Fifth Regional meeting
Umeå, Sweden - 26-27 June 2003

Thursday 26 June, stakeholders meeting

Agenda

1. Welcome to Umeå, *Rolf Olsson*
2. Short introduction to Basan, *Finn Rexen*
3. Presentation of Department of Agricultural Research for Northern Sweden, *Lars Ericson*
4. Presentation of Unit of Biomass Technology and Chemistry, *Laila Brunes*
5. Future Trends in Agriculture and Agro-industry in the county of Vasterbotten, *Sven Lingegård*
6. Future Trends in Agriculture and Agro-industry in the County of Osterbotten, *Henrik Ingo*
7. A short introduction to KLAC- Anew approach to strengthen production – research – and advisory clusters of the region Kvarkenområdet between Sweden and Finland, *Rolf Olsson*
8. Regional agricultural research: An example of co-operation between research and agro-industry in northen Sweden, *Lars Ericsson*
9. Research Centre for Forage and its upgrading to Milk and Meat, *Kjell Martinsson*
10. Forage production for high quality food production: A possible new cluster between research and industry, *Harry Eriksson*
11. "Algens Hus". A success story of combining new farm activities with tourism, *manager Christer Johansson*

Members present

Denmark	Finn Rexen, Bioraf Denmark Foundation
Denmark	Michael Rustand, Bornholms Erhvervscenter
Denmark	Lis Beck Hansen Bioraf Denmark Foundation
Finland	Elina Muuttomaa, TTS Istitute
Latvia	Gundega Lapina, Latvian Technology Centre
Poland	Anna Grzybek, IBMER
Poland	Aleksander Muzalewski IBMER
Poland	Jaroslaw Osiadacz, IRC West Poland
Sweden	Rolf Olsson, Swedish University of Agricultural Science
Estonia	Tonis Eerme, Tartu Science Park

Not present:

Lithuania	Eigirdas Zemaitis, Lithuanian Innovation Centre
Germany	Jorg Koehn,

Invited speakers and guests

Lars Ericsson, SLU
Kjell Martinsson, SLU
Harry Eriksson, SLU
Laila Brunes, SLU
Sven Lingegård, County of Vasterbotten
Henrik Ingo, Osterbottens svenska Landskapsforbund
Christer Johansson, Algens Hus

Welcome

Rolf Olsson welcomed the participants and gave an overview over the agenda for the next two days, and Finn Rexen gave a short introduction to Basan.

Presentation of department of agricultural research for Northern Sweden, Lars Ericson.

The department is the most Northern branch of SLU. Agricultural research has been performed in these Northern regions since 1894 – more than 100 years, however the oldest experimental station belonging to this department was founded in 1931.

The bases for the research activities are: Biological production on arable land in a cold climate with a long day length in the summer period. The research areas are animal husbandry, crop production, horticulture, plant protection and agricultural engineering. The activities are focused on maximising the climatic advantages of producing food in northern areas. Priority is given to milk and meat, which also give the biggest turnover in the region. However also the production of seed potatoes is important for the farmers. Due to the cold climate there are very few potato pathogens, and therefore the quality of the seed potatoes is very high.

The department has a "whole chain approach" to its research, and it is thus dealing with research aspects from field to end product.

The tough climate puts demands on the farmers who have to produce forage for the whole year in a very short period.

Presentation of the Unit of Biomass Technology and Chemistry, Laila Brunes

Laila Brunes explained the the Unit of Biomass Technology is part of Sveriges Lantbruksuniversitet (SLU) with organisations in Alnarp in the south, Skara in the middle and Uppsala and Umeå in the North.

The unit has a staff of 20 persons who perform research in the whole production chain from field to upgrading and use. The work is concentrated on critical points concerning growing, harvest, transport, storage, compressing and processing (combustion).

The main research areas are: bioenergy, methods for characterisation of biomass, emissions from burning of biomass and work on agro-fibres for paper and pulp.

Some emphasis is put on development of on-line control systems e.g. in connection with production of energy pellets.

Future trends in agriculture and agro-industry in the county of Västerbotten, Sven Lingegård.

Sven Lingegård is head for the agricultural department in the county Västerbotten..

Västerbotten has 250 000 inhabitants and it has a size of 200x400 km2 (larger than Denmark with 5 million inhabitants). It is thus very sparely populated. Forests cover 75 % of the land, and only 1,5 % is arable land. The farming area constitutes approximately 65 000 ha mainly situated along the coast.

The growing period varies from 170 days in the coastal area to 140 days in the inland. This limited growth period also puts restrictions on the number of crops that can be grown. Barley can be grown to ripeness, the yield is however modest, approximately 2,4 tons/ha. Also potatoes can be grown.

Meat constitutes 20 % of the agricultural production, dairy 40 % and potatoes 1 %. The production of biomass for energy is still modest (< 0,1 %), but growing. The interest in energy crops is due to the fact that there are 60 000 ha of abandoned agricultural land that may be used for energy crop production. If the land is not used in some way, it will soon become part of the surrounding forests.

In 1951 the area had almost 10 000 farms, but today there are only 1900 farmers in whole district, and many of the farmers have very long distances to their neighbours, which makes co-operation and logistics very difficult. There are 500 dairy farms with 14 500 cows and they deliver milk to centralised dairies. The number of dairy farms has decreased drastically, by 50 %, during the last 10 years. A few pig farmers produce together 3000 sows pr. Year.

The strengths of the area are:

- Long daylight,
- Easy access to research,
- Modern dairy industry
- Plenty of low-cost land (land rent: 20 –30 € pr. Ha)
- Skilled farmers

The entrepreneurial spirit is however very modest. The growth opportunities are in production of high added value products and functional foods e.g. from dairy products, introduction of new speciality crops and small-scale bio-energy productions.

Sven Lingegård stressed that in his opinion is a close co-operation between the university (SLU) and the farmers and agro-industries vital for the future development of the region.

Future trends in agriculture and agro-industry in the county of Österbotten (Finland), Henrik Ingo

Henrik Ingo emphasised that Österbotten is important for Finnish agriculture. 10 % of the total Finnish pig production comes from Österbotten. Previously egg production was an important activity, the production has however declined considerably during recent years, and today there are only 100 eggfarmers left. Also in Österbotten is plenty of land available, but the cost is higher than in Vesterbotten (rent is 100 – 400 € pr. Ha)

In total there are 4 000 farmers, 500 greenhouse growers and 800 fur producers.
The cool climate is optimal for fur production, and during recent years a considerable production of fur animals has been built up. Today the turnover from the fur activities is higher than from the rest of agriculture in Österbotten. Especially fox farms are profitable, and the area is a World leader in fox production and fur quality.

Another important and profitable activity is production of vegetables in greenhouses. Especially tomatoes that is grown at competitive prices. The quality and taste are better than for imported tomatoes, and the Finnish consumers prefer the domestic grown tomatoes.

Neither the fur farmers nor the greenhouse growers receive any subsidies from the EU. A major problem is very fluctuating prices that may create temporary cash problems. The banks are however willing to give short-term loans.

Some years ago, at the time when Finland joined the EU, the stakeholders (both public and private) in agriculture in Österbotten joint forces and decided that they would do whatever they could to secure that agriculture and agro-indstries in Österbotten should be amongst the future survivors.

In contrast agriculture in the Eastern part of Finland is declining, the income pr farmers has not been improved, and more and more farms stop production. From a Basan point of view it would be important to analyse, why there is this big difference between two regions with more or less the same climate and production conditions. A similar comparison could be made with Västerbotten in Sweden. Rolf Olsson promised that an analysis of the differences will be part of the country report from Sweden.

The entrepreneurial spirit is high in Österbotten, and this is, according to Henrik Ingo, not due to easy access to research centres or universities, but due to the fact that the entrepreneurs have received inspiration through study tours all over Europe. Most of the entrepreneurs have a low level of education; they are mainly driven by curiosity and are willing to work very hard.

The farmers have an interest in growing both oilseeds and cereals. They need however varieties suited for the cool climate. The demand for cold tolerant seeds seems not to be large enough for the breeding companies to start a plant breeding work. Therefore public funding is needed. Oats are produced for export, and barley is used for fodder and vodka. Also sugar beet, potatoes and spring wheat are produced. Potatoes are mainly used for food, there is however also a small production of potato starch. Animal production (beef and milk) is increasing

An important issue is environment. The soil has a low pH and contains heavy metals. Therefore a "controlled drainage" programme, partly financed by EU, has been set up. Up to now 4000 ha of land has been drained.

The area is cowered with forests, and the wood waste is to some extend used as biofuel. There is however also an interest in growing energy crops, and currently a pulp mill is constructing a large scale energy plant that shall use both forest waste and reed canary grass.

Österbotten authorities have initiated a food quality programme that monitors the quality through the whole process chain. Henrik Ingo has the impression that Österbotten in this respect is several years ahead of other European countries.

A new approach to strengthen production research- and advisory clusters of the region Kvarkenområdet between Sweden and Finland, Rolf Olsson

Västerbotten is known for its production of healthy food, but the production pattern is in unbalance. It has the same climatic conditions as Österbotten in Finland, and the two regions also share the same language (Swedish). However some of the agricultural land in Västerbotten is "new" land, as the land level is raising approximately 1 cm pr. Year. This creates some problems for the farmers.

KLAC is a new approach to co-operation in the Kvarken area between Sweden and Finland. The goal is to build up and increase the co-operation in agriculture and agro-industry in the areas. Joint business and research projects will be formulated, and KLAC may be used as a base for co-operation with the other Baltic Sea areas.

The idea is to establish production clusters (e.g. forage, milk, meat, glasshouse growing, bio-energy), advisory clusters and research clusters. Currently research areas are being formulated, a plant for upgrading of hemp fibres is under consideration, and a scale up of the current production of reed canary grass from 500 ha. to 4 000 ha. is being organised.

Regional agricultural research: an example of co-operation between research and agro-industry in northern Sweden, Lars Erickson

Historically the Swedish government has been financing applied agricultural research. This situation was however changed in the ninetieths, when it was decided that applied research should be primary funded by the users, the industry.

Therefore SLU decided to create a research cluster together with agro-industries in the northern Sweden. The cluster consists of SLU, 2 dairies, one meat company and one supplier of fertiliser, feed, pesticides etc. The four companies have together a turnover of 6 billion Skr. SLU signs three-year agreements with the companies on budget and research priorities. The first agreement was made in 1996, and the latest is from 2003. Funding available pr. Year constitutes 4,5 million Skr. of which SLU pays 1,5 million Skr.

A board has been established. The four industries and the county appoint the members, and the chairman is dean of the faculty of agriculture at SLU. The researchers have to formulate their

projects and apply for money. The board members make the final decision on distribution of the available money on projects.

Both farmers and the involved industries follow the research projects closely, and much emphasis is put on the dissemination of research results. Leaflets on the latest research results are produced and distributed regularly, and meetings and seminars and field demonstration are arranged. Besides a handbook on northern crops has been produced. It is updated every 4 years.

Research centre for forage and its upgrading to milk and meat, Kjell Martinsson

The forage research centre was established three years ago. The research covers the whole production line from plant growing through feed conservation and quality to animal production. In the near future there will also be a link to human health.

The centre performs both basic and applied research, and it is financed by public means, external funds, farmers organisations and industry.

It is the intention that the centre shall be used as a platform for large international projects on feed . The centre is already involved in such a project namely the EU financed project "grazemore" that includes research centres from the Atlantic coast to the Northern Sweden.

The most common forage is clover and timothy grass, however experiments are performed on whole cereal fodder and protein crops like peas and field beans. The objective is to find a feasible domestically produced protein feed.

The unique thing about the centre is that it combines research on feed with research on animal husbandry. Besides the centre puts much emphasis on extension service to the local farmers, who get asset to the latest research results as soon as they are ready to be published. The centre has a technical staff of 27, 15 senior researchers, and 6 PhD students. Besides dairy and beef animals the centre also performs studies on sheep and goat production.

Forage production for high quality food production: A possible new cluster between research and industry, Harry Eriksson

Harry Eriksson explained that traditional agricultural research normally is focused on solving of separate problems, for example improvement of silage quality or increasing of crop yield, and the dairy industry on the other hand is mainly interested in the parameters determining milk quality such as protein and fat content. In reality the choice of seeds, the harvesting, the conservation, the feeding procedures, the cows, the processing etc. etc. all have a combined effect on the overall efficiency and the quality of the final product. That is the reason why the forage centre puts focus on the whole production chain.

Two examples were given:

1) 5 years ago approximately thirty percent of the milk farmers experienced that their milk had a very bad taste. A research programme was established to check all aspects of processing from

feed production to the handling and production in the dairy. The work was done in close co-operation with the dairy industry.

2) Two years ago 50 % of the local farmers had problems with clostridia spores in the milk, which had as result that the dairies rejected the milk. I t turned out that the silage was infected with the bacteria, which survived as spores in the stomach of the cow and then reappeared in the milk. Again the whole production chain was thoroughly inspected, and the silage production procedures and the production management were improved.

Älgens hus, Christer Johansson

”Älgens Hus” is a successful example of diversification in agriculture. The owner, Christer Johansson has combined traditional farming and forestry with agro-tourism. He has established an elk farm and offers possibilities for fishing and canoeing for tourists. Besides he has opened a shop, where products from the farm and handicrafts are sold, and a restaurant based on food produced on the farm.

Christer Johansson got the inspiration to the elk farm from Russia, where a number of farms have existed for some years.

Älgens hus is a private company. The activities have been financed partly by own means, partly by government funds (50 %) and partly by local banks. Johansson has not experienced problems with funding, probably partly because his other assets (forest land) could be used as guarantee.

The elk farm has 5 employees and an additional 5 during the tourist season. There are more than 25 000 visitors pr. Year, and the entrance fee constitutes the main part of the total income. The elk milk is used for cheese production, and the cheese is considered to be a delicatesse that is sold at a high price mainly to gourmet restaurants (5000 SKr/kg). The elks are not slaughtered, but sold to animal parks and zoos.

The farm has existed for 8 years. The first 5 years the economy was bad with losses each year, now however, the situation has changed, and the activities have made a decent profit for the last three years. The yearly turnover is approximately 5 million SKr.

Christer Johansson stressed that one of the keys to success was a very positive attitude from the local media that have made his activities know throughout the region. Each year is spent 100 000 SKr. on advertising.

Emmissions from co-combustion of biomass and source-sorted household waste in small-scale heating systems, Bjørn Hedman, Stellan Marklund, Jan Burvall

S**LU** is performing a large scale demonstration project on collection and burning of household waste from thinly populated rural areas.

The population in such areas normally find it very difficult and time consuming to get rid of the waste due to long distances to the nearest dumb. The project includes the inhabitants in a number of villages scattered around Umeå.

The participants at the Basan meeting visited some of these villages, where the villagers separate their waste in a combustible and a non-combustible part. The combustible part is collected and co-combusted with biofuel – e.g. reed canary grass in centralised small-scale combustion plants. The addition of biofuel reduces the emission to such an extent that the EU directive for waste incineration can be met.

Friday 27 june 2003, members meeting

Agenda

1. Field study tour to energy grass production sites and visit to BCT Biofuel Technology Centre of Umeå
2. Country report from Estonia, Tonis Eerme
3. Discussion of Basan final conference on Bornholm
4. Discussion about final report and recommendations to the Commission
5. Any other business

Field study tour

The unit of biomass technology at SLU has for a number of years grown energy crops in experimental fields. The most promising crop for the northern regions seems to be reed canary grass that is cold tolerant and gives a good yield. The crop is perennial and is harvested either in winter or early spring. The moisture content is reasonably low at harvest, and the crop can in most years be stored without drying. The crop is compressed in bales (round or square) and stored under plastic. SLU is performing experiments with crop varieties, harvesting methods, baling, storing and logistics. At the research field yields of 6 –7 tons pr. ha have been achieved. This is very close to the break-even value. Two experimental fields that had been harvested recently were visited.

The "Biofuel Technology Centre" combines education and research on production and combustion of biofuels with commercial sale of heat . It was established in January 2000. The centre has a line for energy pellet production and a line for briquette production, and two industrial biomass furnaces (fuelled with the pellets and briquettes from the test production) functions as a central heating station for the village nearby. The income from this activity is used to finance research at the centre.

Various biofuel mixtures can be burnt, and the combustion can be studied in two different and flexible boilers. One with a capacity of 650 kW and the other with 160 kW. The units are well equipped with measuring instruments, which make it possible to study the combustion and emission in details. A third, smaller boiler is constructed to burn biomass powder (150 kW).

The boilers are constructed for fuels with high ash contents, and they are equipped with a ceramic afterburner- compartment in order to improve efficiency and reduce emissions.

Country report from Estonia, Tonis Eerme

Tonis Eerme gave a short presentation of the country report from Estonia,as well as an overview over the results from the questionnaire survey.

The main obstacles for establishing agro-industrial companies in Estonia seems to be lack of financing possibilities and limited markets for new products. Most Latvian companies are only focusing on the domestic market, where the purchasing power is very modest.

The country report and the results from the questionnaire survey will be distributed to the Basan members.

Discussion of final conference

It seems that the remoteness of the place chosen for the conference (Bornholm) is an obstacle for many potential participants. It is perceived as difficult and time consuming to come to Bornholm, and the travel costs are high. It is true that the flight ticket from Copenhagen to Bornholm is expensive. However much cheaper alternatives (train and ferries) do exist, and travel time from Copenhagen is only 30 minutes by plane and 3 hours by train/ferry. The secretariat will investigate, whether it is possible to arrange rebate travels (group travel).

The programme was discussed, and an overview over the list of speakers, who have confirmed was given. It was decided that all speakers should receive a confirmation letter from the secretariat.

All Basan members were asked to send the filled-in registration form to the secretariat as soon as possible in order to be able to make the right hotel arrangements.

It was agreed that all members should make a new effort to promote the conference in their region and make sure that conference programmes are sent to all potential interested persons.

Final report – country statistics

The Basan workplan includes statistics from the regions. A report, "The Baltic Sea Region" that had been distributed to members before the meeting was discussed.

Some members expressed the opinion that the figures gave a too gloomy picture of the situation. It might be better to focus on the opportunities than the problems. the other hand it is important to put some focus on the problems in order to suggest proper solutions.

Another point raised was that some of the figures were not in agreement with national figures.

It was agreed that all member should check the figures for their country/region and that the secretariat and members should reconsider, which statistical information was best to illustrate the challenges and differences between the countries.

Final report – recommendations

A document " Recommendations for future actions" was sent to the members before the meeting. In the document is suggested the following:

- To develop an entrepreneur package to attract foreign entrepreneurs/investors
- To develop an incentive package for local entrepreneurs
- To organise regional producer groups
- To establish a "Baltic Sea virtual campus".
- To establish "Enterprise zones"

Entrepreneur package
In the effort to attract new companies (e.g. agro-industrial locomotives) or entrepreneurs to a given region a very efficient instrument may be to offer individual "entrepreneur packages" or "relocation packages" including e.g. land at low cost, worker retraining, tax incentives, infrastructure improvement, low interest loans etc.

However public incentives are not the main deciding factor, when a company considers establishing new production facilities. Also factors such as business climate, transportation, infrastructure, utilities, cost of labour, proximity to suppliers and customers, access to research and higher education facilities, quality of life etc. play a decisive role. Therefore also such information should also be included in the package

An entrepreneur package might offer:

1. General practical information on issues such as
   - cost of labour
   - access to skilled and unskilled labour
   - cost of capital and access to venture capital
   - access to public funding (EU, governmental, regional)
   - cost of living (housing, food, medical care etc.etc.)

2. Customised incentives concerning:
   - Loans, credits and subsidies for job creation
   - Tax abatements and tax credits for start up companies
   - Land at reduced cost
   - Access to customised workforce training

Incentive package for local entrepreneurs
Support to local enterprises and business initiatives in rural areas might be given as:

- Incentives to investors (e.g. fiscal incentives)
- Guaranties and securities for loans
- Promotion of the countryside as an attractive place to invest in
- Financial support and economic advise for business start ups (management, accountancy)
- Loans, credits and subsidies for job creating business projects
- Support for "self employment" in the form of very small loans and micro-loans

Workforce training – access to research and higher education
Not only workforce availability and cost of labour are of importance for new businesses, also the availability of facilities for workforce training is of great significance.

Regional producer groups (micro-clusters; page xx)
A regional producer group is aimed at offering local farmers a regional market for their produce as well as a regional identity and a source of individual stories of human interest to tell the consumer-one from each of the producers.

The aim is to meet modern consumers expectations concerning quality and traceability (page xx). The marketing should be as transparent as possible and the demand for traceability should be met

by labelling each package of meat, honey, jam, etc. with a label identifying the producer and describing the farm

The products may be sold not only through retailers, but also via a mail order service as well as from an internet shop.

The producer group should be affiliated to a regional research centre, and the group members should be offered training courses, cheap inputs of fertilisers, feed etc., access to new technology and so on. The regional research centre could be part of the " Baltic Sea Campus" described below.

(examples: Green Centre, page xx, Graig Farm Organics, page yy and The Orkney Marketing Scheme, page vv, Prophyta, Zostera Dämm).

Baltic Sea virtual Campus
It would probably be of great benefit for the entrepreneurs in the Baltic Sea regions to have access to an entity, where they can have their ideas tested (both technology and market) and business plans controlled by experts, before they contact investment funds and banks.

The Basan network suggests to establish a virtual Baltic "campus" including:

- Existing Research and Development institutions,
- A training centre for entrepreneurs (language skills, IT, "entrepreneurial spirit thinking" etc.),
- A business and market study unit and
- A technology observatory (scout function).

The Baltic Campus will function as a focal point for the establishment of new SME's in the Baltic Sea regions. Instead of spreading the activities in many different directions the Campus should have a visible profile and clear priorities and focus on specific directions of development. Potential Baltic Sea focus points might be: Bio-energy regions, C02 neutral regions, agro-technology nuclei, organic fibre technology, biorefineries etc.

The campus will through the *technology observatory* (page xx) ensure that all relevant know how compiled throughout the years and currently generated in EU and national research programmes will be available for the Baltic Sea entrepreneurs.

company.
production process or product to the conditions prevailing in the Baltic Sea area. The pilot plant facilities, available at the institutions that form part of the centre, will be used to optimise the process and to produce samples for market studies.

The centre will together with the technology observatory follow the international scientific development closely and constantly look for new business opportunities for the SME's in the Baltic Sea area. The centre should seek to establish alliances with international institutions that have developed new products or productions of interest for the Baltic Sea area .

T*he training centre* will help ensure that local entrepreneurs have the necessary skills required for the start-up of new innovative companies.

Discussion
It was agreed that the incentive package should also include a description of activities not connected with practical matters and economy. It is important also to mention activity possibilities not connected to work, such as fishing and hunting opportunities, the cultural life, activities for children, kindergartens, schools etc.

It was also discussed whether the "Agricultural Community Action programme" developed by the Illinois Department of Commerce and Community Affairs could be used as a model (mentioned in the report "Creation of agro-industrial activities in other parts of the World). The programme has as objective to engage small rural communities actively in economic development efforts in agro-industries. It assists in building relationships between primary producers, agri-business leaders, economic development professionals to create new economic development.

The discussion focused mainly on the suggestion to set up Baltic virtual campus. The members were positive towards the idea. It was stressed that various research co-operations between the Baltic Sea countries already have been established. For example the NOVA-BOVA university, which is a Nordic Council of Ministers platform for Nordic co-operation and for exploring new ways to forge a networking university without boundaries. NOVA –BOVA includes agricultural universities in the Nordic and Baltic countries. Perhaps some of these activitites could be connected to the Basan campus.

It was suggested to focus on the opportunities instead of the problems and to list the recommendations in priority order. And it was stressed that the lack of entrepreneurial spirit in most areas often was the main obstacle for a dynamic development. The inhabitants in remote regions often had very few opportunities to travel, which is a major source of inspiration. Examples from this meeting were the elk farm manager, who got his inspiration from Russia, and the greenhouse and fur farmers from Österbotten, who were inspired from study trips to other parts of Europe.

It was claimed that education does not necessarily improve the entrepreneurial spirit. It was a.o. mentioned that there were 25 000 students in Umeå, and statistics indicate that probably only a small fraction of these would set up their own business in the region. Most of them will not be able to find suitable academic jobs and will therefore leave the area

Any other business

Finn Rexen mentioned that the EU Commission has mentioned the possibility to eventually continue (parts of) the Basan activities through the INTERREG III programme. (Individual interregional co-operation projects). Eligibility is extended to the new member states including Poland and the Baltic states. Finn Rexen will try to establish a consortium and to prepare a proposal.

Deadline for submission of proposals is 26 September 2003.