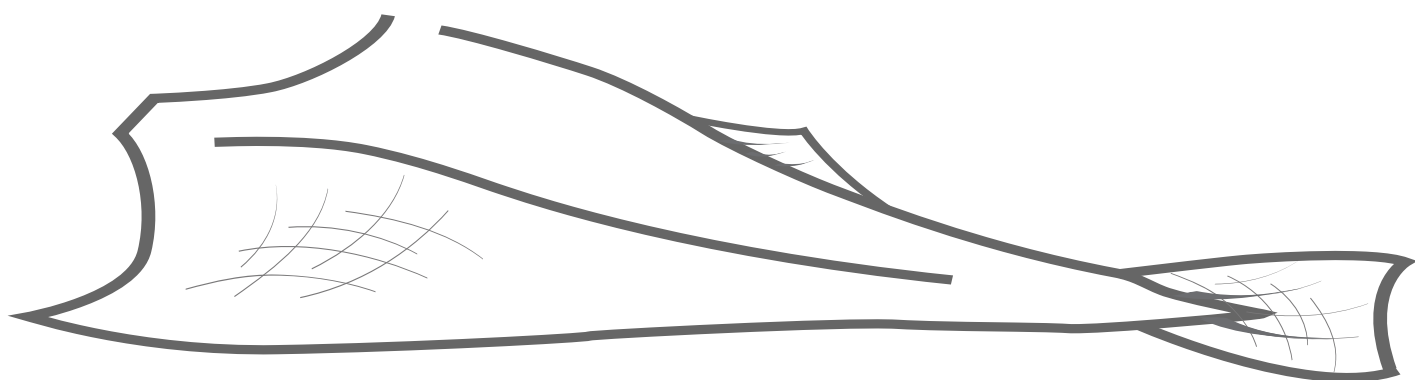


04/09
REPORT

THE NORWEGIAN-SPANISH SALTED FISH PROJECT



**Knut Bjørn
Lindkvist**

**INNOVATIONS AND MARKET RESPONSE IN
THE NORWEGIAN SALTED FISH INDUSTRY**



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THE NORWEGIAN-SPANISH SALTED FISH PROJECT REPORT is a series of publications from the project "The Spanish salted fish project and the opportunities for the Norwegians". The project is partly financed by The Research Council of Norway and Norwegian fish processing industry.

The project "The Spanish salted fish project and the opportunities for the Norwegians" focuses on the restructuring of the Spanish salted fish market, and investigates possible strategies for Norwegian salted fish producers to increase their market share in the Spanish salted fish market. Salted fish products have been in the heart of Spanish and Norwegian culture for centuries. Production of bacalao salado (salted cod) emerged in Spain the 13th century, and the Norwegians have supplied the Iberian markets for 300 years. During the last decades a fundamental restructuring of The Spanish market for salted fish products has occurred. Consumption has increased, new products have been introduced, and the entire process of salted fish production has changed. The project aims to examine the key factors responsible for such trends in one of the world's leading seafood markets, as well as supporting good business relations between Norwegian and Spanish producers.

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Innovations and market responses in the Norwegian salted fish industry

Background

The project ‘The Spanish salt fish market and the opportunities for the Norwegians’ examines how cultural, technological and social factors contribute to the restructuring of the Spanish salted fish market and the production systems linked to the salted fish value chain. The project especially focuses on the production chain, from the fish being caught in Norway until the final products are consumed by the Spanish market, and the opportunities that Norwegian producers encounter in this process. Lindkvist et al. (2008) examined the restructuring of the Spanish salted fish market, and discussed together with Lindkvist & Sánchez (2008) some of the causes for these changes, relating them to technological and institutional restructuring of the industry and to new preferences among consumers. The problems met by the Norwegians seem to illustrate a classic case of lack of adaptation between the products offered by the Norwegians and the products preferred by the consumers. The objective of this project on the Spanish salted fish market is therefore to study the conditions for improvement of the Norwegians’ export push. The starting point for this project is the changes of consumer preferences manifested by the product conventions or demands of the consumers, followed by the discussion of possible reasons for the Norwegian deadlock, and possible strategies needed to solve the market and production challenges. This paper presents some of the research background of the project, followed by a brief presentation of the activities included in the research programme.

Theoretical background

Industrial innovation is considered necessary to strengthen the competitiveness of firms and to contribute to regional development (Malecki 1997, Moulaert & Sekia 2003, Storper 2009).

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There seems to be agreement that increased competitive pressure among firms, increased competition from developing countries and high levels of costs and salaries in Europe, make product differentiation necessary (Crevoisier 2004). In many peripheral regions much effort is concentrated on food production from resources located in the vicinity. In addition *'(t)he local development of rural areas in peripheral regions .. (is) .. heavily influenced by the behaviour of small and medium agro-food firms'* (De Noronha Vaz et al. 2006, 96). If local businesses in such regions succeed in innovation and new investments, and are successful in increasing trade and participation in international markets, such activities may also result in prosperous development for the places and regions in which the firms are located. Hopefully, local and social sectors of the economy will flourish by strengthening the pool of human capital, and may thus contribute to the establishment of regional innovation systems. Then the establishment of positive causal development paths or trajectories may be achieved in the spirit of Myrdal (1957), and in line with the theories of the economists Marshall (1920) and Arrow (1962).

Such normative conditions may not be supported by neoclassical trade theory. Nevertheless, the production in peripheral regions was originally based on comparative advantages provided by their affluence of resources. Innovations consisting of new products, improved production processes or better institutional and organizational conditions for instance for food production – processes taking place on a general basis in the world – have seemingly resulted in the reduction of original favourable situations enjoyed by the peripheral firms, and thus transferred the advantages to actors more centrally located. The consequences have, paradoxically, been a deepening of the peripheral status and an increase in scepticism towards innovations and changes to those established production structures that probably need modernization most. However, with increased frequency in international trade relations, following the intensification of globalization, it is reasonable to believe that such scepticism on the periphery towards sharing of secrets, is also present, not only at a peripheral level but also at national level if national actors are losers in the trade competition with actors from other countries. The result may produce a culture of national protection and scepticism towards sharing of knowledge about markets, the level of competitive prices and processes.

Norwegian producers of salted fish have actually manoeuvred themselves into negative trade relations with their Spanish colleagues which could actually be predicted by the neoclassical theory (Lindkvist 2004, Lindkvist et al. 2008, Lindkvist & Sanchez 2008). Norwegian

producers have been unable to restructure their production in step with increased competition and changes in demand. Thus, Norway and its producer environments have seen some of their comparative advantages vanish (Lindkvist et al. 2008). In the mid-1990s, Norwegian producers of salted fish experienced a market share of more than one-third of the Spanish market. From 1998, Norwegian exports of salted fish declined and by 2005 were less than 10 per cent. Norwegian producers have not been willing to meet the Spanish challenges through increased collaboration on market intelligence and with new products. On the contrary, scepticism towards collaboration was widespread and substantiated by possible loss of business secrets and competitive strength (Lindkvist 2004).

This paves the way for an interesting research case demonstrating the consequences of such negative attitudes to sharing of market secrets and collaboration on competition located in the Norwegian salted fish industry. The result might be that this industry loses markets, and most probably will experience reduced total income. Consequently, the regions most dependent on this production will also lose income and experience a weakening in their regional development.

By combining standard trade theory and the focus on conditions for competition with evolutionary growth theory, the economic geographer Michael Storper (2009, 4) discusses the contribution of innovations to economic growth for others as well as the innovators. Originally, innovations established comparative advantages and monopoly rents for those firms that initiated the new development. However, in the longer run, the returns for the whole economy will increase and the monopoly rent will diminish for the initiators. Even if the returns of the original innovation drop through the diffusion of innovations and knowledge for the first actors, the distribution and sharing of technology will increase knowledge and learning, lead to re-combinations and reuse, which in turn, will increase the returns more, and thereafter establish persistent growth throughout a wider territory than originally was the case.

Storper (2009) assumes that the conditions of the growth theory with regard to recapturing initiatives, reuse and increased returns rest on the ability to make use of contextual advantages. Such advantages are located in the links between resources from networks between the actors and the ability to follow the conventions throughout the whole production chain. If such advantages are absent, or the context has set up institutional barriers, the context will be unable to contribute to the diffusion of impulses already present in the external

economy. On the contrary, any effort which might change the conditions of competition to the benefit of some and not all, might probably be stopped and counteracted.

The concept of *conventions* employed in this paper will be used to analyse relations between the producer, the environment of the processing activities and the consumers. The conventions concept was originally suggested by the French sociologists Boltanski and Thevenot in 1991, and refers to ‘... *practices, routines, agreements, and their associated informal and institutional forms which bind acts together through mutual expectations*’ (Salais and Storper 1992, 174). The routines and agreements on performance of relations decide how knowledge, interactive learning and innovations in the production systems must be handled (Storper 1997, Hayter 2004, Boschma 2004, 2005).

For our part the division between formal versus informal conventions is important. Normally, trade and production activities focus on formal rules, but also on the organizational and institutional frameworks of the rules. Together they form the core of governance systems and the regulation regimes of the fishing industries and forbid or accept actions and activities. Fundamental governance systems of the salted fish industries are linked to the laws on food production and food safety, and to the structuring of the production chain of the fishing industries. According to Gertler (1997, 52) such regulation regimes are also central when focus is on the understanding of cultural differences and the ability of the different contexts to participate in networks and regional innovation systems.

In all analyses of food production based on conventions, six convention categories are central when demands and rules are focused on production and processing. Three of them are directly linked to the activities in different parts of the production chain. The market conventions belong to that part of the chain which incorporates consumers. These conventions emphasize the product qualities wanted by consumers. The consumers intend to realize their own consumption projects through the resources at their disposal. The specific quality wanted from the product, may together with time, own skills and good service from the suppliers help them to bring about values (good health) or recreate happy family gatherings (Andersson 2007, Østli & Pleym 2009).

In all units of the production chain production conventions exist which are related to the production systems where the specific production is taking place. In several countries producing fish, the production facilities are located in a scattered manner. Over the

generations, local industries and their owner firms have developed routines and traditions expressed via rules as to how fish production should be performed. Such local priorities are emphasized by *the domestic production conventions*. They point to a consensus among producers and other parts of the environment as what should be considered quality products of a standard they can accept. Such conventions have, in other words, a geographical and cultural basis.

However, regardless of where the production is located or which demands are directed towards the products by the customers or the governance system, the production must contribute to the settlement of production costs. Most important therefore are the demands for an efficient and cost-saving production, expressed by the so-called *industrial conventions*. Producers obtaining industrial quality of their production means that they are able to standardize and make technology work efficiently.

The other main type of conventions is linked to the frameworks of the production chain. They function as tools of coordination and control the actors located in the environment outside the production chain. Irrespective of which type of food product is the focus, or where the product originates, produced food must contribute to health and security, and in most cases also to social justice. These are rights that all inhabitants of a country enjoy. The conventions that defend such rights are *the civic conventions*, which, in other words, defend the interests of the citizens and also means that civic standards must be implemented in production. All products should, in addition, be able to be defended from an ecological point of view and as an organic product. *Ecological conventions* must, in other words, satisfy the so-called ecological qualities, which means that no products should be marketed if they are not organically produced or produced from a sustainable resource. However, regardless of the background of the product there exist some product properties attractive to customers. If the brand is recognizable and has a good reputation, it is possible to say that the product reflects the so-called general and public qualities, and in this way satisfies the demands of *the public conventions*. Goods from a specific country may also be associated with qualities responding to product properties wanted by customers.

Successful production is, in other words, a complicated process with many demands on quality and production. The producer must follow the recipe and production rules to satisfy quality requirements demanded by consumers in the market, or requirements for ecological considerations. Demands will also come from domestic arenas dominated by local tradition

about what constitutes good products. Finally, the demands made on efficient and profitable operations have to be taken very seriously. A marketable and successful product involves all such elements. To meet all demands are challenges which all actors in the production chain have to solve in a satisfactory way (Lindkvist & Sanchez 2008).

These conventions are monitored and attended to by actors and institutions in all the chain units. These participants form, together with rules and practices, in other words the conventions, what we call a *governance system* for the value added processes in the whole production chain from producers of raw products to the consumers. Although admission to the production chain is open to all producers abiding with the conventions, participation still has to be monitored and regulated. Participants in the chain units have to follow practices regulated by customs or formal or informal law in the way that relevant institutions and the actors themselves demand. However, final judgement over the right of the producers to participate in the production chain are made by the consumers, who evaluate the production efforts by their buying or rejecting the products offered.

Who are the actors and where is the origin of the conventions to be placed?

Modern evolutionary economic theory has focused on innovation and *technology* as the basis for growth in regions as well as in firms. Technology here means production technology and artefacts in the more traditional meaning, but also knowledge which is transferred from person to person, or which is formalized in textbooks and teaching. Through technology, new machinery and production factors are combined to produce new products and develop new methods. Innovation systems organize such processes at different spatial levels. The outcome may, for instance, be the emergence of new knowledge which can be monopolized or dispersed among production environments at regional and national levels.

If knowledge is monopolized the principal actors in the production systems managing the process often establish a leadership that can be used as an exclusion mechanism against newcomers and intruders, and, for a period, deny them admission to this innovation within process and organization. The region, country or group of actors who lead this innovative development then, for a period, obtain a monopoly position which may enable them to collect the extra profit already referred to.

The way the producers in all units of the production chain *organize* themselves, and the institutions used in the management of the production process, reflect the technology at their disposal. For this reason the community of producers forming the local and regional production systems will behave as defenders of the actual technology in use. At disposal for their defence functions they utilize the set of conventions required in the concerned economic activity and production chain.

All actors in the production chain are localized to *places and regions*. The dominance and possible agglomeration of certain groups of actors in specific places mean that the conventions and behavioural practice they follow, the technology and production competence they possess characterize the place or the region. The technology with the relevant knowledge involved, specific institutions and organizational practices will, in other words, attach to the place or region. A joint cognitive platform is achieved from this platform of experiences. The resulting competence enables them to develop technology as well as products and then secure increased wealth and success in international trade if this is focused upon their activities.

All relevant conventions directly linked to production of salted fish have not only a functional but also a spatial basis. The markets are usually located in specific territories, places and regions. Although the Spanish salted fish market may be considered within a national context, the different Spanish regions have their own food traditions concerning salted fish. They establish Spain as a heterogeneous production and consumption market for salted fish products (Gallart-Jornet et al. 2005, Lindkvist et al. 2008). The conventions for salted fish production originated among the fishermen of coastal regions in northern Spain five to six hundred years ago. Later on the fisheries and the primary production were transferred northwards to the coastal communities of the North Atlantic. In the places where work practices are carried out, all activities are performed with a specific combination of technology use and the organization of fishing and production based on conventions and values. Over the course of time such activities are regularly repeated in the production environments, and also influence and characterize the remaining parts of society. They become part of the cultural glue which binds inhabitants and economic actors together.

Geographers and economists such as Storper (1997, 2009) and Crevoisier (2004) have underlined the interaction between technology, organization and institutional practice and territory. They claim that the interaction between the three elements function as a 'holy

triangle', and is a central component of the evolutionary and institutional school of regional economy.

A final concept clarification regards the production chain concept which forms the backbone of the theoretical model that functions as the analytical tool for the project 'The Spanish salt fish market and the opportunities for Norwegians'. The processes already referred to as technological, organizational or institutional and territorial are working in the transformation and value adding processes through all stages of the transformation process, from the raw products being gathered until the finished food product is consumed by the final market actor, the consumer. This process is linked systematically in what already is designated as the production chain or the value chain (Porter 1990, Dicken 1998).

A traditional definition (Dicken 1998) of a production chain focuses on a number of functions linked by transactions in a row where the production process in every subsequent link or production station of the chain increases the value of the goods and services, and where the buyer pays for the values added in the opposite direction of the flow of goods.

According to Dicken (1998, 6), this production chain contains transactions and processes, but within a context of technology, research and development, plus communication processes and processes of transportation of materials, goods and men.

Finally, the production process has to be recognized within an even wider context where the frameworks consist of the financial systems and the regulation regimes.

The comminution of the food production chains reveals a complex composition of actors all the way from the producer or harvester of natural resources in the primary industries, via the processors in the secondary industries (whether in Norway or in Spain) to the conveyors, the trading partnerships, the retail distributors and the consumers in the tertiary industries (Lindkvist & Sanchez 2008). Every group of stations and actors involves the governance system and those regulatory authorities that have the different stations of the chain within their scope. The production chains operate within the conventions that are relevant for each station of the chain. It is evident that geographical as well as functional exchanges between different places and practices will lead to different sets of production rules or conventions.

It is now possible to link the production chain concept to the concepts taken from the 'Holy triangle'. Figure 1 shows the connection between the different concepts which are the basis of

the salted fish project. First, the technology factors and the institutional or organizational factors are linked to the production regions. Fish production among fishermen and the processors take place in Norway, for instance in Finnmark and Troms, in the Ålesund region or other places. It also takes place in Iceland, Spain, Russia and China. The producers in such regions make use of the technology available within the existing institutional and organizational frameworks.

Since every unit of the chain is said to be linked to specific regions or places, then the region becomes a contextual influenced agglomeration of applied technology, institutional conventions and communities of actors. The actors at the place, or in the region, operate as already mentioned from a joint cognitive platform shaped by the know-how of the specific regional industries and competence. Since the functions are also located in specific regions, then some of the convention categories, of course, are used in specific regions or places. If divergence between the convention categories is demonstrated, the reason may be that the institutional organization of production in the different places and in the production chain is not consistent, and that the actors in the different places are collaborating with relations infected by tension.

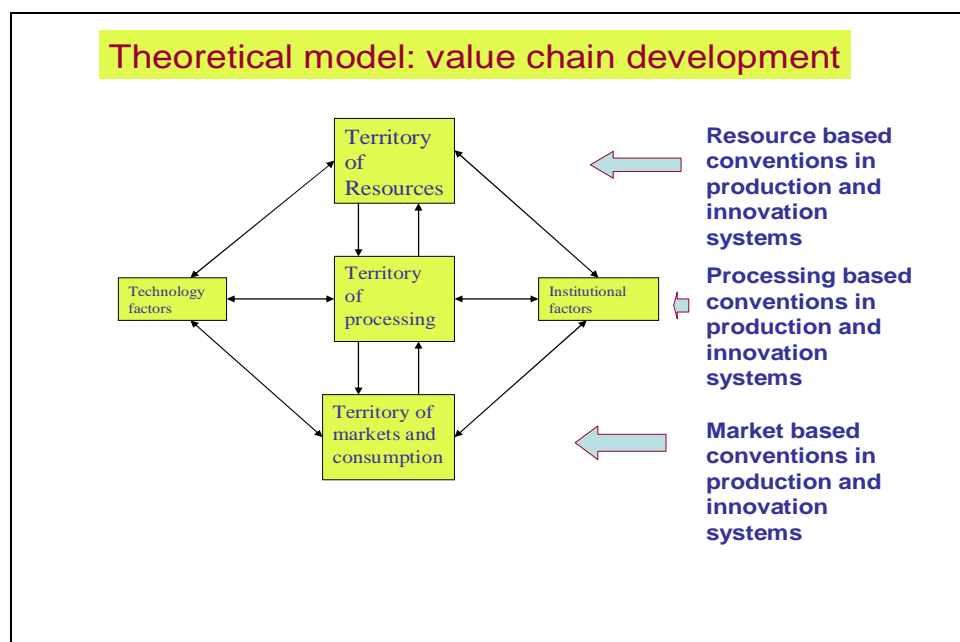


Figure 1 Production chain and conventions in the production systems

Already the discussion of conventions in the food industries has indicated that tensions might exist between the chain actors, and therefore also between the spatially located production systems. Demands from the consumers in the markets (Spain) about food quality may originally be different from the efficiency claims of the industrial conventions which are expected to dominate the salted fish processing industries and the places with such industry. In addition, old traditions in the Norwegian fishing industries are expected to influence characteristics of domestic conventions among the primary producers as well as in the processing industries. It is therefore not certain that there is accordance between the governance systems in markets and in the fishing communities. Most probably a disagreement will exist between the governance systems with their totality of social conventions (civic, ecological, public) and will contribute to complicating further the interactions between actors.

Storper emphasizes how important it is that the local production system adapts to all relevant conventions in the production chain, and he then indicates indirectly that local firms have problems adapting to consumers in distant markets. ‘..... (T)here is a deep and recursive relationship between the quality of products and production systems...’ (Storper 2009, 11).

Transactions between the actors of the different stations of the production chain have become even more complicated due to the competition between the international units of the production chains. Not only are the different fish species and products sourced through different production chains, differences also exist between the productions chains of the different producer nations, how they are internally organized and how they are linked to the different market units of the chains. The Norwegian version of the salted fish chain is, for instance fragmented with independent fishermen, fish producers without quotas for raw product acquisition and independent sellers of fish products. The Icelandic chain is obviously more integrated upstream as well as downstream as the fish factories dispose of their own raw materials, and they are also in part integrated deeply into the Spanish market. For this reason their market contacts are more intense than is the situation for the Norwegians.

A final circumstance which contributes to the complexity of the production chain, independent of national conditions, is that the actors are also communities of industrial actors with specific interests to be defended. Such interests may be the defence of the monopoly rent or the other advantages which are believed to exist in the region. The market actors are

expected to defend their positions in the market, and will most likely react against producer communities trying to integrate upstream in the production chain.

Research problem

Spain is one of the biggest consumer markets for seafood in the world, as well as being one of the fastest growing markets for salted fish in Europe. The country has increased its import of

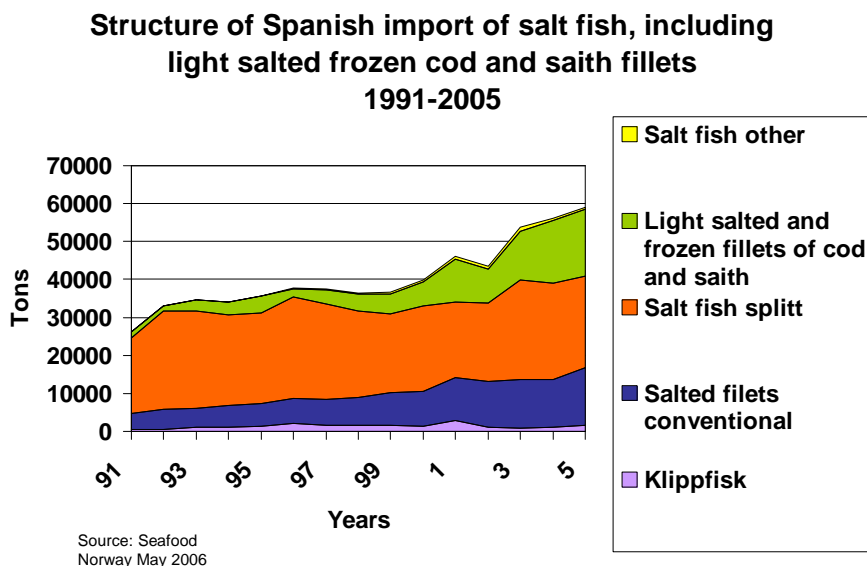


Figure 2: Spanish imports of salted fish products

conventional salted fish products from 25.000 metric tons in 1991 to almost 42.000 tons 14 years later (Figure 2). New and frozen salted fish products have been introduced in the last 10 years and have contributed to an increase of the total import volume up to almost 60.000 metric tons. When producers outside Spain want to enter this market they have to adapt to the demand trends with products and services, which are expressed as changes in consumer preferences and by market conventions. Until the mid-1990s Norway sold as much traditional salted fish to Spain as did Iceland, and in 1996, Norwegian producers supplied the Spanish salted fish market with 34 per cent of its total imports which at that time was about 32.000 metric tons. From 1998 the Norwegian decrease started to accelerate, and by 2005 the market

share was under 10 per cent. Norway was almost absent among suppliers of the new product categories, fresh injected fillets and conventional salted fillets.

With conventions theories, theories on the production chain and the spatial structure of the production chain, the following argument is relevant in discussing some of the reasons for the recession in Norwegian exports of salted fish to Spain.

When market conventions have little influence over industrial food processing in Norway, and the industry is characterized by local production conventions, networks without collaboration on innovation and where governance forces (from chain structure and law) obstruct the market influences, then the processing industry will potentially lose even the remaining parts of this market. Simultaneously, the industry may experience a decrease in total income, and the communities and regions relying on this industry will be influenced in a negative way.

The further discussion will leave out aspects of the argument that refer to the spatial consequences of the argument, and these will be returned to later. The discussion of the tenability of this argument will, in this chapter, instead concentrate on central processes behind the changes in the Spanish market. The focus will be on new institutions established in this market, as well as on institutional barriers the Norwegians themselves have built up and which probably have resulted in a lack of adaptation to conventions among Spanish buyers and consumers. The outcome of the processes has been Spanish scepticism to the Norwegian producers and a loss of market position in Spain. The paper will conclude with a short presentation on the activities and projects central to the project in order to increase the possibilities for the Norwegians in the Spanish market.

The processes behind the changes in Spain²

Social and economic changes

The main trend in the Spanish salted fish market in the past decades has been a transition from traditional production processes and products, to variety and flexibility, and a more abundant assortment of products. Deep social changes are behind this restructuring, shaping new

² The section on the restructuring processes in Spain is based on Stabell, Gallart-Jornet and Lindkvist 2006.

demands among consumers. More women are in the labour market and will, for practical reasons, have little time to dewater the traditional salted fish. Another factor are new ways of organizing the market supplies. In addition to the traditional salt fish trade organized through fish markets for consumers, an increasingly larger share is sold to super- and hypermarkets. Icelandic firms have especially established themselves in such market networks, also leading to changes in traditional distribution systems. Less time for cooking after work also means less time for buying food. A final factor which has influenced the development of the Spanish salted fish market is the new market regulation regime, following entry into the EU and the introduction of the EU Common Fisheries Policies.

Salting processes and technology

The salting methods, traditionally referred to as dry salting, pickling and brining, extracted water from the fish meat and made transportation and warehousing possible in a hot climate. The modern method consists of injection of brine into the fish meat. This method may be combined with traditional methods, new salt solutions and the addition of chemicals when required. This is normally the injection of different solutions with phosphates and anti-oxidants (Carnal in Iceland) which binds water and makes new products possible. The products can be displayed in more striking ways in supermarkets. Economically, these new methods are superior to traditional salting methods. However, such methods are not legal in Norway for the production of traditional, fully ripe salted fish.

New technology and new products

Effects of the new salting processes need to be discussed in a production chain perspective. The processing of traditional salted fish consists of several stages and lasts for three to four weeks. The finished product normally weighs considerably less than the original weight of the raw products. In addition, labour costs accumulate, and together the reduction in volume and high labour costs lead to a substantial price increase for the desalted *bacalao*. Compared to the production process for light salted fillets which takes two days (thawing, filleting, salt injection and freezing), the traditional process is unable to compete. Processing time of salt injected fillet is reduced to less than one-tenth, to two days. In addition, a weight increase

follows. This modern product may then be sold for less than half the price of the traditional product.

Another trend among customers in the Spanish market is the increased demand for *ready-to-use* products, implying that the desalting process has been transferred from the customers at home to the salted fish processors. The final new products are mainly desalted fresh or light salted frozen cod products.

Figure 4 indicates which new products have increased their share of the Spanish salted fish market.

The figures for market changes in Spain are indications of the import statistics for Spain; However, the trends are striking. First, total imports into Spain of traditional and new salted fish products has more than doubled since 1991, and is now almost 60.000 metric tons. Spain is obviously not a stagnating salted fish market, but exciting and expanding. Figure 3 shows that traditional wet salted fish is still the most important salted fish product to be imported by the Spanish. However, the imports have decreased somewhat from almost 24.000 metric tons in the period 1991–1995, to more than 23.000 tons for the years 2001–2005. This group of products is characterized by stagnation with a small reduction in volume. Relatively speaking, the reduction is significant. From being 76.6 per cent of the market in 1991, 62.6 per cent in 1998, wet salted fish fell to 41.2 per cent in 2005, a decrease of 35 per cent in 15 years.

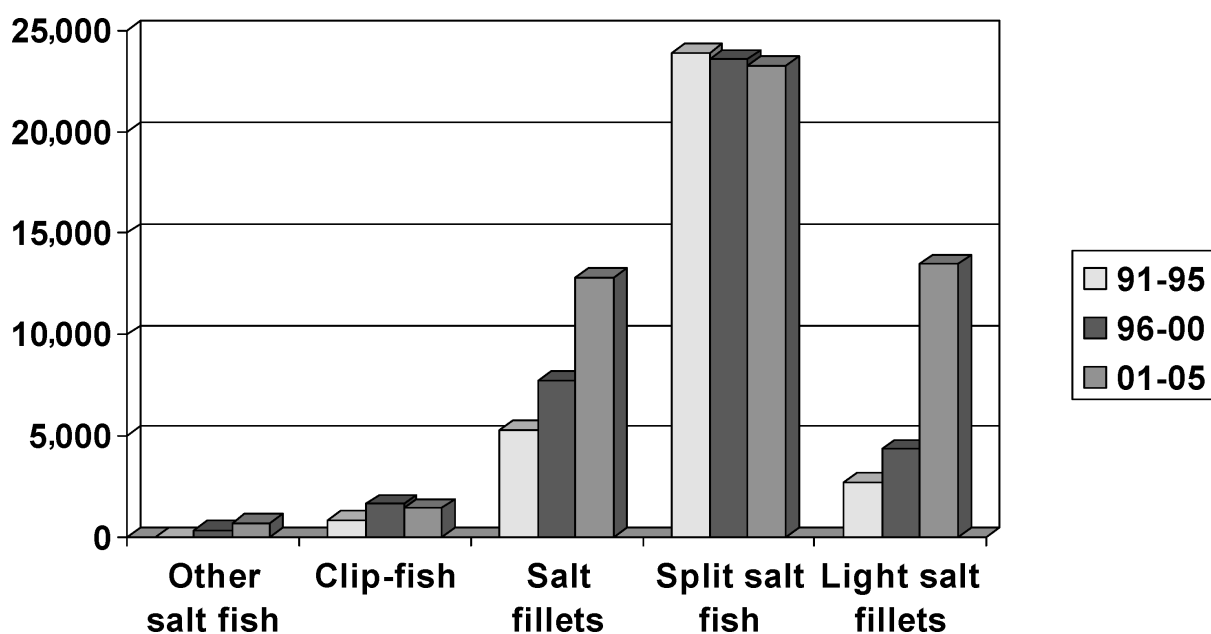


Figure 3: Structural changes in the Spanish importation of salted fish 1991–2005

The type of products that increased the most seems to be traditional salted fillet and light salted injected frozen fillet. These changes indicate that imports of conventional fillet have greatly increased from 1991 to 2005, from more than 5.300 metric tons on average for the years 1991 to 1995, to more than 7.700 tons for the period 1996–2000, and to almost 13.000 tons for the last five-year period from 2001 to 2005.

In the period 1991–1995, about 2.700 metric tons of frozen salted cod fillet and saith fillet were exported from the country. Thereafter, exports increased to more than 4.300 tons on average for the years 1996–2000, and then to almost 13.500 tons for the last five-year period. To illustrate the increase in this product, it should be mentioned that its total import by Spain, was 17.500 tons in 2005. The Nordic countries dispatched more than 10.000 metric tons of this product in 2005, less than 7.000 tons of frozen fillet coming ‘from other countries’. It is expected that China is an important supplier in this case.

New institutions

While Norway has lost influence in the Spanish salted fish markets, the situation for the Icelandic producers has been different. Icelandic firms increased their exports of different types of salted fish products from about 12.000 metric tons in 1991 to almost 30.000 tons in 2005. The types of products which have increased their market share fastest have been fillets of cod and saith (according to our informants they are light salted and injected) and conventionally salted fillets. The Icelandic firms control about half of the Spanish salted fish market. The Icelandic advancement is an interesting study of strategic adaptation and use of new typologies.

Institutional changes and the influence of the Icelandics

The influence of the Icelandic producers over the last 20 years has influenced the institutional changes observed in the Spanish salted fish market. At the beginning of the 1980s three monopolies dominated Icelandic salted fish industries, *SIF*, *Icelandic* and *Samband*. At that time the Icelandic firms exported about 4.000 metric tons of salted fish to Spain. The profitability of the Icelandic salted fish industries was dismal. However, during the early years

of the 1980s the Spanish salted fish markets were changing, and gradually more salted fish was consumed in restaurants. During the 1980s the Icelandic producers tried to improve traditional salted fish. The product innovation appeared as the *Tandur* fish, which was a much better product than the earlier salted fish and was accepted by the Spanish market.

By the end of the 1980s the Icelandic interest in the Spanish salted fish market had increased. Political and institutional changes made the Spanish market accept external initiatives, and when the country became a member of the EU in 1986 monopolies were no longer popular. In Spain one salted fish monopoly operated from Bilbao and another from Barcelona, and the Icelandic firms were dissatisfied that these two companies bought up 80 per cent of all Icelandic salted fish without no influence on the part of the Icelandic exporters. In addition, the Icelandic actors considered the market to be more promising than the sales situation indicated. In 1988, the Icelandic firms decided to increase their influence in the Spanish salted fish market and seek greater control over product development for this market. The relationships between SIF and the Spanish monopolies were broken in 1988, and an Icelandic–Spanish sales network with 11 collaborating Spanish firms was established. Other changes were made in Iceland with the introduction of formal quality standards or conventions for quality salt fish products. Finally, a last and important institutional change applied to fishery management in Iceland which allowed producers to own and manage fishing boats with fish quotas. For this reason the production chain was integrated and the producers could themselves decide the use of gear and when the fish should be caught. Simultaneously, the Icelandic monopolies were allowed to control and direct the export of salted fish from Iceland. This activity established a monopoly with central actors and technicians who developed a common set of production standards or quality conventions. Thus, Iceland was disposed towards a strong production system when the competition increased during the 1990s.

Development of light salted fillets

The elaboration of the salted fish market increased speed after the introduction of the *Tandur* fish from Iceland. The first fillets had already been on the market as a product using the traditional salted fish technology. In Iceland, new technological and product innovations resulted in a cross-over of borders between who was responsible for the export in Iceland. New players recognized possibilities to introduce new products. Light salted frozen fillets are

among the products which have increased their market share. The production process has been described earlier. In the marketing of this product the focus was on the quality–price relation and on delivery guarantee. In 1990, Iceland exported 7 metric tons of light salted fillets. In 1996 they exported 800 tons of frozen fillets of cod and saith to Spain, and in 2005 their exports exceeded 10.000 tons. In addition, the brine solution has been changed during the last 10 years. The brine has been admixed with *Carnal*, a mixture of phosphates and anti-oxidants which increases the water-bearing of the fish meat further. ‘The injection machines have solution mixed with Carnal. No one wants to talk about it, everyone knows about it and the market seems to be happy with the development. The fish is whiter and even more appealing’ said one of our Icelandic informants with more than 20 years of experience of the salted fish industry.

The new light salted fillet product was not offered to the markets without problems for the Icelandic exporters, who wanted to establish a new sales network also for the atypical salted fish products. In the beginning they met with resistance from the traditional salted fish network in Spain. The Icelandic producers organized a distribution and sales network with around 600 Spanish representatives and distributors. Another factor which stimulated the marketing of light salted frozen fillets was the reorganization in 1996 of one of the earlier Icelandic export monopolies. This monopoly re-established itself as an independent company using a global strategy comprising distribution to Spanish customers of many products collected worldwide. The network of Spanish distributors was then able to offer a wide product-mix to Spanish consumers, all delivered from one Icelandic firm. As a result the Spanish were more strongly linked to the Icelandic suppliers, and a permanent sales company was organized.

The deep structures behind the success of the Icelandic producers

Six interrelated factors should be mentioned in connection with the Icelandic influence in the Spanish market. The first factor refers to *quality, product specification and volume* which concerns the ability to deliver exactly what has been ordered. This condition was based on the quota system introduced in the 1980s, which made it possible to harvest the fish when it was ordered by the market and put forward the best raw products. Combined with a quality system which specified the products according to detailed quality standards, the Icelandic producers were recognized as reliable and competent producers.

The second factor refers directly to the opportunities established by the supply capabilities, reliability and quality aspects. The Icelandic producers were now able to adapt to the market opportunities, which were derived from the political, social and economic frameworks. Such aspects are related to the possibility of satisfying the demands of the consumers, or *the market adaptation* factor.

The third factor is closely related to the second. It refers to the strategy of establishing Icelandic production conventions which are congruent with social trends among the consumers, and focusing on product colour, taste and consistency of the fish meat – *the appearance and the look of the product*. The Icelandic firms and their Spanish partners managed to convince consumers to adopt their viewpoints or conventions on the best appearance and taste of the *bacalao salado*. That was not a bad achievement from a marketing point of view.

The factor which made this change of consumer conventions possible was the establishment of such conventions in the salted fish industry that allowed for the use of new chemicals (for instance the use of phosphates) in the brine. The result was more water in the fish and then a better economic yield. This fourth factor relates to *production-based innovations and technology*.

However, such adaptation capability is a necessary condition for market success, but most probably not sufficient. The different initiatives taken are in reality based on Icelandic production, Icelandic supplies of more than 50 per cent of Spanish imports and the Icelandic ability to satisfy market conventions where Iceland initiatives were fundamental to start with. The supply of salted fish to Spain therefore takes place within a *production controlled production chain* which constitutes the fifth production influencing factor.

As support for the fifth factor are the networks of social relations which have functioned since around 1990. This sixth factor, supporting the Icelandic success and its control of the chain, consists therefore of the coordinated and long-term social strategies developed when SIF occupied a monopoly situation. The main idea was to secure social bonds between the players in both markets – *the network or friendship strategy*. The Spanish invited to Iceland were shown around the country and even invited to meet the Icelandic president. Such social networks most probably would not undermine the producers' control of the production chain or the markets.

Changes in the Spanish salted fish market

Icelandic producers have taken over a substantial part of the Spanish salted fish market, and have also been able to influence technology, institutions and market organization and the consumer conventions. The process shows how domestic conventions have been developed in collaboration with market actors, but also how production conventions have been accepted by the consumer market. In fact, it seems that the customers' demands have not changed the production conventions. Instead, an elegant trade strategy from the Icelandic side has managed to do that.

Even if new products have encroached on the Spanish markets, it is important to keep in mind that traditional salted fish production has also survived in the Spanish markets and adapted to the general social development. The market conventions are not homogenous, in the same way as different regional markets exist. In spite of seemingly having adapted to the new products and product conventions, the customers' demands are also an expression of a salted fish tradition which is still alive. The outcome of the market changes is a variety of markets consisting of products which can be prepared by people with less time for cooking. But without the Spanish salted fish tradition would the new salted fillets and the desalted products have been so easily accepted? Within such a social context might the 'old' traditions of the salted fish still have some influence?

The reactions of the Norwegian production system

Networking might also be a strategy for the Norwegians who wished to meet the challenges from the producers of other countries. To meet difficulties in international trade relations, the recommended strategy of networking in production (Simmie, 2005) could comply with market demands and lead to success in the internationalization process for individual firms (Cornish, 1995; Reiffenstein, 2002; Johansson & Vahlne, 2003). However, networking is not a phenomenon that takes place in a void. If the regulation systems are impeding collaborations and interrelations, networking would most likely also be impeded.

For the Norwegian salt fish industry, the governance institutional structures included sets of legal conventions or prohibitions that may easily have restricted the industry's potential

within different areas. Lindkvist and Sánchez (2008) have discussed the lack of innovative activities among Norwegian salt fish producers as the result of a fragmented production chain in the Norwegian fishing industries. The processing firms were not allowed by law to control the first raw product acquisition by owning their own fishing boats and quotas. A consequence was that the firms were prevented from deciding which gear should be used during capture activities, an extremely important decision because the gillnets used by the coastal fishermen, and the trawls used by the deep sea fishers, strangled and squeezed the fish, respectively. Such methods produced a raw product which normally was less fit for salting than the raw material from longlines. Further, without ownership of boats and quotas, the factories were unable to time their fishing to that part of the year when the demands were highest and the prices best. However, the option of planning the fishing season to follow market demands was less relevant in Norway, which has more migratory species than Iceland, where the fish species are more stationary.

The prohibition established by the national authorities against any chemicals other than ascorbic salts in the salt fish brines, acted as a barrier against changing to more market-oriented production conventions. In this way, the authorities established barriers to innovation, as other additives were used in many of the new products from Norway's competitors. Although some doubts existed among salting technology researchers as to the excellence of the new methods (Thorarinsdottir et al. 2001), it is likely that the Norwegian producers were handicapped when trying to respond to market demands. However, even with such challenging governance systems, the industry's producers could have implemented initiatives that would have compensated for many of their drawbacks. The salt fish processors could have stimulated the fishermen to deliver raw fish of better quality by paying better prices for the best fish. They could also have avoided some of the damage caused in production by establishing quality standards that the independent producers were obliged to follow. Instead, this task was left to the individual producers themselves. Finally, the national salt fish producers could have worked concertedly to remove the production prohibition involving restrictions on the content of the brine injection.

The conclusion that finally emerges is that the different production systems have been unable to co-ordinate their efforts in such a way that the framework they are working within changes (Lindkvist, 2004). Porter's (1990) assumption that challenges create solutions has not proved true for the salt fish industry. According to theories on conservative production environments, a third explanation, referred to as 'path dependency', may be applicable in explaining the

inability of the Norwegian producers to restructure and adapt to market demands (Bathelt and Glückler, 2003). When current actions and convention structures determine actions in the future, path dependency normally arises. Thus, activities may continue in an unchanged manner, contributing to the persistence of traditional production trajectories, whereby production practices or conventions remain as before. Although in theory, path dependency may be either negative or positive, imitation of traditional production practices does little to initiate industry renewal. This has occurred in the Norwegian salt fish industry (Lindkvist and Sanchez, 2008).

With this background the transactions within the Norwegian part of the value chain have been characterized by individualism and mistrust among the principal actors of the Norwegian salted fish industry. It is characteristic that in a study of collaborative relations (Lindkvist 2004) among the five most innovative producers of salted fish in the most influential geographical area of salted fish in Norway, the Ålesund area, scepticism and mistrust among the producers was striking. Also, mistrust of scientists was a dominating phenomenon.

As the result of internal competition, mistrust or lack of formalization of collaborative relations, barriers have been erected against collaborative reactions to market signals. The local networks were not developed to allow the domestic production systems to progress into production systems relying on formal collaboration networks and market impulses from outside.

The consequences seem to be that the production systems in the salt fish industry have been unable to make use of their full potential to direct more innovation processes towards meeting market demands.

On the scent of an imaginary innovation system?

Market success depends on many conditions. In a functioning production system, the market demands have to be built into the domestic production systems and replace domestic conventions if they challenge the market conventions. The premises for such changes assume the establishment of a context where structural conditions within the production environments are not counteracting market impulses as was demonstrated by the Norwegian cases. They showed that isolation, individualism or lack of influence backwards or forwards in the production chain weakens innovative abilities.

As influential individual producers then influence the local production systems of the industry, their attitudes of scepticism towards network collaboration will probably 'contaminate' the entire local production system. The domestic practice of little cooperation will then be followed by little innovation. They will then not be able to comply with market demands (Hayter 1997). Thus, even if knowledge about market governance is recognized, the reason for its non-implementation must be found in the production systems and the power situation that dominates the environments.

The situation changes obviously if problems in one specific market may be evaded because other markets exist for a period of time. As the Norwegian salt fish producers, for instance, can rely on alternative markets other than Spain, such firms may avoid the costs of developing new products and new processes for the Spanish market. Participation in market-oriented processes in Spain may have exposed them to influences from other players in this market (market actors or producers of new products). From a short-term perspective, the individual producer firms may continue to make traditional and profitable adaptations for the alternative markets, but by failing to progress, the industry is also likely to lose control over the alternative markets, as all markets change in the long run.

Lack of integration in the production chain with consumer market actors may also have surprising consequences. Corrective market forces are simply not reaching the producers. If a production culture leading the production system claims to be innovative, without being, then it will not be corrected either. Thus, most Norwegian producers are possibly so poorly integrated into their product markets that a consequence may be that their feeble contacts with these markets do not enable them to follow new socio-economic tendencies. In fact, many producers may have so little contact with the markets that they perhaps believe they are supplying the markets with quality products, even though customer responses indicate the quality of their products is not of the kind in demand. The solution for such an interpretation may be to improve traditional products by improving production processes further.

Another explanation that has been emphasized could be that the fragmentation of the production chain forces the Norwegian producers to focus on the resource supply chain, with the result that market demands are neglected (Lindkvist and Sánchez 2008).

In all circumstances, the market influence is underestimated and the market conventions are disregarded. When the producers still consider themselves innovative, this indicates that they, so to say, live in an imaginary innovation system, focusing on the innovative activities that are relevant for their production systems, but not necessarily for the markets. The innovation

system could be recognized as imaginary when market conventions in the innovation strategies are not followed, either because the resource supply conventions that dominate the relevant domestic conventions are supposed to be sufficient to satisfy market demands of alternative markets, or because they are estimated to be more important than the market conventions.

However, it is important to underline that even if the producers are possibly living within an imaginary innovation system, the tendencies towards change in the outside world will probably continue. The institutional frameworks of the markets change continuously and no self-asserting, independent production system will be able to continue as if nothing is happening.

Therefore, the Norwegian cases referred to demonstrate how structural conditions establish adaptations which might be explained as culturally based. However, since they are structural, changes will not take place without also restructuring the management of the production chain. Moreover, the requirements of social relations and collaboration must be met. Without such changes the actors' efforts will not be focused on meeting external competition through collective and dynamic innovative processes based on internal synergistic relations. One function of local networking, which is to aid '...innovation by building trust relationships between local collaborators' (Simmie 2005, 793), is then not accomplished.

Spanish perceptions

Several studies (Lindkvist 2004, Lindkvist et al. 2008, Lindkvist & Sanchez 2008) have demonstrated that Spanish importers and producers of the finished products are dissatisfied with Norwegian salted fish. It appears from a panel study among Spanish importers in the years between 1998 and 2006 that salted fish from Iceland and the Faroe Islands was considered of better quality than Norwegian products. The Norwegian fish was not white enough, it was too compressed and there were unwanted fractions in the fish meat. This dissatisfaction could partly be linked to the Norwegian regulation regime and the official conventions. The Norwegian control system with reference to the organization of the production chain and the production laws to be followed by the Norwegian food authorities, was in some fields a barrier for single actors to deliver the same products as their competitors. The Spanish market conventions expressing demands from consumers sympathized very little with such points of view (Lode 2008). It is possible that Spanish market conventions may

change. Supermarket concerns in Europe have initiated a campaign for the prohibition of salted fish products with an extra water content of 30 per cent (source). Since additives other than salt is forbidden in Norway, it is possible that civic, public and ecological conventions will have an influence upon the market conventions. It may lead to more attraction being assigned to Norwegian products than to products with phosphate injections and an extra water content of 30 per cent.

Consequences for Norwegian export to Spain

Until now, there is little doubt that the market conventions have decided the Spanish import of salted fish. The consequences for Norway have been very negative. The Norwegian export development appears in Figure 4. In 1991, Norway was a relatively small actor in the Spanish market and supplied 12.1 per cent of Spain's total import. That year Norway sold 423 metric tons of Clip fish and 2.731 tons of wet salted fish. Sales exploded in the years to come and increased to 11.417 tons in 1998, an increase of 318 per cent or 8.686 tons. The sales of Clip fish (dried salted fish) remained relatively small, and were at the same level as volumes in 1991 and 1998. In the case of salted fillet Norwegian export increased quite considerably by volume, from zero to 710 tons. The situation for Norwegian participation in the Spanish markets was, in other words, seemingly strong. However, the situation changed. Although sales of Norwegian Clip fish were insignificant in 1998, the reduction until 2005 was 40 per cent. The small sales of salted fillets in 1998 were reduced by 10 per cent to 2005. In these seven years the decrease in conventional split wet salted fish was 60 per cent.

Structure of Norwegian salt fish exports to Spain, including frozen cod and saith fillets

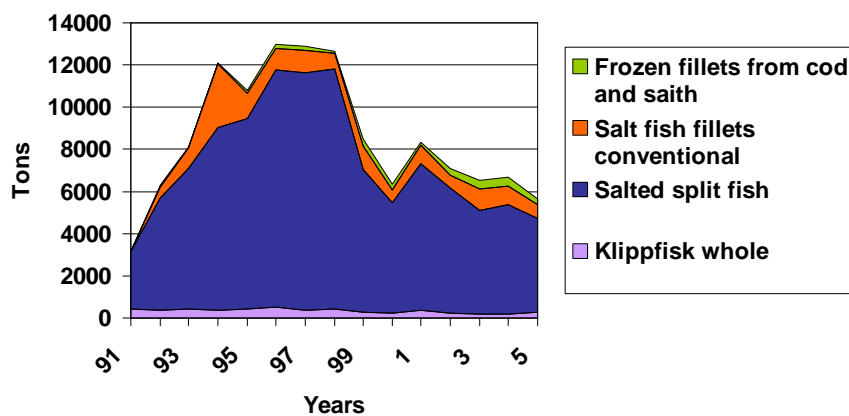


Figure 4: Norwegian export to Spain from 1991 to 2005

How to change the situation?

This paper has discussed the validity of the argument based on the market conventions of the food production chain involving the Spanish market and which stated that these conventions were of little influence on the industrial production of salted fish in Norway. If the industry was characterized by local production conventions, networks without collaboration on innovations and where governance forces (from the production chain and relevant laws) obstructed the market influence, then the processing industries in Norway might experience future loss even of markets in which they still operated. The paper has referred to lack of collaboration between Norwegian actors and some lack of trust in the research institutions by the production companies. The discussion then supported the assumption that the lack of attention on the Spanish market conventions most probably may explain the reduction of Norwegian sales of salted fish to Spain.

This situation has been the background to the projects and activities (Figure 5) promoted in the project 'The Spanish salted fish market and opportunities for the Norwegians'.

The focus on the value chain and the presentation of technology, institutions with governance systems and the territory (either as market or as production regions) as the moulding forces of the relevant conventions, have generated a set of sub-projects aimed at focusing on Norwegian initiatives in Spain.

The aim of the salted fish project is to produce detailed knowledge about the Spanish markets as a basis for decisions to be taken by Norwegian producers. The content of the market conventions and the demands on product properties for products to be launched in Spain are especially of the utmost importance. This is intended to materialize as testing of new products and new methods for specific markets. Combined with methods that require networks among consumers and producers, the integration of actors in the production chain is intended. The knowledge gained will be disseminated through workshops and conferences, publishing and, finally, through the establishment of the Norwegian salt fish school in Spain during the project period.

Researchers at the University of Bergen and Tromsø (in collaboration with other Spanish, Norwegian and Chinese universities and research groups) in Norway have developed a long-term research programme on market restructuring in the Spanish salted fish market. The project 'The Spanish salted fish market and opportunities for the Norwegians' takes the restructuring processes of this market as its point of departure. From 2008, for 3½ years the project will focus on the adaptation among actors in the Norwegian–Spanish production chain to the market demands of Spanish consumers and will, from a scientific basis, investigate the premises for successful re-establishment of Norwegian producers and exporters in this market. The project examines how cultural, technological and social factors contribute to the restructuring of the Spanish salted fish market and the connected production system. Through analysis of conventions in the Norwegian production environments and its agreement or lack of such agreement with the consumers' conventions and opinions of the products in question, the apparently negative trends for Norwegian exporters in this market will be scrutinized.

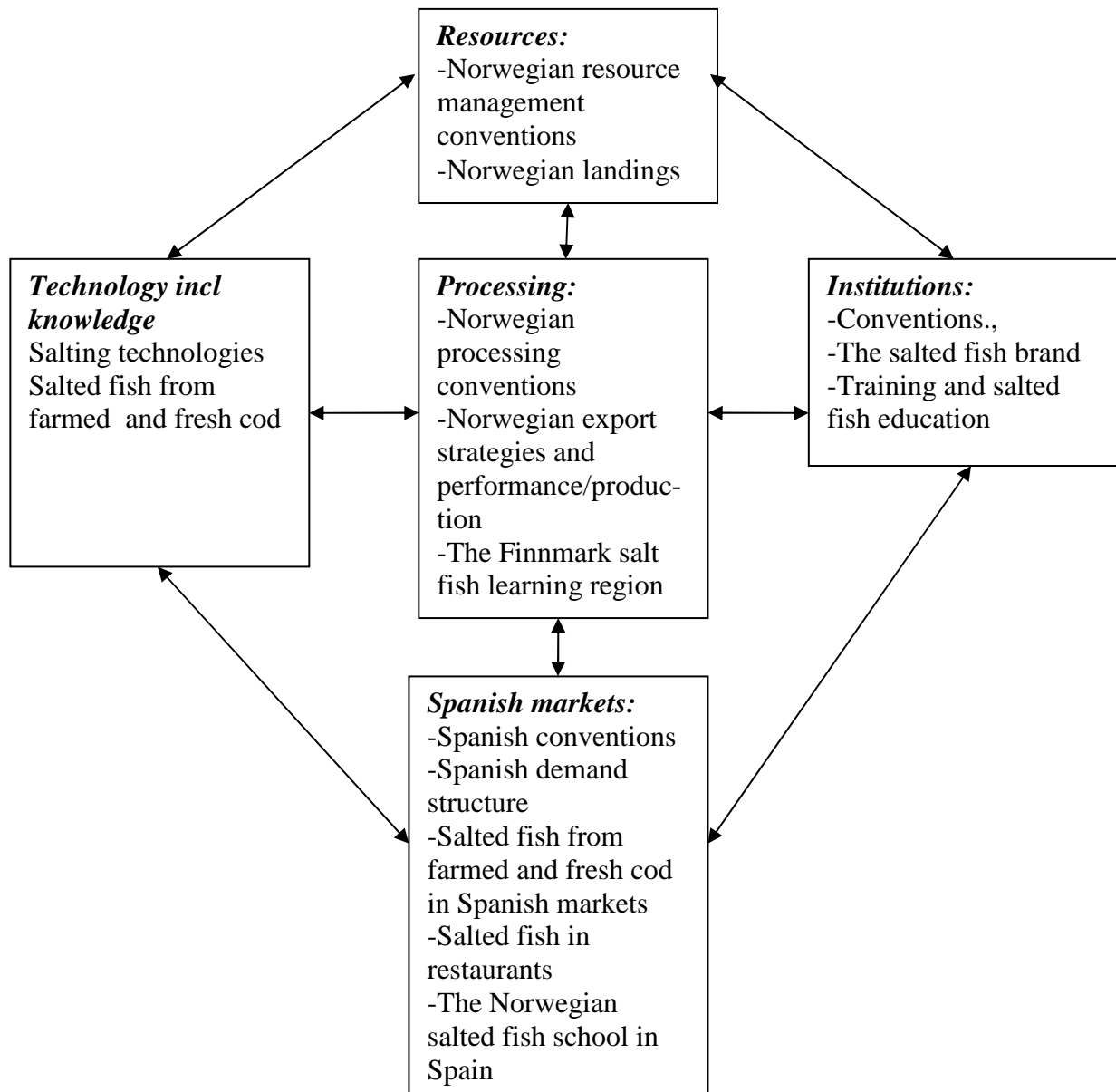


Figure 5: Sub-projects and activities assigned to the theoretical model

In the article ‘*Conventions and Innovation: A comparison of two localised Natural Resource-based Industries*’ Lindkvist and Sánchez (2008) discuss the development of new conventions, among others, in the Norwegian salted fish industry. The question asked is about the need for nature resource-based industries to make more use of external research resources. For this reason the focus of the project is also on networking among Norwegian salted fish producers and their concentration on one important market. In addition, the need for efficiency of

production and quality improvements through initiatives such as product and process innovations is paramount.

In general, the focus on conventions and adaptation of market conventions by the other units of the production chain is a challenging topic if it is to be followed by some kind of action research and involvement of creative and innovative strategies for product development and teaching institutions. The methodology of the project is the focus of the next chapter.

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