

Agri- production and Agri-culture

The Basan survey has found many successful regional examples of small scale speciality productions of region specific foods, medicinal plants, herbs, spices, fruits, berries etc. etc. Such productions can be very important for the individual farmers and add positively to development of the local rural society. On the other hand, small productions of speciality products cannot alone meet all the current and future challenges that the rural areas around the Baltic Sea are faced with.

The survey has also revealed that the most prosperous remote regions in the Baltic Sea area are those, where the business activities are clustered around one or more dynamic centre(s). Examples are: The medicon cluster in Luleå, the biotech cluster in Lund, the IT cluster in Oulu.

Agro-industries are normally not included in those clusters, however both within the food area and the non-food area there are examples of high added value productions building on high tech solutions from both the biotechnology and the information technology sectors. It is thus already with todays technology possible to establish high added value large-scale productions based on agricultural raw-materials. It might therefore not be unrealistic for regions, where agriculture is dominating, to strive for the establishment of such local "locomotives" i.e. large efficient production units that can compete also on an international market and efficiently contribute to the development of the whole rural society.

There could thus be two main dimensions in future rural development:

q Agri-production: A rational and sustainable agri-production and agro-industrial production that is viable with a minimum of subvention.

q Agri – culture : A multifaceted, very diversified small scale production of region specific products.

The two dimensions are different in nature and presumably they have different incentive requirements and innovation demands. It might therefore be useful to deal with them separately.

While the small scale productions – agri-culture – often will be established by one or a few individuals, the "locomotives" most often will require a group of entrepreneurs or one or more already established company(ies).

Ad. Agri-culture

Most regions in the Baltic Sea area have their own traditions and their own region-specific products – both food and non-food – that are sold on local markets. They are part of the local heritage and part of the regional identity, and measures to preserve these products should be ensured.

Many of them will presumably be of interest also outside the local market. However, normally these small producers do not have the skill and financial means to expand their market. The establishment of a centralised marketing function, serving a cluster of SME's and including quality control and a labelling system might be the incentive needed for expanding local activities. Thus the disadvantage of having to sell to small local markets may be turned into an advantage of selling "authentic" and exclusive products to new markets.

In addition there might be local conditions – climate, soil type, local skills, financial incentives etc.- that are beneficial for added value speciality productions that often will find their markets outside the region. New technologies – e.g. generated through EU research programmes – provide new opportunities for flexible specialisation and thus for niche strategies. To take advantage from this it is, however, necessary that the regions themselves are actively involved, react in time and have a clear vision of their stronger points and build possible innovation strategies upon these.

Some of the countries around the Baltic Sea are these years experiencing a shift in consumption patterns. Consumers are increasingly including intangible aspects in their decisions about which products to buy. The groundwork for this shift was laid in the eightieths, when consumers first began to express concerns about hazards of industrial production methods by demanding products that were produced with due care for environment. Furthermore consumers have proven that they are willing to pay a “green” premium for environmentally friendly products.

Such trends could favour a development of the remote rural areas around the Baltic Sea, provided the required incentives are present. Authenticity will become a very important issue. An increasing number of consumers wish to know, where the products they buy, come from, and how they are made. This demand might be met by the establishment of a network of small production units with centralised marketing and quality control as mentioned above. The famous “appellation controllee” system that has been applied for French wine for many years, might be used as inspiration for a Baltic Sea control and labelling system.

The sophisticated consumer in Europe (and to a larger extend in USA and Japan) is amply supplied with staple commodity foods, and food safety and consumer price seem to be the main issues, when the consumer makes his choice. As a matter of fact consumption of most commodity foods is stagnating, competition is tough, and price is becoming the most important sales parameter.

On the other hand there is also a growing demand for diversity, improved quality (taste and functionality, “health factors) and multiple choices year round. In addition there is a general trend towards authenticity, “natural” food and food including factors beneficial to human health, putting pressure on suppliers to set up their own control systems.

In conclusion: It will be difficult for new companies in remote rural areas with logistic problems to take up competition with more centralised large food factories producing traditional food products in high volumes. Instead focus should be on production of region specific products and low volume innovative products in high quality and with “built-in” health factors.

Ad. Agri-production

“Agri-production” means efficient production and processing of bio-materials for food- and non-food applications.

The liberalisation of the agricultural markets under Agenda 2000 (and the revision) will give farmers more options concerning the ways they use their land giving a potential outlet for e.g. more intensive non-food crop production. To prepare for the eastward enlargement in the agricultural sector, the pre-accession aid for the candidate countries already commenced in the year 2000. The funds allocated to the agricultural sector shall flow into rural development mainly. This might certainly benefit the regions around the Baltic Sea. In addition, it might be agreed to set aside a certain percentage of land in the candidate countries in order to reduce overproduction of certain agricultural commodities. If the same rules shall apply as in the current set aside scheme in the EU, then this could open up for a large production of non-food crops that can be grown on set aside land without loss of subsidies.

Like other areas in Europe a few main crops – biomass, cereals, oil-crops potatoes and sugar beet, dominate agriculture. However, new activities should not only focus on these crops. It is important to maintain or improve diversity, and also not so common crops like flax, hemp, lupins, amaranth energy crops etc. should be considered.

The bio-based non food industry is more complex than the food industry. It includes traditional industries such as textile industries, paper industries, cosmetics industries, and new industries such as solid fuel industries and biodiesel and bioethanol producers, producers of plant extracts for dyes, flavours, pharmaceutical etc. To this may be added emerging areas such as molecular farming (page x).

The EU funded network IENICA concluded in its final report to the Commission (year 2000) that the use of non wood fibres is likely to increase from 500.000 tons to 600.000 tons in 2003 in EU, and that non-food starch use might increase from 2,4 million tons in 1998 to 3,6 million tons in 2003. Also the non-food use of vegetable oil could increase considerably - from 2,6 million tons in 1998 to 4,1 million tons in 2003 - if EU matches World growth.

In the past agricultural groups fought one another over stable markets. The vast majority of R&D funds have gone into this kind of competition. Advances in making high fructose corn sirup undermine markets for sugar. Wheat starch competes with maize starch and potato starch etc. Competition is healthy, but overall such competition does not increase the total demand for agricultural products.

The current trend is to substitute fossil raw-materials, such as coal and mineral oil with bio-based raw-materials, which will increase the outlet for agricultural products. The potential market is not as big as the food market, but still quite considerable. Many of the non-food production potentials are attractive for rural areas for several reasons.

- q They tend to be environmentally benign.
- q They use a renewable feed-stock produced locally, and
- q They often rely on biological processes that operate at low temperatures and at ordinary pressures.
- q Furthermore they may be competitive even in relatively small scale.

An ethanol refinery, for example, is about a third to a tenth as large as a petroleum refinery. A plant making bio-chemicals can be as little as a hundredth the size of commodity biochemical plants. A bio-mass gasification plant may compete with a coal gasification plant five times in size.

The relative modest scale of biorefineries means that they can proliferate in rural areas, It also means these new types of manufacturing enterprises lend themselves to co-operative ownership (page x).

Co-operative bio-refineries (food or non-food) can be the vehicle for linking the bio-based economy to rural economic development. They may maximise the income that stays in the local economy.

The ultimate advantage of a bio-refinery may be the possibility to separate a given crop in individual components, as illustrated in the Vita-wheat project (page x), where wheat is separated into 7 product groups with added value as functional food and nutraceuticals.

Bio-refining of rape-seed is another example. (page x). In figure x (below) is thus shown the added value effect from an optimal utilisation of all botanical components in rape-seed.

Income from refinery products as a percentage of total income from traditional refining:
(From Assessment of the commercial success of the ÉCLAIR programme: EUR 19338. EU 2000)

The food industry in 2010

The Danish MAPP Centre for Research on Customer Relations in the Food Sector has together with the Technical University of Denmark (Dept. of Engineering and Management) set up three scenarios for a possible future development in the food sector. (Scenario Research – The Food Industry in 2010:MAPP – Annual Report 2001).

The aim was to identify the demands the food industry can expect in the future plus which research areas the public research should prioritise in order to support the development of competences within the food industry.

Although the scenarios are isolated developments, in practise the future is likely to be a combination of the different tendencies within the scenarios. The work is based on Danish

conditions, however as food production and consumption is international, the results will probably be valid for the other countries in the Baltic Sea as well.

Naturalness

The first scenario “naturalness” has focus on consumers that put emphasis on sustainability from farm to fork and they consider organic foods to be more wholesome. These consumers feel a growing need for protecting the nature and living a healthy life and they reject genetically modified foods.

This consumer group will no doubt be attracted towards the “Agri- Culture” scenario, and they will become major customers to the small agri-culture producers.

Technology driven health

In the second scenario the consumers have a quite different perception of food. These consumers have accepted both functional foods and genetically modified foods. They have confidence in modern food production and believe they are well informed and have a realistic picture of how to produce modern food.

The challenge in this scenario is the accumulation of knowledge that has to take place in order to develop and produce “high tech” foods. The scenario calls for research and development, and it is questionable, whether individual companies will be able to finance and organise this.

The “technology driven health” scenario is linked to the “Agro-Industry” scenario. The two virtual factory examples are good representatives for the food/health sector, and the stage/gate principle (page x) would in many cases be the best way to perform the necessary R&D.

Tight spending

The last scenario, “tight spending” is based on a lower disposable income and extensive internationalisation. Prices are the main criterion of choice with the result that quality foods and organic foods are niches for this consumer group. The focus on value for money is the central driving force in this scenario.

Central retail chains are dominating the distribution of these food products, and the retailers more or less dictate price and quality.

Also this scenario is linked to the Agro-Industry scenario.