The subvention may be changed at any time.

The Swedish agro-industry and agro-industrial knowledge and financing capacity have been very much centralised in the Stockholm region, which may create problems for more remote farmer groups and agro-industries.

In the small and medium sized enterprises the board of directors often do not have competence to understand the nature of investments in e.g. the two virtual factories, and the employees do not have the expertise to evaluate the technical and economic content of the projects. (General lack of competence).

Such projects should rather be presented for the large centralised factories, and these factories should even be involved in the projects almost from the beginning, in order to have influence on the project and to be able to better evaluate the implications of the coming investments.

We must find new ways to make the local entrepreneurs more competent and also find new ways of financing.

Marjo Keskitalo

The Finnish farmers are in general well educated, they have good international contacts, they speak English and they have access to the Internet. But they are seldom aware of the new possibilities constantly arising from new research and development.

Finland is dominated by large companies, who seldom are interested in projects and new productions that have not been developed in their own development department.

Many SMEs, however, are very open to new ideas, but they might not have the right expertise to develop these ideas. There is thus a lack of such good companies with both entrepreneurial spirit and the expertise to explore new ideas.

The incubators and science parks around the universities are very useful in transferring know-how from science to practise.

Some Finnish farmers have created co-operatives and set up small production plants for production of commodities from berries, herbs, vegetables etc.

There are funding possibilities for new productions also productions like the two virtual factories. The Public pays 50 %; 40 % may come from a university or a research centre, and the remaining 10 % is paid by the company itself.

General

The above interventions lead to a general discussion on production efficiency improvement, rural development, sustainability, self-sufficiency etc. It was a general opinion that self-sufficiency should not be the goal for individual countries, markets should be open, and it was anticipated that each region has some competitive advantages that should be identified and explored.

The above is the first discussion on the differences between the involved countries, and it "sets the scene" for the coming more focused discussions.

Co-ordinators conclusion

There seems to be few common denominators between the Baltic countries concerning the agricultural and agro-industrial conditions.

It was stated in all interventions that agriculture and the agro-related industries are facing many challenges in the coming years and that considerable changes in production patterns will be unavoidable. In the primary production sector there is a clear tendency towards fewer and larger farms. And in the traditional agro-industrial sector competition is going to be tough.

It seems that professional investors in all the included countries are reluctant to invest in the agro-industrial area, as they have the perception that this is a low profit and low added value area. This may be true for traditional agro-industrial (bulk) productions. But it is certainly not the case for innovative value added speciality productions, which the two virtual factories demonstrate. In both cases the potential profit is just as good as in most high-tech bio-technology projects, and the potential risk may even be considerably lower. Also the Camelina success story contradicts this perception. The challenge is to convince potential investors.

In addition: Regional innovation policy, which focuses too much on high technology, risks missing the much larger opportunities for improved competitiveness and new products and processes not only in the high added value area, but also in the more traditional food- and non-food industries.

Ad.6. Web site

Jörg Köhn demonstrated the Basan web-site that has got the address: www.baltic-network.de Each member was invited to add his or her name and password to the intra-net site. This site will now be open for all members to send messages and add information to other members of Basan.

Finn Rexen proposed the following links to be added to the site:

The World wide Molecular Farming Database

The Basan secretariate has been in contact with the people behind this database, which is still under construction.

They would like to establish a link between their web-site and Basan and also a link to the homepages for Basan members.

The idea with the Molecular farming database is to establish a World wide database with name and addresses of farmers, who would be interested in signing contracts with pharmaceutical companies and cosmetic and chemical companies for future production of high added value products (pharmaceuticals and non pharmaceuticals) from genetically engineered plants. Ideally this would mean growing crops in isolation either through growing in contained greenhouses or finding locations 8+ km away from any similar crop to avoid cross-pollination.

This is really high added value business: Some molecular crops e.g. those containing plantibodies and plantigens will be worth up to 2 million US\$ pr ha.

The database will act as a source, matching farmers to biotech companies.

It is stressed that molecular farming is still in its infancy with only very few commercialised products so far, and it might take years before the database becomes really viable.

Molecular farming might be of potential interest for some of the remote areas (e.g. the islands) in the Baltic Sea region. There would, however, presumably be legal obstacles. Commercial growing of GMOs in open fields is not yet allowed in the EU.

IENICA

Another link should be to the IENICA web-site. IENICA is a large EU network including 27 countries both within and outside Europe. For example are both Canada and USA members. IENICA has as objective to encourage the introduction of new industrial crops in agriculture and it has contacts to World-wide industries, who have expressed interest in processing untraditional crops. Furthermore it has an extensive database with current and potential industrial crops.

IENICA is included in a portal including also BIOMATT and INFORM, networks, who each has their own web-site.

BIOMATT.

BIOMATT brings progress and final reports from ongoing EU financed agro-industrial projects.

INFORMM.

INFORMM is an industry network for renewable resources and materials, it has important connections to large European companies, and it has established a directory of companies active in the industrial crop sector.

ManagEnergy.

ManagEnergy offers a window of regional energy activities, energy crops, solid and liquid biofuels, examples of "good practise within the bioenergy sector.

FLAIR-FLOW

FLAIR FLOW- a food research web-side informs about the latest findings within food research.

>b>Ad.7. IRE thematic network co-ordinators meeting, Luxembourg, 23rd May 2002

Currently there are 13 IRE thematic networks, including BASAN, and all network co-ordinators attended the meeting.

The morning session was devoted to brief presentations of the main objectives and expected outcomes of the 13 networks, given by the network co-ordinators.

In the afternoon 4 parallel sessions were organised

- Supporting and exploitation of research
- Strengthening of interregional co-operation
- Innovation in the agro-food sector
- Tools and methodologies to support regional innovation efforts

Finn Rexen participated in session 3 (agro-food) together with the co-ordinator from the Café network and a representative from the IRC Agro-food Thematic group.

Both these networks operate with issues of interest for our work, and it was agreed to keep in contact and exchange information.

Agro-food thematic network

The Agro-food thematic group is integrated in the Innovation Relay Centres (IRC) network. There are 68s covering 30 European countries. In ATG itself there are 15 active members and 17 observers

Some of the BASAN members are also members of this group.(Stabulniek, Jan Koch ?)

Agro-foods main tasks are to increase opportunities of co-operation for companies interested in implementation of new food technologies, and here we have a clear common interest.

They help local industries in the identification of suitable technologies, and encourage the circulation of European research results in individual industrial communities. Finally they offer training and consulting services to local companies.

It was agreed that it would be useful to organise a joint event between ATG and Basan, and the IRC central unit agreed to support such an event.

CAFÉ is an acronym for "Consortia for Agro-food in Europe". It has 17 members of which one comes from Sweden, one from Estonia, one from Germany and one from Poland. Co-ordinator is Tony Haynes from Batley Business and Technology Centre in UK.

It has as objectives to:

- Analyse the food industry in the participating regions using a common analytical model
- Review current innovation support services for the food industry
- Identify and share best practise stemming from the private as well as the public sector
- Identify opportunities for trans-regional co-operation and for public-private co-operation concerning research and innovation support
- Develop a methodology for enhancing economic performance, applicable to other business sectors.

There might be some overlap and possible synergy between their activities and ours, and we agreed to keep in contact and exchange information.

So far the Basan secretariat has received an analysis of the agro-food industry in Estonia. It is very detailed and impressive, and I am sure that we can use some of their findings in our work. If some of you would like to have a copy. Please let me know.

After the meeting Rexen received an invitation to attend a regional meeting of the "Strinnop" network. Strinnop is an acronym for "Strengthening the Regional Innovation profile".

Further objectives are to:

- Create synergies between the member regions and identify potential areas for inter-regional co-operation
- Identify best practise methodology that can be disseminated at a European level
- Support regional SME's with their innovation activities.

Co-ordinator is Cornelia Hamann from Bremen. There are 12 members of which one is from Lithuania, one from Denmark, one from Poland, one from Germany and one from Sweden.

We might also have mutual interests with this group and it has been agreed with the co-ordinator to keep in contact.

Ad.8 Any other business

1. Preparation of final conference September 2003
Sept./October 2002.

- Preparation of flyer with broad outlet of programme.
- Preparation of distribution list
- Establishment of small ad hoc group to come up with suggestion for flyer, programme and organisation (Anna Grzybek, Rolf Olsson, Jörg Köhn).

2. Steering group

Members have been nominated

First meeting in January 2003

3. Accompanying Measure

Coupling BASAN with a Mediterranean network "MEDARN"

The proposal has been evaluated by the Commission and got a relatively good score. It is now on a reserve list, and the prospects for funding are good. The activities include:

- One workshop in the Mediterranean area and one in the Baltic Sea area.
- One training seminar in the Mediterranean area with participants from Basan
- Dissemination of results-model campaign experts
- Public attitude "consumers NGOs and media" wide
- Feasibility study; removal of barriers, marketing opportunities

The action is mainly focused on non-food uses of agricultural raw-materials

4. Next meeting

Next meeting will take place in Latvia on 5-6 December.

It was discussed whether the meeting should start Thursday morning and end Friday evening, or Thursday noon and perhaps continue on Saturday morning.

It was decided that members should contact Gundega Lapina and inform about their earliest possible arrival time on Thursday morning. If we all can arrive around noon Thursday, the meeting will be held from Thursday afternoon to Friday evening. If not all can make it till Thursday noon, then the meeting will start early Thursday morning, indicating that we have to arrive already Wednesday evening.

Stakeholders meeting

Agenda

1. Welcome and presentation of the TTS institute

2. Presentation of Basan
3. Presentation of two Finnish success stories
 - o Camelina Ltd.
 - o Biowatti
4. Diversification in Finnish agriculture "future trends":
Production and multifunctional industrial processing of new fibre crops in the Baltic Sea area.

Ad.1. TTS institute

Anna-Maija Kirkkari gave a short presentation of the TTS institute. TTS (the Work Efficiency Institute) was established in 1924. It is a non-profit institution that carries out research and development and provides information services. It has a staff of 160.

TTS institute members include private individuals, associations and business enterprises. 80 % of the budget is obtained from research and development projects, education, publications and membership fees. The government provides the remaining 20 %.

The institute has two main divisions: Research & Development and Education
Research and development has three departments:

- Department of Agriculture
- Department of Forestry
- Department of Home Economics

The Department of Agriculture is promoting rationalisation of agriculture and rural enterprises.

Ad.2 Finnish success stories

Camelina

Karita Alen, who is managing director, told about the start up of a new company Camelina Ltd.

The company builds on results from a EU financed research project (AIR programme). The projects had partners from five countries including a Danish co-ordinator. Only the Finnish partner was interested in a commercialisation of the results. The project ended in 1998, and only one year after the new company was established. Now, three years after, the production is up and running, and five different camelina products have been introduced on the market in Finland.

This project is one of the very few examples of a EU financed project that has resulted in a commercial production, and even a successful one.

Camelina Sativa (false flax) belongs to the brassica family. It is a very old crop that was cultivated already in the Iron and Bronze ages. It is in many ways an ideal crop for modern diversified farming. It grows well in the cool Nordic climate, it is easy to cultivate and has low demands on inputs of fertilisers and pesticides. The yield in Finland is 1,5 - 2,3 tons of seed pr ha.

The company has signed production contracts for 360 - 400 ha with Finnish farmers. The farmers receive 0,6 EURO pr. Kg seed, which is a little more than for (subsidised) rape-seed.

The oil is the most important part of the crop. It contains more than 50 % polyunsaturated fatty acids. The major components are linolenic acid (omega 3 fatty acid - 40 %) and linoleic acid (omega 6 fatty acid 15 %). These fatty acids are known to reduce the LDL-cholesterol level in blood, and are good for heart and cardiovascular health. The oil also contains significant amounts of natural anti-oxidants, such as tocopherols and vitamin E. The tocopherol content is 47 mg/100 g.

The camelina seeds can be used in baking, mixed with breakfast yoghurt and cereals and sprinkled on salads. The crushed oil-seed cake can be added to yoghurts or mixed with breakfast cereals or fruits as a healthy protein supplement. The Camelina products are distributed through one retailer.

Camelina Ltd has outsourced not only the growing of seeds, but also the pressing and bottling of the oil. In a way it operates like a virtual factory. The company concentrates on marketing and testing of the products. 4 clinical trials have been initiated. One has finished and the results will be published in November.

The work has been stepwise financed. To begin with there were four owners, who risked their private

money. Besides they got help from Spinno Seed that has specialised in supporting seed money to start-up companies. Each owner got 25 % of the stocks, and they each invested 25.000 Finmark.

Today, two years after, the company is worth more than 1 million EURO, and the capital stock amounts to 83.000 EURO.

After the start-up period the company got additional financing from SITRA (National research fund) and MTK (Central Union of agricultural Producers and Forest Owners). Later the following investors joined in:

- TEKEF - National technology Agency)
- FINNVERA - Investment Company specialised in financing SMEs
- The RAISIO group (20 %) - the largest agro-industrial company in Finland.

All investors have a seat on the board of directors, and on request of the investors the company has filed an international patent application on the cold-pressing process, and a Trade Mark has been registered.

After the first three years the company is at a cross road. A new strategic management may be needed, and some of the financial investors will probably in the near future take out their money for investment in other start-up companies. Therefore also a new financing package must be found, or the company might be merged with a company with the same product segment – functional foods.

BIOVATTI

BIOVATTI is an insulation mat, produced from flax fibres. It has the same insulation value as rockwool, but is much more expensive. It has some advantages over rockwool. For example it functions as a moisture accumulator, that is: the mat absorbs moisture, when the relative humidity is above 60 % and releases moisture, when the humidity is below 60 %. In rooms, where these boards are used, is thus a relative constant humidity no matter, what the outside humidity is.

The managing director, Marri Savolainen, explained that the company was started in 1999. The investment costs were 8 million EURO. The necessary capital was procured from Farmers Union, 10 private owners, the investment fund EURO FINNVERA and private banks. There are 15 employees, and the annual turnover is 1 million EURO.

According to Marti Savolainen it could be an advantage to be the first on the market with a new product, but at the same time it is also very difficult to predict the customers reaction and thus the market size. The production was delayed by 1,5 years, which was very costly, as fixed costs had to be paid even when there was no production. Approximately half the investment was lost during this period.

Also the official type approval was delayed by 1,5 years, which has added to the loss. The goal is to obtain 10 % of the Finnish market for insulation mats.

Ad. 6 Diversification in Finnish Agriculture

Marjo Kesitalo from Agro-food Research Finland (MTT) presented a paper on the need for diversification in Finnish agriculture.

MTT Agri-Food Research Finland is the largest food research institute in Finland, and one of the largest institutes in the Nordic countries carrying out agricultural and food research, plus economic and environmental research related to agriculture.

MTT operates in 20 different locations across Finland. The executive and operational centre is located in Jokioinen, 120 km north-west of Helsinki

Marjo explained that the task of agriculture in Finland is no longer restricted to food or feed production. Diversification is needed to:

- Sustain functional field, field edge and forest eco-systems
- Prevent soil erosion and nutrient leaching to the water
- Inhibit uncontrolled insect, disease and weed invasion
- Preserve gene pool of species
- Take care of the outlook of landscape

Diversification is also a tool to create new income possibilities and new bio-material based enterprises.

Diversification in plant production include: 1)Introduction of new crops, 2)utilisation of new plant parts and 3)utilisation of plant-derived molecules for food, feed and non-food purposes.

Item 1. Introduction of new crops:

The crop may be defined as new if:

- the crop is totally unexploited
- the crop is grown in geographically new site
- the crop is an reintroduced "old crop"
- the application is new
- the importance of the crop is new
- new variety

Examples in Finland are:

- for food: Buckwheat, camelina, caraway, linseed
- "green chemicals" for non-food purpose: Berries, herbs, caraway linseed, woad
- for energy: Reed Canary Grass, hemp, flax, nettle

Many research programmes are focused on the availability, concentration, extraction, bio-activity and application of:

- glucosinolates
- terpenes
- biophenols, including flavonoids, phenolic acids and lignans
- indigo

In conclusion diversification in agriculture gives new possibilities and ideas to create new bio-material based enterprises, and diversification can be used as a tool to maintain/improve rural economy.

Ad.7 Production and multifunctional industrial processing of new fibre crops from agriculture in the Baltic sea area

Rolf Olsson, SLU.

Important basic conditions for success, when growing fibre crops in the Baltic Sea area.

- Good Agriculture Conditions for the crop in the Baltic Sea Area
- Availability of harvesting and handling technology suitable for the selected industrial processing
- Good multifunctional intermediate processing technology available and suitable for small scale processing
- Multifunctional end product processing technology available which give quality advantages to the products compared to products already existing on the market
- At least one of the processed products must be easy to get out on the market

Fibre crops and processing technologies under development in the Baltic sea area to be presented

- Reed canary grass for multifunctional use in industry and energy sector
- New Fibre hemp varieties, which also have good seed production.

Hemp-variety Finola

- Newly developed by Finnish breeder Jace Callaway, Finola OY.
- Seed yield in Finnish and Swedish conditions 1-2 tons / ha
- Oil and protein are already on the market in small scale in Finland

Reed canary grass, *Phalaris arundinacea* Multifunctional Fibre processing technology

Actual situation

- First industry / energy variety BAMSE suitable for Baltic Sea area under commercial introduction by the company Svalöf-Weibull AB
- The delayed harvest method is possible to use in the Baltic Sea area

- Intermediate processing as small scale decentralised processing is developed in Bioraf with commercially available technology (UMS/AS)
- Chemical pulping –Production of high quality paper from Reed canary grass- Engineering and construction of commercial mills is available through Jaako Pöyry OY
- Technology for mills producing Fibre Board and Particle board (with demand of 50% less glue and resins) is available (and already delivered to USA) by company Daproma AB

Reed canary grass- Environmental and quality aspects on production of fibre products

- Raw material production with existing agricultural machines can be used
- Raw material production can be combined with environment improving as decrease of soil erosion, decrease of nutrient leaching to water and re-circulation of ash and municipal sludge if used as fertilisers which can give farmers increased income.
- Delayed harvesting method is cost effective as it gives a sustainable low input production method
- Raw material from delayed harvesting gives environmentally more friendly processing of chemical pulp (decreased demand of chemicals and more friendly bleaching).
- Raw material from delayed harvesting gives environmentally more friendly fibre board and particle board (less glue and resins) production and increased quality as low content of extractives gives less ageing of the board products.

Reed canary grass-Market Aspects on production of fibre products

- Europe has a shortage in hardwood (short fibre) pulps and is a large importer of Eucalyptus and Acacia pulp (from destroyed rain-forests)
- The European market for high quality printing papers and white top liner is rapidly increasing
- The market demand for environmentally friendly fibre board- particle board is increasing (USA market pays 20 % more for the straw/ grass products with less glue and resins).

The Swedish and / or Baltic Sea Strategy for development of Multifunctional industrial processing of fibre products from Reed canary grass

- Industry investors don't invest in mills that need raw materials not yet existing on the market.- Farmers don't grow crops that lack a market.
- The introduction of the new crop must go through use in energy sector.
- The dramatically (during season 2001/2002) expanding pellet market is the key to the introduction of fibre products on industrial scale.
- The intermediate processing Technology developed in BIORAF is the key for later change to multifunctional use as it produces both a fuel fraction from (out of industrial aspects) bad fibres and gives also high value fibres.

Technology and Competitiveness for pellets made from reed canary grass.

- Delayed harvested reed canary grass is field dried to moisture content less than 15 % and needs thus no drying equipment
- New pelletising technologies are now available on the market:
- ETS technology (Italy. Company under reconstruction by FIAT Company)
- SPC Technology (Small scale technology on farmer investment cost level- 60 000 Euro)
- The grass pellet has an already existing market all over Europe as it can be used in coal powder burning boilers.
- The incentives for farmers to be involved is increasing both by proposal for new EU agricultural policy and the expected new oil crisis (within 10 years)