Panel composition

Lay panel

- John Havn Eriksen, 59, dental specialist, Copenhagen
- Ingrid Hind, 68, retired immigrant teacher, Copenhagen
- Peter Holst, 52, primary school teacher and school librarian, Odense
- Tove Knudsen Jensen, 25, student nutritionist and dietician, Sorø
- Boe Jørgensen, 66, retired toolmaker and export manager, Ålsgårde
- Jeppe Bøgh Olsen, 28, principal, Stocksund
- Elo Schiøtt, 48, shopkeeper, Gudhjem
- Vibeke Skou, 53, nurse, Frederikshavn

Panel of fishermen

- Christian Bollerup, 60, Hvide Sande. Net fisherman with five-tonne sea-going yawl. Consumer fish.
- Jens Frederiksen, 48, Hirtshals. Fishing partner in seine/trawl boats. Herring, mackerel, horse mackerel, capelin and pilchard.
- Peter Frost, 49, Copenhagen. Pound net fisherman with own business. 14 net stations in Køge Bay. Three boats approx. 30 foot and two auxiliary vessels. Consumer fish.
- Leif Hansen, 39, Grenå. Ring net fisherman with 20 GRT vessel. Consumer fish.
- Flemming Ebey Kristensen, 50, Thyborøn. 530 GRT vessel for industry fish. Half-share in two 1800 hp and 1200 hp beam trawlers for consumer fish.
- Finn Røge Nielsen, 45, Hanstholm. Trawlerman with 54 GRT wooden cutter. Lobsters.
- Lars Birger Nielsen, 43, Rude. Net and pound net fisherman with own business. 9-28 ft. vessels. Consumer fish from inshore waters in south-east Denmark, supplemented by marine rearing of rainbow trout.
- Flemming Pedersen, 40, Esbjerg. Trawlerman with 447 GRT cutter. Consumer and industry fish.
- Henning Thøgersen, 42, Lemvig. Net fisherman with 38 ft. vessel. Consumer fish from inshore waters.
- Brian Werner Thomsen, 31, Aalborg. Net fisherman with 32 ft. yawl. Consumer fish from inshore waters.

Panel of experts

- Stig Mellergaard, research scientist and veterinarian, Danish Institute of Fisheries (Department of Marine and Coastal Ecology).
- Ole Norden Andersen, biologist, National Forest and Nature Agency (Nature Management).
- Eskild Kirkegaard, head of research, Danish Institute of Fisheries (Department of Marine Fishing).
- Peder Agger, professor of environmental planning, Roskilde University Centre (Institute for Environment, Technology and Society. Chairman of Danish Ecology Council.

- Henning Mørk Jørgensen, biologist and environmental worker, Danish Society for Nature Preservation.
- Mogens Schou, head of development, Ministry of Agriculture and Fisheries.
- Jesper Raakjær Nielsen, M.Sc., Ph.D., Institute of Fisheries Management and Coastal Communities Development.
- Bent Bro, consultant in fishery economics , Thyborøn
- Thomas Moth-Poulsen, senior consultant and biologist, Danish Institute for Fishery Technology and Aquaculture (DIFTA).
- Poul Holm, curator, Fishing and Maritime Museum. Research professor, Institute of History, University of Århus.
- Bent Rulle, chairman, Danish Fishermen's Association.
- Kurt Bertelsen Christensen, chairman, Danish Society for Living Sea.
- Peder Hyldtoft, chairman, Association of Danish Fish Processing Industries and Exporters.
- Axel Ljungquist, food consultant and veterinarian, Danish Consumer Council.
- H. Bak Andersen, agriculture and fisheries consultant for Switzerland, Germany and Italy.

FINAL DOCUMENT OF THE LAY PANEL

Introduction

We are eight "ordinary" Danes who during the past weeks have discussed various aspects of the fishing industry which we, as consumers and citizens, consider important for the industry's future.

We were confronted with studies, statements and ideas from fishermen and experts, and the questions we wished to be debated are described in the following pages together with our appropriate recommendations.

A large part of the debate revolved around sustainable fishing, and we would therefore like to begin by presenting our assessment of what sustainable fishing actually is:

Sustainable development is defined in the Brundtland report as:

"Development which fulfils existing needs without jeopardising the possibilities for future generations to fulfil their needs".

We therefore define sustainable fishing as the possibilities for future generations to utilise the resources of the sea to the same extent as today.

This has consequences for the way in which we fish and for how much we fish.

With regard to the former, it is important that fishing be performed with maximum sensitivity

to the marine environment. In other words, we should develop selective and sensitive fishing equipment. We should develop a less energy-intensive fishing industry, and such resources as are recovered from the sea should be utilised.

As regards the scale of fishing, it is essential that fish stocks - in terms of numbers and diversity of species - should not be endangered. This should be assured by the development of increasingly more accurate monitoring of marine conditions.

Furthermore, it is important that not only fishermen but that all of us should take responsibility for a sound, future marine environment. Dumping and oil pollution from installations and ships should be halted.

We have consulted experts about fishing methods, the scale of fishing, and present technical and policy control. We have also sought to create an overview of future possibilities with regard both to fishing methods and forms of control.

Against this background we should like to commence this report with the following statements:

1. The quota system as we know it today does not function satisfactorily since it leads to irregular supplies to consumers and industry and renders long-term planning for the fishing sector impossible. Consideration should instead be given to the introduction of a system in which a given number of vessels is allocated a "ration" of catch devices/sea days; this system would operate by leave the fisherman free to choose between many sea days with few catch devices, or few sea days with many catch devices, based on certain given key figures.

2. The discarding of catch which can result from the present minimum price system or the quota system is unacceptable. The same applies to pull-out, which is purely a consequence of the minimum price system.

Both practices are instrumental in jeopardising the credibility of Danish fishermen in the population at large.

3. Fish is a nutritionally correct and tasty product. Viewed in the light of the recent advertising campaign, it would be desirable for the fishing industry to further develop and market Danish fish to a still wider circle of consumers.

Definitions of terms used

Discarding: Dumping of fish caught.

Spoil disposal: Dumping of seabed material recovered from dredging operations - also outside ports and harbours. (Around 100 million tonnes of such material are dumped in the North Sea every year).

PO price: The price which fishermen obtain for fish "pulled out" of the market for not reaching a specific minimum price, after which the fish are used for purposes other than direct consumption.

Pull-out: Fish used for purposes other than consumption after failing to reach minimum price.

Question 1.
What impact does a high-tech society have on the marine environment - and what measures can be taken to ensure a sound marine environment and sustainable fish stocks?

a) How do offshore activities, spoil disposal, wind turbines, dumping, oil pollution, high-speed ferries, etc. affect the marine environment?

b) Is there a need to reduce emissions of nitrates, phosphates and other chemicals?

c) Is there reason to fear environmentally harmful substances in the fish we eat?

The great majority of offshore activities, etc. affect the marine environment in a negative direction, but to varying extent and duration. In addition to the activities stated in the question, the experts mentioned sea farms, raw materials extraction, and bridges. Some of these activities have not been examined in depth and the consequences (of, for example, construction and high-speed ferries) are therefore difficult to evaluate.

Apart from dredging disposal, dumping no longer takes place in Danish waters. Oil pollution from installations and shipping is a serious problem which continuous efforts should be made to limit.

The experts were agreed on the need for further reduction in the emission of nitrates. The target of the current Aquatic Environment Plan has not been met.

Environmentally harmful substances are a general problem in connection with foodstuffs. Such substances have also been found in fish and the situation should be taken seriously. The experts stressed, however, that fish is still a good and healthy food.

The lay panel's assessments and recommendations

A high-tech society must take responsibility for protecting the marine environment as it is a fact that many harmful substances sooner or later end up in the sea.

The Ministry of Environment and Energy should take greater action against oil pollution from installations and ships.

The studies currently under way into the impact of high-speed ferries on the marine environment are important and the findings should be published as soon as possible.

The Ministry of Environment and Energy should address the inadequacy of the Aquatic Environment Plan as soon as possible and find new initiatives for limiting nitrogen emissions.

Steps should also be taken against emissions of hazardous chemicals and environmentally harmful substances so that fish can continue to be consumed with confidence also in the future.

Question 2.
How do different forms of fisheries activity affect the marine environment?

a) How do marine rearing activities/sea farms affect the marine environment?

b) What impact does fishing have on seal, cormorant and porpoise populations - and vice versa?

c) Can marine resources and the marine balance be restored/maintained with the present restrictions and prohibitions against fishing in certain areas, or is there a need for fresh initiatives?

The discussion by the panel of experts of the impact of different forms of fisheries activity on the marine environment clearly reflected a lack of studies. The problems mentioned mainly related to fishing equipment dragged over the sea bed. However, the experts were unable to agree on the character and scale of these problems.

The experts were unanimous that marine rearing activities and sea farms can have various harmful consequences for the marine environment. This is the case particularly in the vicinity of such establishments.

Marine rearing activities and sea farms can lead to changes in the ecological system. Stocking

activities and the escape of fish from sea farms pose a potential long-term threat to wild fish stocks through genetic changes, while at the same time fish diseases and parasites can be spread to wild fish over large areas. It was also reported that use of antibiotics in sea farms can lead to development of resistant strains of bacteria.

Bycatch of seals, cormorants and porpoises also takes place. However, the experts were unanimous that the population of cormorants and seals is not endangered as a result. The size of the bycatch problem, where porpoises in particular are concerned, is unclear. Research into new types of catch equipment capable of minimising the problem is currently under way.

The impact of cormorants on fish stocks was discussed, but the panel found no consensus among the experts on the scale of this impact.

The experts were agreed that marine balance can only be restored/maintained if fresh initiatives are created. Such initiatives were discussed and can roughly be grouped under four headings:

- Policy initiatives (in relation to the EU)

- Organisational initiatives (in relation to the Danish fishing industry)

- Economic initiatives (reduced pressure on fishermen)

- Technological initiatives (selective and sensitive catch equipment)

These initiatives are dealt with separately in Questions 3 and 6 where more detailed information can be obtained.

The lay panel's assessments and recommendations

The problem of potential genetic changes in fish as a result of marine rearing activities is so serious that we recommend a halt to the establishment of further sea farms until their consequences have been fully elucidated. The panel also considers that use of antibiotics in sea farms should continue to be controlled, and that any use of antibiotics for growth promotion should continue to be prohibited.

In some places the number of cormorants represents a major problem for fishermen. Research should continue into modified equipment handling and design in order to reduce this problem. Steps should also be taken to ensure that the cormorant population does not increase further.

We consider it important that continued research should be carried out into reducing bycatch of seals and porpoises.

Question 3.
How should fisheries administration and control be organised in future so as to ensure optimum marine management and management of fish resources?

a) What can be done to ensure that greater importance is given to the experience of fishermen in the framing of Danish and European fisheries policy?

- Is there a need for a restructuring of Denmark's fishing industry organisations with a view to obtaining greater influence in the EU (including use of lobbyism)?

b) How reliable is the biological advice?

- How important is the lack of reliable infornation on discarding?

- How can fishermen's experience and catch data be integrated into a faster update of stock estimates in the service of biological advice and the setting of quotas?

c) What restrictions in the form of closed zones, closed seasons, and technology might encourage the development of sustainable fishing?

Experts and laymen were agreed on the need for future new thinking and a strengthening of both basic and applied research into selective and sensitive search and catch equipment.

The problem of the reliability of biological advice is a very important one to which careful consideration should be given in the planning of future fisheries policy. At present there is a one or two-year time lag in integrating the catch figures reported by fishermen into the advisory work on which quota allocation is based. This delay is clearly unsatisfactory as the quota thereby becomes outdated and meaningless. It is very doubtful whether a reasonable time horizon (from catch figures to quota allocation) can be achieved with the present system.

Closed zones were mentioned as a means of providing increased protection for fry rather than as a general protection measure.

A desire was expressed among the experts for new thinking with regard to the organisation of fishing both domestically (EU) and internationally. Collaboration between the fishing industry's organisation and the export sector should be strengthened. Several experts mentioned the possibility of working through unofficial channels as something which should

be explored with a view to influencing the future agenda.

We strongly support the endeavours to retain the existing, sensitive catch devices and to develop new, sensitive, selective and energy-saving equipment. We believe that additional research funding should be allocated to this area.

We are in agreement with the experts that marine rearing with a view to stocking/restocking is not to be recommended.

Question 5.
Can a Danish fishing industry based on the principle of sustainability be/become viable in the future?

a) Can the width of the Danish fishing fleet be retained within a viable and environmentally sustainable fishing regime?

b) How viable are the different forms of fishing today?

c) What economic compensation should be awarded to fishermen affected by sharp cutbacks?

d) What socio-economic action should be taken when a fishing industry is hit by cutbacks?

e) What are the consequences of an end to fishing in small communities?
- for, say:
- employment
- tourism
- local supplies of fresh fish
- cultural heritage

f) How can the use of public funds for repeated debt rescheduling, refinancing, etc. of non-viable fishing vessels be avoided?

The view was expressed that the width and flexibility of the Danish fishing fleet would also exist in the future as no single type of vessel can meet the requirements of Denmark's many different types of fishing.

The current viability of the individual vessels is hard to assess as no nationwide statistics exist. However, there are indications that viability has improved as a result of new refinancing

arrangements and fleet cutbacks.

The cost of fuel was reported by the experts to be such a burden that even minor price increases (eg. fuel tax rises) would have perceptible consequences for the viability of the most fuel-intensive vessels.

With regard to the question of economic compensation the experts discussed whether a lay-up scheme rather than the scrapping of boats could be an alternative. However, no consensus was reached on a solution.

When a local community experiences fishing industry cutbacks as a result of the scrapping or forced sale of fishing boats, the result is often drastic socio-economic changes in the local environment.

In this connection discussion took place on the possibilities which exist for channelling fishermen into other occupations.

The lay panel's assessments and recommendations
It is important to maintain the width of the Danish fishing industry, provided this is appropriate from an economic and environmental viewpoint.

The panel is uncertain with regard to the main question as many prerequisites must be met if the fishing industry is to be both viable and sustainable in the future. Two elements which might be embodied in the development of a viable and sustainable fishing industry are quality and the cultivation of new markets to secure better prices. The panel believes that, as with sustainable energy, project grants could be given for the development of a sustainable fishing industry.

Where fishing control is concerned, fishermen should be given opportunity to plan on longer time scales so that the drastic cutbacks in the fishing industry do not occur.

It is essential that Danish local and regional authorities recognise the vulnerable structure of the fishing industry and examine future ways of safeguarding fishing and companion activities in small communities.

Question 6.
How can we ensure a continuation and renewal of Danish fishing?

a) Can the existing financing facilities ensure a much-needed fleet renewal and help effect a

necessary generational change?

b) What would be the consequences of unrestricted fishing for small boats?

c) What can be done to ensure a varied fishing industry in terms of types of vessels, catch methods and geographical distribution?

d) Is there a need for more far-reaching training of fishermen?

Virtually all the experts involved in fishery economics were agreed that the existing financing facilities render it very difficult for fishermen to achieve fleet renewal and generational change. At present fishermen labour under an excessive burden of debt, with the attendant risks of overfishing, disregard of safety regulations, and so on.

Those of the experts who addressed the question of the introduction of unrestricted fishing for small boats expressed skepticism about the possibility, partly due to the risk of overfishing.

All the experts were agreed on the importance, not only of good training but also of an ongoing review of the quality and composition of the training, as fishing, like all other occupations, is continuously changing.

The lay panel's assessments and recommendations

The panel considers it important that the present form of vessel ownership should as far as possible be retained. It is the view of the panel that the element of personal commitment is the best way to ensure responsibility for conditions on board and for the development of the fishing industry. To support the present form of ownership, work should take place at policy level to improve financing facilities.

To assist generational change, greater provision should be made for forms of joint ownership with security other than joint and several liability. Finally, the panel recommends raising the limit on loan capital for a joint-owned vessel to a maximum of 49%.

As regards the possibility of introducing easier fishing access for small boats the panel is convinced that control systems can be established which will avoid the problem of overfishing. Among other things, the panel considers that easing restrictions on the right to fish for small boats would have the advantage of maintaining fishing in, or spreading it to, small ports. This is important for local supplies of fresh fish, employment, and for the existence of living ports which are not just marinas. In their planning, local authorities should include provision for the local fishing industry and the local fishing environment.

In order to provide greater knowledge and enhance practical skills - and possibly with a view to attracting new young people into the industry - the panel considers it important that a formal, targeted course of training should be established for young fishermen on a par with that which exists in other sectors. Part of this training should be compulsory.

The panel also concurs with the statement of the experts that the training for fishermen should be kept up to date by an ongoing review of course quality and composition. Finally, good opportunities for supplementary training should exist for all fishermen.

Question 7.
What advantages and disadvantages exist in bringing ashore and utilising all fish caught - what is possible in practice?

a) What can be done to ensure that fish which do not reach minimum price are still used for consumption?

b) What interaction is there between the control systems and the pull-out of consumption fish?

c) Does a problem exist with "grey fish" and "black fish" in commercial and other fishing?
If so:
- Does this problem cause market distortion?
- How can the market be made more transparent?

"Grey fish" are fish which are sold under another name. For example, cod, which is sold as "light coal-fish".

"Black fish" are fish which are sold, for example, direct from the quayside and can thus bypass the quota, tax and VAT systems.

According to the experts, at present a substantial portion of the catch landed never reaches shore. Part is discarded as uneconomic and part is discarded because bringing it ashore is illegal. For the North Sea the volume of fish discarded is estimated at around half a million tones a year.

The experts could not suggest a specific solution to this problem.

The experts gave no answer to the question of what steps can be taken to ensure that fish not reaching minimum price are still used for consumption.

One expert claimed that there was no real answer to Question 7a) as a policy decision is needed to replace the existing minimum price systems with schemes allowing or compelling a free marketing regime which will ensure a sensible use of marine resources.

The experts pointed out that the present control system limits the freedom of the individual fisherman to effectively plan his fishing, something which can result in discarding and pull-out on an unacceptable scale.

The experts drew attention to the fact that trade in "grey fish" is illegal and thus falls within the jurisdiction of the police.

The sale of unprocessed fish direct from boat to consumer is lawful and exempt from VAT if turnover does not exceed DKK 20,000 a year.

The lay panel's assessments and recommendations

The panel considers the practice of discarding to be ethically unacceptable on the present scale. All fish caught which cannot be put back alive should be brought ashore and utilised.

As consumers we cannot accept the fact that good, edible fish which do not reach minimum price should be dyed unfit for human consumption. We are aware that this is a consequence of the PO scheme, and we therefore recommend that this scheme be changed.

Discarding, together with the pull-out which is a result of the present minimum price system, are instrumental in jeopardising the credibility of the Danish fishing industry in the eyes of the population at large.

The panel is of the opinion that the control system should be designed to give fishermen maximum possible freedom to plan their work.

Question 8.

What market developments in fresh fish and processed/frozen fish produce can be expected in the years ahead?

a) How can the fishing industry influence these developments?

b) Can the number of expensive intermediaries between fisherman and consumer be reduced?

c) What can be done to ensure that a varied selection of high-quality fresh fish reaches the consumer quickly and cheaply?

d) What can be done to motivate the fisherman and everyone involved in the distribution structure to improve fish handling?

e) How can Danish fish be date and quality labelled?

According to the experts the market in the years ahead will be characterised by sales of prepacked fresh or deep-frozen fish and convenience products, a growing number of which will originate outside Denmark.

The experts also predict that Danish consumers will be increasingly interested in buying high-quality fresh fish. This was confirmed by the fishing industry's recent advertising campaign which has to date increased sales by around 15%.

There was disagreement among the experts as to whether there were too many expensive intermediaries between fisherman and consumer. The experts were unanimous that improved provision should be established to enable more direct supply/sale from fisherman to fishmonger.

It was mentioned that consumers would in the future show increasing interest in buying fish raised in conditions equivalent to those for the ecological products gaining ground in the retail trade.

Price is a crucial motivational factor for the fisherman where improved fish handling is concerned. Reference was made to trials taking place in Thyborøn with at-sea packaging and date marking with bar codes to optimise quality. Reportedly, these trials also appear to be a success in economic terms.

The lay panel's assessments and recommendations

The fishing industry has increased sales with the recent advertising campaign, and it is vital that this success be followed up. Among other things, work should continue on providing more supermarkets with sales of fresh fish. We are convinced that high-quality fish, which is handled and sold by qualified personnel, can realise higher prices than is currently the case.

Appropriate date labelling and information on the area and method of catch should be made obligatory.

We believe that a large part of the population is unaware of how to prepare fresh fish. We

recommend that the trade should also offer the consumer high-quality convenience products.

Question 9.
Where does the image of the small, blue cutter and fishing as a part of Danish cultural heritage figure in our discussions of tomorrow's fishing industry?

This was the only question to which all the experts were asked to make reply. The answers were very different, but the following short definition by Poul Holm of cultural heritage as "part of the spiritual and material inheritance which we carry with us into the future", helped steer us in the right direction.

In a cultural heritage context the image of the small, blue fishing cutter is still an important part of the Danish identity and general perception of the fishing industry. It is a fact, however, that this vessel with its hot-bulb engine is slowly but surely on its way out of the industry, because modern fishing demands new techniques.

A strong tradition of independent boat ownership in Danish fishing, and close contact between fishermen and craftsmen ashore, create an active foundation for the fishing industry of today, and can - if we will - also do the same tomorrow.

The lay panel's assessments and recommendations
The fishing industry of the future should be based on important traditions:
- The responsibility and freedom of the fisherman
- The importance of the local community

We should seek to give small boats genuine fishing opportunities. They should exist by virtue of their usefulness. Not simply as museum pieces and tourist attractions.

Local and regional authorities should work actively for the retention of those port and harbour environments which still exist.

FINAL DOCUMENT OF THE PANEL OF FISHERMEN
Question 1.
What impact does a high-tech society have on the marine environment - and what measures can be taken to ensure a sound marine environment and sustainable fish stocks?

a) How do offshore activities, spoil disposal, wind turbines, dumping, oil pollution, high-speed ferries, etc. affect the marine environment?

b) Is there a need to reduce emissions of nitrates, phosphates and other chemicals?

c) Is there reason to fear environmentally harmful substances in the fish we eat?

Although information on the significance of raw materials extraction for purposes such as bridge building and coastal lining has been gathered within the past 10 to 15 years, the panel considers that knowledge and research are still required in this area. Attention is drawn to the fact that the volume of such material amounts to many millions of cubic metres and that extraction is performed using very powerful equipment. The fact that no public authority has yet devoted sufficient interest to the consequences of raw materials extraction on the marine environment seems to be quite out of proportion with the regulations and controls which govern even minor aspects of the fishing industry.

As reefs and shallows are maturing grounds for fry, the panel would like to see the exclusion of installations which impinge upon the function of these areas. Wind turbines are an example of such installations.

The panel is concerned at the impact on the marine environment of offshore activities, including seismic surveys. These activities are often considerable in scale; in the North Sea, oil installations alone cover an area twice the size of the island of Fyn. Another worrying activity is suction dredging, which leaves behind permanent holes in the sea bed.

The panel believes that increased resources should be devoted at policy and organisational level to monitoring the damaging effect of offshore activities on the marine environment. In all cases where marine installations are established, exhaustive studies should be made of the impact on fish stocks and the effect on fishing. In those cases where the ability of the fisherman to carry out his work is curtailed, compensation should be granted.

The panel believes that marine emissions of nitrates, phosphates and chemicals should as a general principle be minimised. And it is with considerable concern that, 10 years after the introduction of the Aquatic Environment Plan, we find that the target for nitrate emissions in particular is still very far from being met.

The panel notes with satisfaction that environmentally harmful substances in edible fish from Danish waters have since the start of the 1980s been at a level which, according to the latest studies of the National Food Agency, in no way gives cause for concern.

Technological development is leading to a steady increase in new chemical compounds, which to some extent also end in the sea as waste products. The panel considers that there is a need for this development to be closely monitored and that emission to the sea of environmentally

harmful substances should cease completely.

Question 2.
How do different forms of fisheries activity affect the marine environment?

a) How do marine rearing activities/sea farms affect the marine environment?

b) What impact does fishing have on seal, cormorant and porpoise populations - and vice versa?

c) Can marine resources and the marine balance be restored/maintained with the present restrictions and prohibitions against fishing in certain areas, or is there a need for fresh initiatives?

There is pronounced uncertainty among the experts as to what effects different forms of fishery activities have on the marine environment.

The panel of fishermen believes that no general criticism can be levelled against individual forms of fishery activity as most fishermen carry on their business in a responsible manner.

In the current debate, industrial fishing and beam trawls are the methods under heaviest attack. The biologists, however, regard industrial fishing is sustainable. The attack launched last spring on sand eel fishing off the British coast is therefore all the more surprising. The panel is aware, however, that bycatch problems may be associated with certain types of industrial fishing, such as sprat fishing. On the other hand, discarding rarely occurs in industrial fishing as the whole of the catch is utilised.

Beam trawls and other dragging devices are criticised for causing damage to the sea bed and excessive bycatch, which is discarded. As regards the drag marks, the only discernible effects are their visible presence. No studies exist documenting any long-term effects of these marks on the marine environment. The criticism of discarding should primarily be levelled at other EU fishermen who use heavy chain mats and substantially smaller meshes than Danish beam trawlers.

It is the experience of the panel that, foreign beam trawlers in particular, largely show no respect for other fishing methods, such as net and ring net fishing, the result being that these methods are often forced out of the fishing grounds.

The bycatch of seal by net fishermen is without significance as the size of the seal population is not threatened by fishing. No documentation exists on the significance of bycatch for the

porpoise population. Where cormorants are concerned, the panel considers that the steadily growing cormorant population is now already far too large. A single cormorant consumes 400 g of fish daily, which at the present level of the Danish cormorant population corresponds to 15,000 tonnes a year. This is equivalent to three times the permitted annual catch of cod in the Kattegat. The cormorant is a direct threat to the continued existence of pound net fishing, as the bird treats the net as a "larder" and also damages any fish it cannot eat itself.

The panel therefore recommends a reduction of the cormorant population.

We believe that sea farms, mussel rearing and stocking with fry can lead to changes in the ecological system. The greatest impact on the marine environment, which comes from marine rearing activities, is emission of nutrient salts, but in relation to the total release of nutrient salts into the marine environment the emission from Danish sea farms is negligible.

Development of antibiotic-resistant strains of bacteria may constitute a problem in conjunction with marine rearing activities, but to date no problems of this nature have been encountered with Danish sea farms.

The escape of fish from rearing establishments and general stocking activities may represent a long-term genetic threat to wild populations. Genetic threat has been the subject of particular discussion in Norway, where escaped salmon from sea farms differ genetically from the wild population. Salmon stocks in the Baltic are today dominated by fish released artificially. The panel has been unable to determine whether stocks of salmon in the Baltic are thus afflicted by a genetic problem. As the genetic consequences of stocking activity are not sufficiently well defined, the panel urges caution with this practice.

It is difficult to assess the effect of closed zones and closed seasons as the existing regulations and associated exemptions seem to result in an unintended fishing activity. An example of this is "rødspættekassen", a plaice fishing area along the west coast of Jutland where, by technical manipulation, vessels with a maximum permitted engine power can achieve a relatively higher pulling power, which means that they can operate in this area anyway.

As regards the balance of resources in the sea, according to the biologists a number of species are currently either at maximum exploitation or subject to over-exploitation. The primary reason is said to be excessive fishing activity. In the assessment of ICES a general reduction is required within several types of fishing.

The panel therefore finds it incomprehensible that several EU countries have not reduced their fishing fleets in line with the agreed EU target. At 1 January 1996, for example, gross register tonnage in the Netherlands was 68% above the level set by the EU agreement, and the British figure was 16% above this level. Instead of a reduction, substantial new building has

taken place in these countries. The panel believes that some form of sanction should exist for those countries which fail to implement the capacity reductions which they themselves have been party to agreeing.

Question 3.
How should fisheries administration and control be organised in future so as to ensure optimum marine management and management of fish resources?

a) What can be done to ensure that greater importance is given to the experience of fishermen in the framing of Danish and European fisheries policy?

- Is there a need for a restructuring of Denmark's fishing industry organisations with a view to obtaining greater influence in the EU (including use of lobbyism)?

b) How reliable is the biological advice?

- How important is the lack of reliable information on discarding?
- How can fishermen's experience and catch data be integrated into a faster update of stock estimates in the service of biological advice and the setting of quotas?

c) What restrictions in the form of closed zones, closed seasons, and technology might encourage the development of sustainable fishing?

The basic problem today as regards the biological advice is that it is not up-to-date. Although catch data are reported by fishermen not later than 24 hours after sale, they can take up to 18 months to process. The panel would therefore like to see faster administration, such as could be achieved with increased use of information technology for the processing of data received.

The lack of reliable data for discarding is a problem for the provision of biological advice.

The biologists do not consider the volume of catch discarded to be a problem in terms of the marine eco-system as this volume re-enters the food chain.

However, the panel believes that continued efforts should be made to reduce discarding, partly to improve the basis for biological advice and partly to safeguard future stocks.

The present practice of extensive self-administration of national quotas is a step in the right direction, but the panel believes that work should continue to find new control methods which as far as possible satisfy the needs of the individual fisherman for a stable income. The panel thus considers it important that there should be an ongoing evaluation and debate as to

the most appropriate control methods for the various types of fishery.

The panel does not consider the existing Fisheries Board to be effective. Accordingly, it is recommended that a strong effort be made to increase cooperation within the fisheries sector. The panel feels that improved cooperation between the fishing industry organisations would benefit both the individual fisherman and the sector as a whole. A strong and well organised fisheries sector, with perhaps a "Fisheries House" as a meeting point for the various organisations, would be better placed to influence opinion in, say, an EU context and thus ensure that the Danish fishing industry is better prepared with regard to policy decisions.

No overview currently exists of which restrictions - in the form of closed zones, closed seasons and technology - might promote the development of a sustainable fishing industry. A study of the effectiveness of the existing restrictions would therefore be desirable.

Question 4.
What demands should be made on fishery technology to ensure sustainable fishing in the future?

a) What technological research is under way with a view to developing sensitive and sustainable fishing?

In the area of:
- catch equipment
- fish behaviour
- bird and mammal behaviour

b) Can introduction of new technology replace the quota system?

c) Can technological development in marine rearing activities and stocking be used to raise stock levels and/or combine fishing and rearing?

The panel has formed the impression that present Danish research in the area of fishery technology is not effective. This work, which is split between a number of research bodies, such as the Danish Institute of Fisheries (DFU) and the Danish Institute for Fishery Technology and Aquaculture (DIFTA), takes place sporadically and appears to be poorly coordinated.

In the view of the panel, research into fishing methods and equipment technology is a community task. The panel therefore recommends that sufficient government funds be allocated to ensure targeted, results-oriented research. In this regard, consideration should be

given as to whether an amalgamation of, for example, DFU and DIFTA, might be a step in this direction. The panel considers it important that research which is based on specific problems within the industry should be strengthened.

Research, especially into new technology, can reportedly make fishing more selective. Research into catch equipment, combined with a better appreciation of marine life and the behaviour of fish in particular, could help reduce a number of unwanted effects of fishing.

Use of selective equipment has reduced problems, particularly in respect of bycatch, in certain areas of industrial fishing. In sand-eel fishing, for example, fishermen and their seine makers have together developed trawls which have eliminated the bycatch problem. Selective equipment, which separates out unwanted species, can also be used for catching certain types of consumer fish. Where fishing for mixed species is concerned, selective methods are, in the view of the panel, not always suitable as the fisherman's catch will thereby be reduced.

The are common European regulations on mesh size. The same applies to the minimum size of fish. In Danish legislation, however, a larger minimum size is specified for cod and certain other fish. The panel thus recommends that the Danish standard be adopted by the EU.

The panel holds the view that introduction of new technology alone cannot replace the existing quota systems. New and improved technology is important for conserving and possibly strengthening the individual stocks, something which can have a positive long-term effect on the setting of quotas.

Satellite surveillance can only be used for the monitoring of position - not for the monitoring of catches. Satellite surveillance is thus exclusively a control function. The antipathy expressed by fishermen may possibly be based on principle and emotion rather than on opposition to satellite surveillance as such.

To the question of whether technological development can ensure sustainable fishing it was reported that marine rearing and stocking are problematic methods in connection with the safeguarding of principal species. For example, average yearly production of one-year-old cod in the North Sea numbers around 400 million individuals. To measurably increase cod levels and catches by stocking would therefore not immediately be possible. Although it would be technologically feasible to produce cod for stocking in quantities comparable with production in the wild, this would probably not be viable economically. The same is true for the great majority of fish species.

It is the assessment of the panel therefore priority should not generally be given to rearing activities as a means of assisting the stocks of significant species. In individual waters and for individual species, however, it may be expedient for attempts to assist species by stocking to

be continued until stock levels reach a natural, sustainable size.

Question 5.
Can a Danish fishing industry based on the principle of sustainability be/become viable in the future?

a) Can the width of the Danish fishing fleet be retained within a viable and environmentally sustainable fishing regime?

b) How viable are the different forms of fishing today?

c) What economic compensation should be awarded to fishermen affected by sharp cutbacks?

d) What socio-economic action should be taken when a fishing industry is hit by cutbacks?

e) What are the consequences of an end to fishing in small communities?
for, say:
- employment
- tourism
- local supplies of fresh fish
- cultural heritage

f) How can the use of public funds for repeated debt rescheduling, refinancing, etc. of non-viable fishing vessels be avoided?

In the light of experience from the recent years of crisis in the fishing industry the panel believes that Danish fishing can be viable and sustainable in the future.

The scrapping policy pursued appears to have had a positive effect by forcing a necessary reduction in the overall Danish fishing fleet and thus ensuring more fish for the individual fisherman. The remaining vessels have to some extent recouped the lost capacity through increased efficiency. The scrapping subsidy has also helped those who wished to leave the industry.

Such a development will in the longer term concentrate fishing on fewer ports.

The panel therefore recommends that continued scrapping subsidies be accompanied by a policy which seriously addresses the structure of the remaining fleet. A continued reduction of the fleet should be based on a balance between viability and sustainability. The same principles should apply in the case of refinancing.

We have only had access to economic data from the fishermen's association for the port of Thyborøn. The panel does not consider it possible to gain an insight into the viability of different types of fishery activities so long as there are no comprehensive, representative accounting statistics in each case.

The panel therefore recommends that such statistics be prepared by the Danish Institute of Agricultural and Fisheries Economics, a task which is in fact also under way.

Sharp quota cuts should as far as possible be avoided. In the event of such cuts the fisherman should receive economic compensation. The arrangements hitherto have been fraught with problems as the compensation has been decided from case to case, leading to uncertainty on the part of the fisherman.

The panel believes that a fixed support be granted in relation to the specific loss. In this connection the fisherman who is a joint-owner should be financially safeguarded on a par with the boat and master.

The panel believes that the commercial structure of tomorrow's fishing industry should generally safeguard viability.

A sharp, drastic cutback in fishing activity in particularly vulnerable local communities may have such serious consequences, however, that a special, temporary holding action may be required (massive lay-up support, price subsidies, etc.). The island of Bornholm is an example of a local community in which special action has been taken to safeguard a local fishing industry, promote tourism, assure local supplies of fresh fish and maintain the cultural heritage of which fishing is part. Such schemes must be conditional upon the future expectation of a viable fishing industry.

Question 6.
How can we ensure a continuation and renewal of Danish fishing?

a Can the existing financing facilities ensure a much-needed fleet renewal and help effect a necessary generational change?

b) What would be the consequences of unrestricted fishing for small boats?

c) What can be done to ensure a varied fishing industry in terms of types of vessels, catch methods and geographical distribution?

d) Is there a need for more far-reaching training of fishermen?

There is a general problem in that the Danish fishing fleet consists of vessels with an average age of more than 30 years. The fleet is worn out and beset by heavy maintenance requirements. Renewal is therefore urgently needed as one of the prerequisites for a generational change.

However, both lenders and borrowers are inhibited by the uncertainty surrounding future fisheries policy.

The existing financing facilities provide for a loan of up to 70% of the mortgage value of the boat (up to 85% in the case of young, first-time fishermen) to be raised from Fiskeribanken on market terms. In addition, a statutory basis exists for the granting of EU and Danish investment support of 30-50% on new builds. To date, appropriations have not been made to this scheme.

A problem of the present arrangement is that Fiskeribanken's lending level is far too low. Where second-hand boats are concerned it is possible to borrow 40-60% of the commercial value or valuation over 10-15 years, depending on the age of the cutter. Added to this there are various forms of guarantee requirements which then have to be financed by a bank, together with the balance and an operating credit.

The absence of economic statistics, which we discussed in Question 5, has hitherto been an obstacle to assessment of the precise scale of this problem.

The panel believes there is a need for a renewal of the fishing fleet through a combination of newbuilding and scrapping. The prerequisites for such a solution are:
- Structural changes to Fiskeribanken
- New capacity regulations so that the Act on First-time Establishment can be used
- Higher loan percentages
- Longer loan terms
- Smaller guarantees

The panel does not consider that small boats pose a significant problem for fishing, except for certain species such as Dover sole. There are today virtually no restrictions on fishing for small boats under the existing forms of control. We recommend that the existing system for small boats should continue.

The panel believes that a wide variety of fishing boats and catch methods will exist also in the future. The traditions of different ports will, together with the possibilities for fishing, ensure a varied and geographically distributed fishing industry (example: the port of Hvide Sande

with its net fishing and Hirtshals with its seine fleet).

Training is crucial to ensure a generational change in the industry.

A positive innovation is the newly established basic training for the fishing industry which should be given time to show results.

Besides training, the panel believes there is also a need for increased information to enable the individual fisherman to cope with the adjustment demanded by changes in the industry. Their unique working conditions mean that many fishermen do not have the necessary time to take long training courses. It might therefore be desirable for the supplementary training to be organised in the form of local theme days/courses at which topics such as fisheries administration, marine biology and business management could be discussed.

Question 7.
What advantages and disadvantages exist in bringing ashore and utilising all fish caught - what is possible in practice?

a) What can be done to ensure that fish which do not reach minimum price are still used for consumption?

b) What interaction is there between the control systems and the pull-out of consumption fish?

c) Does a problem exist with "grey fish" and "black fish" in commercial and other fishing?
If so:
- Does this problem cause market distortion?
- How can the market be made more transparent?

"Grey fish" are fish which are sold under another name. For example, cod, which is sold as "light coal-fish".

"Black fish" are fish which are sold, for example, direct from the quayside and can thus bypass the quota, tax and VAT systems.

The panel generally believes that the problem of discarding can best be remedied by means of species-selective technology, and that to bring discarded catch ashore would not be a solution. First, to do so would place the fisherman in breach of the minimum size regulations. And second, part of the discarded catch is put back alive while the remainder re-enters the food chain. Last, the panel believes that the discarding problem is also due to the quota system and

could be remedied by greater flexibility in the administration of quotas.

It is clear that there is an interaction between control and pull-out of fish which do not reach minimum price and cannot therefore be sold for food. It is also clear that vigorous direction of this control relative to the market situation can be useful in periods. This can lead to a clash with the traditional attitude that the task of the fisherman is to catch as many fish as possible in the shortest possible time. It is naturally also important for the fisherman to be assured of a minimum price for his catch via the PO scheme.

The recreational fisherman is today permitted to use nets and traps to an extent which enables him to catch far more than a normal household can consume. The surplus is sold through unauthorised channels. These amounts cannot be quantified but do represent a problem in certain local communities.

Angling will not normally constitute a problem, but in certain forms of organised angling quantities are caught which far exceed the levels for personal consumption. Unauthorised sale of this catch may constitute a problem.

Commercial fishermen can also sell fish from the quayside. We do not consider the scale of this sale to be significant.

Before the Sales Act was introduced, sales of grey and black fish were a source of local market distortion in certain places. Today, the threat of losing the first-time grant, combined with other fishery control measures, have led to a real improvement in this area.

Question 8.
What market developments in fresh fish and processed/frozen fish produce can be expected in the years ahead?

a) How can the fishing industry influence these developments?

b) Can the number of expensive intermediaries between fisherman and consumer be reduced?

c) What can be done to ensure that a varied selection of high-quality fresh fish reaches the consumer quickly and cheaply?

d) What can be done to motivate the fisherman and everyone involved in the distribution structure to improve fish handling?

e) How can Danish fish be date and quality labelled?

The panel believes that market development for fishery produce will be characterised by substantial competition also in the future - partly from external raw materials and partly from lower prices on subsidised agricultural and fishery produce from third countries and the EU. Danish fishermen are not subsidised to the same extent as third country fishermen, something which distorts the international competitive situation.

There appears to be a growing interest and demand for high-quality foodstuffs, particularly in the market for fresh fish, a demand the fishing sector should endeavour to meet.

The panel recommends improved quality control at all stages, improved classification, and quality labelling which includes catch data and details of catch handling on board.

This means that, particularly in the case of fresh fish, industry and exporters should enter into a constructive dialogue with fishermen in order to coordinate catch, distribution and sale and thus be in a position to meet the demands of tomorrow's market - and in order to ensure that market signals are received by the fisherman.

Danish consumers are apparently not ready to pay the same as, for example, other European consumers for good Danish fish. Steps must be taken to ensure that work to generate sales in markets willing to pay for high-quality fish continues, so that fishermen achieve higher payment prices. The panel recommends that the concept that "good fish cost money" be intensively marketed also in Denmark.

Expanded use of modern information technology can simplify fish sale procedures and increase the potential clientele. For some parts of the fishing industry, at-sea packaging into appropriate containers which can be offered to the retail market by teleauction can reduce the number of expensive intermediaries and ensure that a varied selection of high-quality fresh fish reaches the consumer in Denmark and the rest of Europe quickly and cheaply.

The panel wishes to draw attention to the need for the provision of training in fish handling at sea and throughout the distribution structure.

The fisherman has a natural professional pride in bringing a high-quality catch ashore, but only through better prices can the fishermen and the distribution structure be motivated towards improved fish handling.

Question 9.
Where does the image of the small, blue cutter and fishing as a part of Danish cultural heritage

figure in our discussions of tomorrow's fishing industry?

In our capacity as fishermen we encounter considerable interest in our occupation, something which may have to do with the prominent profile of fishing in the Danish cultural heritage. But in the fishing industry of the future, the small, blue cutter will not play a particularly important role.

We have chosen to base our reply to Question 9 on selected extracts from the statement by Poul Holm of the panel of experts.

"Our cultural heritage is both spiritual and material. It contains elements such as:
- Physical structure, ships, ports
- Knowhow, knowledge, life style
- Memory and identity
- Inspiration for the future

The tenacity of this culture shows itself, above all, in the belief of fishermen that they can deal with the problems themselves, provided they are given a chance."

There is "... a strong tradition of independent boat ownership in Danish fishing, and a close contact between fishermen and craftsmen ashore provides an active platform for the fishing industry of today, and can - if we will - also do the same tomorrow."

"If we do not know our cultural heritage and consciously select or reject it, we may risk it rebelling against us. If we do not know our cultural heritage we become poorer materially and spiritually. A policy which runs counter to our cultural heritage will arouse protest. We should therefore make a conscious choice when we reject parts of our cultural heritage, and an equally conscious choice when we elect to build on it.

Nonetheless, large parts of the cultural heritage which we associate with fishing are in the process of disappearing. This is true not so much of the spiritual but of the material aspect of this heritage. But the fishing industry is not an open-air museum. We cannot demand that fisherman should preserve material remnants which are not economic.

The Danish fishing culture, with its independently owned boats and living ports, is a symbol loaded with valuable significance not only for fishermen, but for the whole of Danish society. The transformation/disappearance of this cultural heritage is a problem which is relevant not only for fishermen and fisheries policy, but for the whole community."

To ensure the survival of fishing, also in small fishing communities, the panel recommends that attention be directed towards the problems which are being experienced within the

individual local community.

For example, extension of the jetty in the port of Bønnerup meant that this fishing community was still able to survive. In other cases the survival of the community may be ensured by a new hauling winch or by an extra ferry departure which ties in with the fish auction.

The panel does not view such initiatives as particularly cost-intensive. But although the investment is small it is often difficult for the local community or local authority to find the money. There might therefore be a need for the establishment of a central fund to which financing applications could be made for these types of special projects - projects which are important both for the preservation of cultural values and for the continued survival of the fishing industry.