

COMMISSION OF THE EUROPEAN COMMUNITIES
Directorate-General for Fisheries

**Regional, Socio-Economic Study
in the Fisheries Sector**

NEDERLAND

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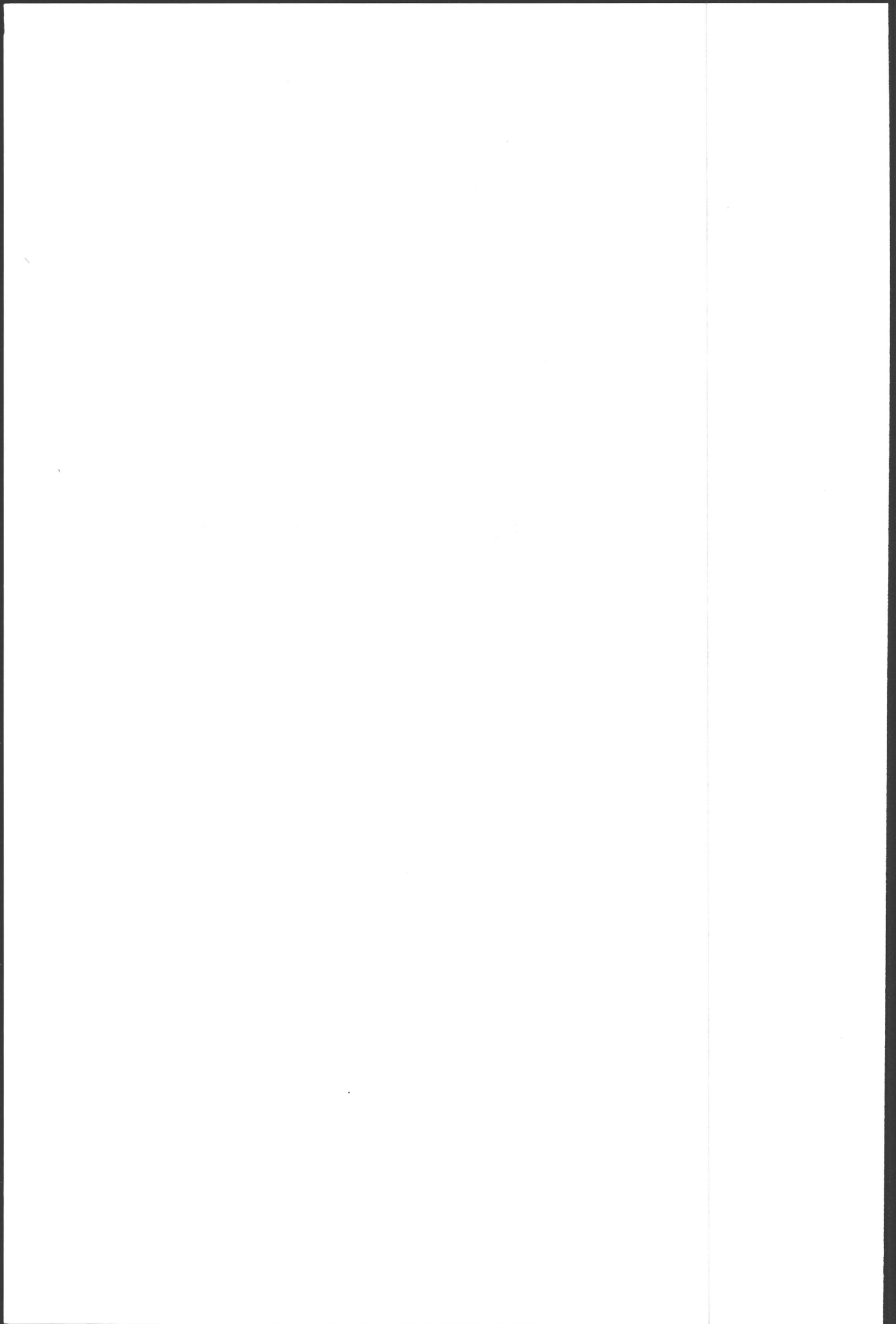
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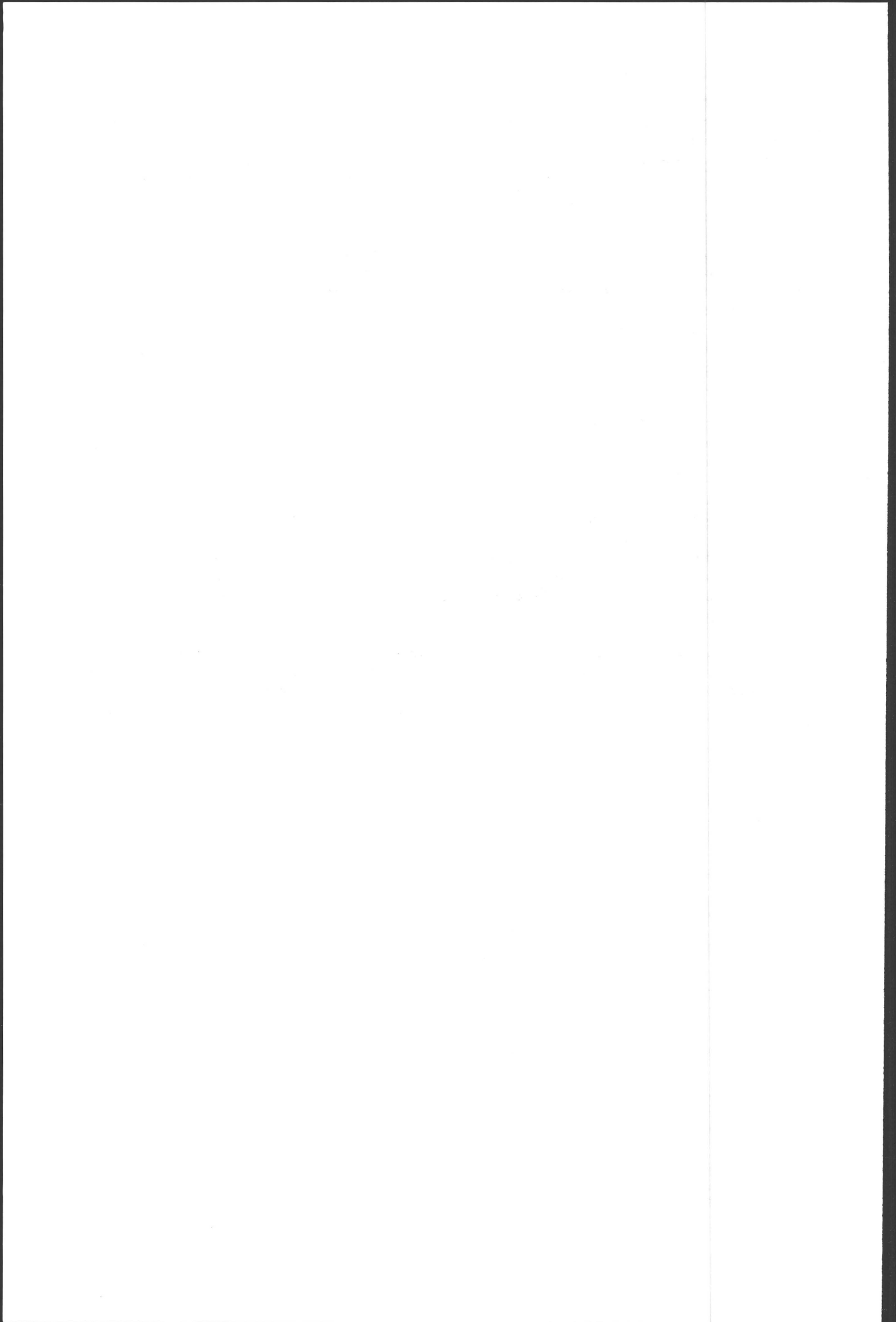
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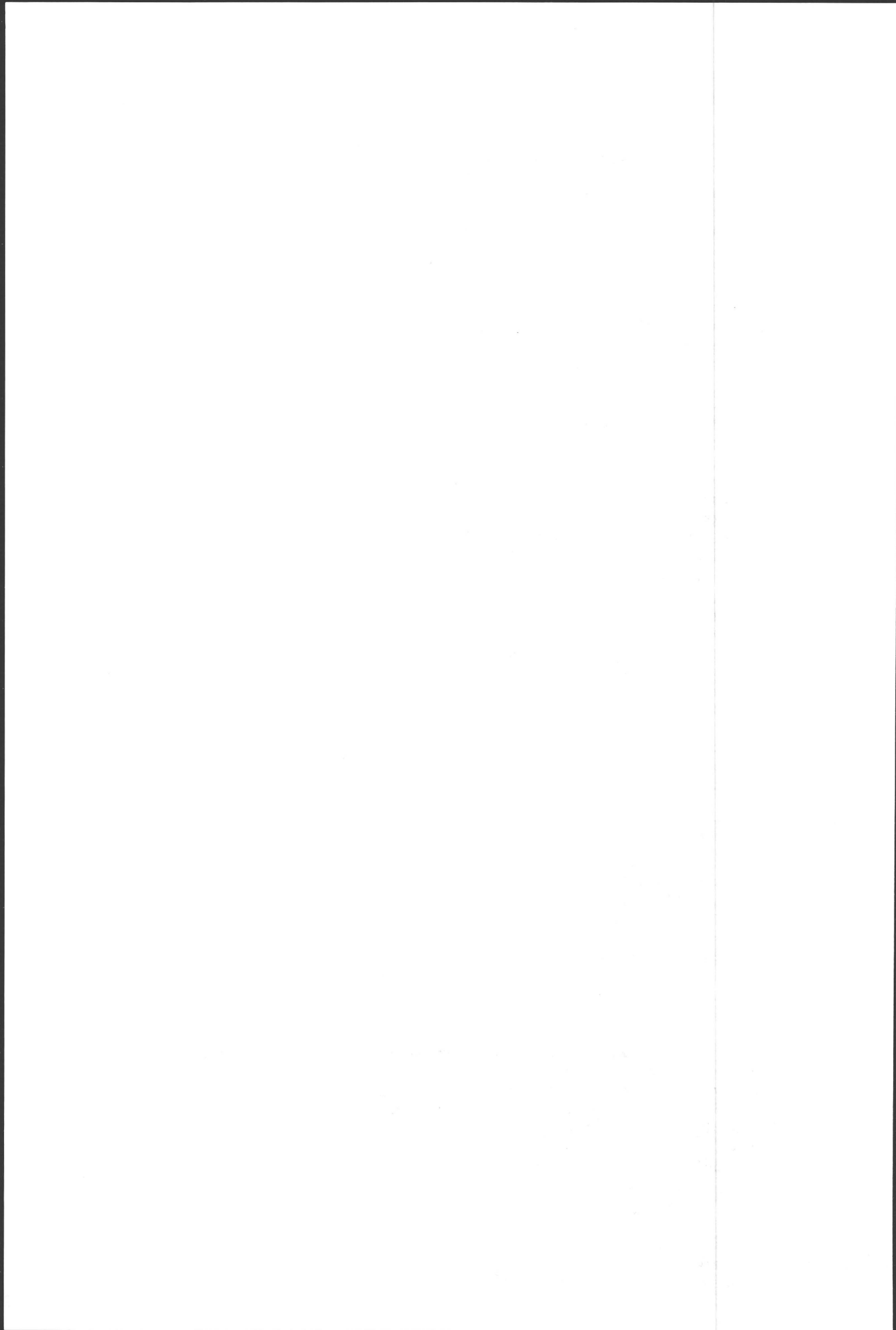
A B S T R A C T

1. De visserijsector in Nederland zorgt samen met alle aanverwante industrieën voor 15.000 arbeidsplaatsen en voor een bruto toegevoegde waarde (BrTW) van 790 MECU. Gerelateerd aan de betrokken cijfers voor heel Nederland is dit een aandeel van 0,3 tot 0,4% (zie tabel bij punt 7). De visserijsector kan worden onderverdeeld in de visserij in eigenlijke zin (30%), de aquacultuur (5%), de verwerkende industrie en de handel (45%) en de aanverwante activiteiten (20%).
2. De visserij wordt overwegend uitgeoefend met kotters. De activiteit van kotters en trawlers valt onder het gemeenschappelijk visserijbeleid (GVB). Beperkingsmaatregelen van het gemeenschappelijk visserijbeleid hebben tot de herstructurering en inkrimping van de vloten geleid, verlegging van de activiteiten naar wateren buiten de EG EEZ en ook tot minder activiteit per vaartuig. Over het geheel genomen kan de kottervisserij ook bij de beperkte activiteit zonder verlies werken. Toch moet een deel van de vloot wel met verlies werken als gevolg van de verdeling in individuele visrechten.
3. In de toekomst zal waarschijnlijk een aantal kotters met onvoldoende visrechten uitvallen. In de trawlervloot zijn de ontwikkelingen afhankelijk van de toekomstige mogelijkheden voor visserij buiten de EG EEZ.
4. Ervan uitgaande dat de nationale quota op het huidige peil blijven zullen de verwerkende sector en de handel in het algemeen geen problemen hebben als gevolg van het GVB. Een mogelijke verlegging van de aanvoer zal geen invloed hebben op de verwerkende industrie en de handel omdat die geografisch niet afhankelijk zijn van de aanvoer. Zelfs bij verlegging van de aanvoer van het ene EG-land naar het andere, zullen tegelijk overeenkomstige verschuivingen in de import van grondstoffen optreden.
5. De aanverwante industrieën werken slechts gedeeltelijk voor de visserijsector. Veranderingen in de vloot zullen voor deze sector daarom geen grote consequenties hebben. Als de economische resultaten in de visserijsector niet verslechteren, zullen de scheepswerven waarschijnlijk op het huidige niveau actief kunnen blijven.
6. De indeling van Nederland in gebieden laat zien dat in zes daarvan de visserijsector van aanzienlijke betekenis is. Deze zes gebieden samen nemen twee derde van de visserijsector voor hun rekening. Hoewel kan worden aangenomen dat de gebieden min of meer homogeen zijn, moet worden opgemerkt dat het belang van de visserijsector binnen de gebieden toch aanzienlijk kan zijn. Meestal hebben plaatselijk geconcentreerde vissersgemeenschappen een nogal geïsoleerde positie.
7. Een inkrimping van de vloot in het kader van het GVB zal waarschijnlijk de kotters treffen die met verlies werken. Verwacht wordt dat 32 kotters, met een totale bemanning van 140 man, hun activiteiten dan zullen moeten stopzetten. De gebieden met het hoogste aantal vissers waarvan de arbeidsplaatsen in gevaar komen, zijn Flevoland (Urk) en de "Kop van Noordholland" (hoofdzakelijk Wieringen). Maar ook in de andere gebieden kunnen er plaatselijk aanzienlijke gevolgen zijn.
8. Voor de vissers die hun beroep niet meer kunnen uitoefenen, zijn er wat betreft een vervangingsinkomen, en het vinden van nieuw werk tot nog toe alleen de algemene regels. Er bestaat dienaangaande geen specifiek beleid voor de vissers (behalve de saneringsregeling).
9. Er worden door de EG gesteunde acties voorgesteld om deze vissers aan nieuwe werkgelegenheid te helpen. Acties kunnen worden geconcentreerd op de gebieden waar visserij belangrijk is voor de economie. Maar plaatselijke vissersgemeenschappen in andere gebieden kunnen toch van aanzienlijk belang zijn in verhouding tot de totale visserijsector en deze gebieden kunnen met dezelfde problemen worden geconfronteerd als de eerderbedoelde. Daarom moet de concentratie van de acties op de visserijsector als totaliteit voorrang krijgen op concentratie van de acties op bepaalde gebieden.



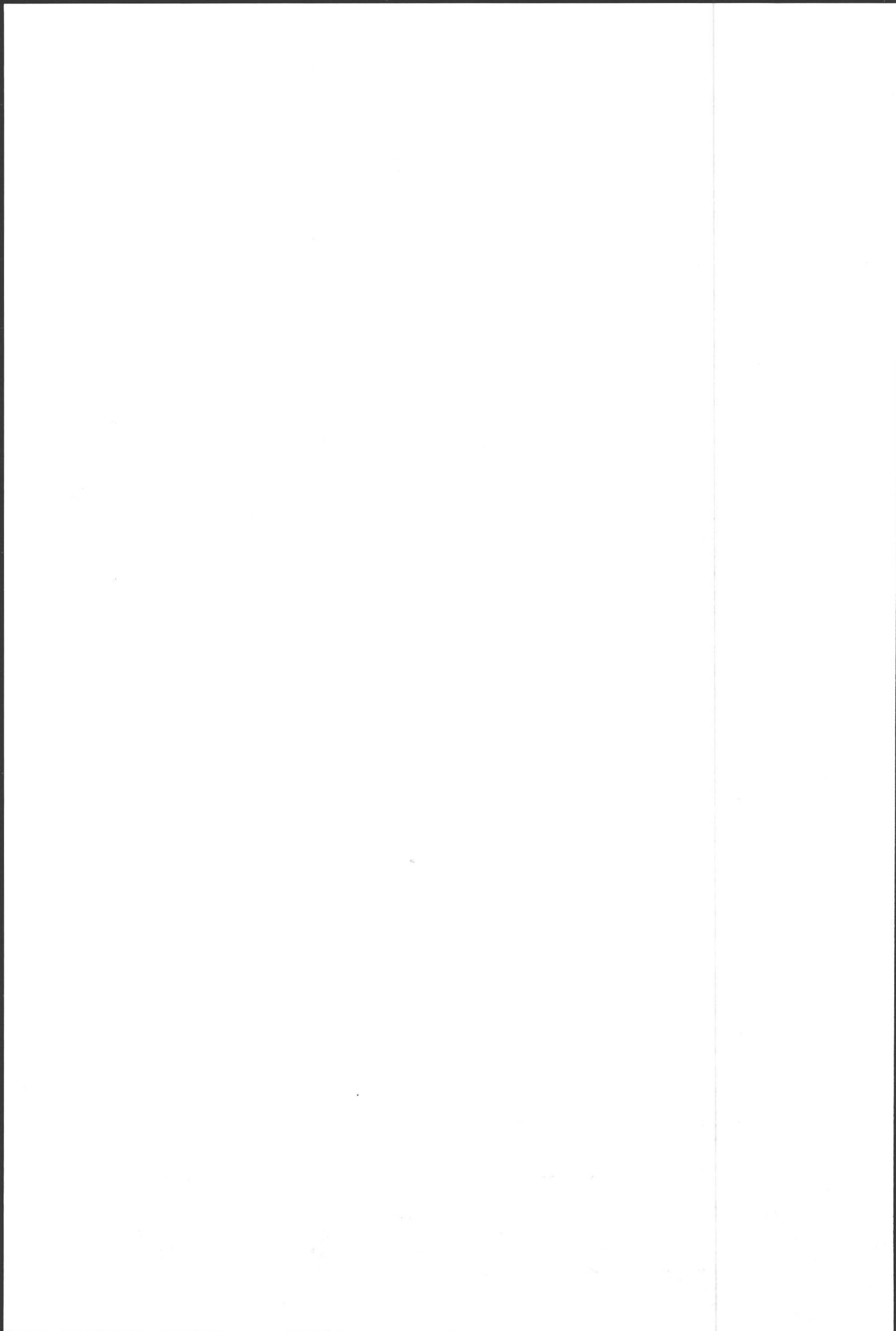
ABSTRACT

1. The fisheries sector in The Netherlands accounts for an employment of 15,000 man years and a Gross Value Added (GVA) of 790 million ECU. Related to national figures this means about 0.3 to 0.4 per cent. Sectors are catching (30 per cent), aquaculture (5 per cent), processing and trade (45 per cent) and ancillary activities (20 per cent).
2. The catching sector is dominated by cutter fishing. Cutters' and trawlers' activities are governed by CFP. This led to some contraction or restructuring of fleets, extending activities outside the EC EEZ and to reduced activities per vessel. As a whole the sector can cope on a break even level. The existing division of individual fishing rights however causes part of the fleet to operate under that level.
3. Probably a number of cutters, having inadequate fishing rights, will drop out. In the trawler section developments are dependent on future fishing possibilities outside the EC EEZ.
4. The processing and trade sector will generally have no CFP-problems assuming national quota to stay at present levels. A possible shift of landings between zones will have no effects on the processing and trade sector, not being geographically linked to the catching side. Even shifts between landings of EC countries will be met by corresponding shifts of raw material imports.
5. Ancillary industries are only partly dependent on the fisheries sector. Developments in the fleet will not be of great importance to this sector. As economic results of fishing probably will not deteriorate shipyards also seem to be able to hold on to present activities.
6. Zonal distribution show six zones in which the fisheries economy has a more or less heavy impact, totalling about two thirds of the sector. While zones are assumed as being more or less homogeneous, within zones the impact could locally be heavy. Often locally concentrated fishing populations have a rather isolated position.
7. A contraction of the fleet caused by CFP will probably concern cutters operating under break even level. It is expected that this could lead to 32 cutters to cease activities, totalling a crew of 140. The largest numbers of threatened fishermen should be found in the zones "Flevoland" (Urk) and "Kop van Noordholland" (mainly Wieringen). Within other zones however the impact could locally be notably also.
8. For fishermen dropping out only general public policies can be applied up to now, both in transfer of income and in reallocating employment. No specific fishery aimed policies exist (apart from decommissioning schemes).
9. EC sponsored actions to reallocate those fishermen are proposed. Actions could be directed towards zones in which fisheries are important for the economy. At the other side isolated fishing communities in other zones could be of some importance in relation to the total fisheries industry. These might locally face the same problems as in the 'heavy impact zones'. In that light a concentration of actions on the fisheries sector as a whole should have a greater priority than a zonal concentration.



A B S T R A C T

1. Le secteur de la pêche aux Pays-Bas occupe 15.000 hommes/année et représente une valeur ajoutée brute (VAB) de 790 mio d'écus, soit 0,3 à 0,4% du niveau national. L'industrie de la pêche comprend les secteurs des captures (30%) et de l'aquaculture (5%), la transformation et la commercialisation (45%) et les activités connexes (20%).
2. Le secteur des captures est dominé par les cotres qui, avec les chalutiers, ont des activités régies par la politique commune de la pêche (PCP). Les restrictions imposées par la PCP ont obligé à réduire les flottes et les activités de chaque bateau, et à restructurer la flotte afin d'étendre ses activités en dehors de la zone économique exclusive (ZEE) de la CE. Dans l'ensemble, le secteur absorbe ces réductions en restant au seuil de rentabilité. Néanmoins, vu la répartition actuelle des droits de pêche individuels, une partie de la flotte travaille en dessous de ce niveau.
3. Un certain nombre de cotres ayant des droits de pêche inappropriés devront probablement renoncer à leurs activités. Du côté des chalutiers, l'évolution dépendra des possibilités de pêche futures en dehors de la ZEE de la CE.
4. Le secteur de la transformation et de la commercialisation supporterait les mesures imposées par la PCP si les quotas nationaux demeuraient aux niveaux actuels. L'éventuel changement des lieux de débarquement entre zones ne se répercutera pas sur le secteur de la transformation et de la commercialisation, non lié géographiquement au secteur des captures. Même les changements de lieu de débarquement entre pays de la CEE seront compensés par des changements correspondants dans les importations de matières premières.
5. Les industries connexes ne dépendent que partiellement de la pêche. Dès lors les modifications éventuelles de la flotte auront peu d'importance pour ce secteur. Si les résultats économiques du secteur "pêche" se maintiennent, les chantiers navals pourront conserver leurs activités actuelles.
6. On distingue six zones dans lesquelles le secteur de la pêche est plus ou moins important, totalisant environ les deux tiers du secteur. Si l'on considère les zones comme plus ou moins homogènes, l'impact à l'intérieur de celles-ci pourrait également être important, même s'il se fait à une échelle géographique réduite. Les populations de pêche souvent concentrées sur le plan géographique ont une situation isolée.
7. La diminution de la flotte causée par la PCP concernera probablement les cotres opérant en dessous du niveau de rentabilité. On pense que 32 cotres employant 140 personnes pourraient être amenés à cesser leurs activités. Les plus grands nombres de pêcheurs menacés seraient enregistrés dans les zones Flevoland (Urk) et Kop van Noordholland (surtout Wieringen). Dans d'autres zones, l'incidence pourrait cependant être aussi très marquée.
8. Jusqu'ici, seules des mesures de politique générale permettent de traiter les problèmes des pêcheurs qui cessent leurs activités, tant au niveau des transferts de revenus que de la réaffectation de l'emploi. Il n'existe pas de politiques spécifiques applicables à la pêche (en dehors de plans de retrait de bateaux).
9. La CE subventionne des actions visant à réaffecter ces pêcheurs. Il s'agit d'une part de concentrer ces actions dans des "zones à forte incidence", c'est-à-dire où la pêche est importante pour l'économie. D'autre part, les communautés de pêche isolées à l'intérieur d'autres zones peuvent revêtir une certaine importance par rapport à l'ensemble du secteur de la pêche. Elles pourraient être confrontées aux mêmes problèmes que dans les "zones à forte incidence". Dans cette perspective, il faudrait donner la priorité à la concentration d'actions dans l'ensemble du secteur de la pêche plutôt qu'à la concentration zonale.



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LITERATURE

1. INTRODUCTION

By request of the European Commission, Directorate-General for Fisheries, the Agricultural Economics Research Institute LEI-DLO has executed a REGIONAL, SOCIO-ECONOMIC STUDY IN THE FISHERY AND AQUACULTURE SECTOR, PART NL.1, THE NETHERLANDS, WHOLE COUNTRY.

The aim of the study is to ascertain the socio-economic role of fisheries (including aquaculture, processing, trade and secondary activities) in the region's economy. Especially zones are to be defined of which the economy is relatively strongly dependent on the fishery sector.

For these zones the impact of current and future CFP measurements on the fishery sector shall be ascertained.

In the case of the impact of future CFP measurements being considered important the possibilities of reallocation of the superfluous labour force are studied and recommendations made for EC and national aid schemes to support the reallocation.

The study is carried out by W. Smit and J.W. de Wilde of the Fisheries Division of LEI-DLO; the information used was completed by the most recent data calculated by W.P. Davidse, H. Harmsma and J.G.P. Smit of the same Division.

Besides the use of general statistics and data available at LEI-DLO the research group was grateful to be able to use:

- data on individual fishing rights from the Ministry of Agriculture, Directorate of Fisheries;
- the results of an inquiry in the fish processing and trade sectors by the Department of Processing and Trade of the Product Board for Fisheries and Fishery Products (Produktschap voor Vis en Visprodukten);
- data on fish prices of the same Board.

Incomes are defined in the study by the gross value added. For the aggregate economy on national and regional scale published GDP serves as such. For the fisheries and adjacent sectors GVA is calculated as the sum of gross labour costs, interest, depreciation and net income as calculated or estimated in full costs and earnings statements.

2. GENERAL DESCRIPTION OF THE TOTAL REGION

2.1 Physical

The Netherlands comprise a total land surface of 33,900 km². The country has a relatively long coast line of 370 km (excluding islands). Moreover the estuaries of the rivers Rhine, Meuse and Scheldt and the islands on the North and South sides of the country create an increased connection with the sea. Historically this has led to extensive fishing operations, be it that works like the diking of the former Zuiderzee and the Delta-plan did reduce fishing opportunities.

In 1990 total population of the country amounted to nearly 15 million souls, leading to a population density of 439 per km². Some 12 per cent of the population live in rural municipalities under 10,000 inhabitants, 63 per cent in municipalities between 10,000 and 100,000 inhabitants and 25 per cent in larger urban municipalities.

2.2 Economic

Gross Domestic Product (GDP) in 1990 was about 217 billion ECU. Of the total population of nearly 15 million some 10.3 million are in the age group of 15-64 years. Out of this group some 6.2 million persons are active in jobs, comprising a total employment of 4.4 million man years. Unemployment accounts for 0.4 million people.

Average per capita GDP amounted to 14,600 ECU and per active man year average GDP was 49,600 ECU.

2.3 General role of the fishery sector

The aggregate fishery and aquaculture sector (including all related industries) in 1990 accounted for some 15,000 man years employment or about 0.34 per cent of national employment. The aggregate sector earned a Gross Value Added (GVA) of about 790 million ECU; that is 0.36 per cent of national GDP. GVA per man year in the fisheries sector amounts to 52,500 ECU, slightly more than the national average.

The division of total employment and GVA in the fishery sector over the subsectors is:

	Man years	GVA
Catching	23 per cent	28 per cent
Aquaculture	3 per cent	5 per cent
Processing and trade	47 per cent	49 per cent
Ancillary sector	27 per cent	18 per cent.

Major ports in the fishery and aquaculture sectors, mentioning the subsectors that are important for these ports are listed below from South to North (for the positions along the Dutch coast see the chart in Annex 1):

Breskens (BR): cutter fishery.

Vlissingen (VLI): cutter fishery.

Arnhemuiden (ARM): cutter fishery; former port abandoned as result of Delta works, vessels based in neighbouring harbours.

Yerseke (YE): largest centre of mussel culture, oyster culture, cockle fishery.

Bruinisse (BRU): mussel culture.

Goedereede, including Stellendam and Ouddorp (GO, SL, OD): cutter fishery, some cockle fishery.

Scheveningen (SCH): trawler and cutter fishery.

Katwijk (KW): cutter and trawler fishery.

Ymuiden (YM): trawler and cutter fishery.

Den Helder (HD): cutter fishery.

Texel (TX): cutter fishery.

Wieringen (WR): cutter fishery, some mussel culture and cockle fishery.

Urk (UK): largest centre of the cutter fishery (shut off from the North Sea by Zuiderzee works, large vessels call at other ports, auction still one of the largest), Lake Yssel fishery.

Zoutkamp, including Lauwersoog (ZK, LO): cutter fishery (small cutters), one of the ports Urk vessels call at.

2.3.1 The fishery subsector

This subsector alone in 1990 on average accounted for 746 vessels employing 3,500 man years. The subsector earned a GVA of 223 million ECU; that is 63,600 ECU per man year. Activities can be divided into:

- The trawler section, operating large pelagic freezer-trawlers in EC waters and waters of third countries;
- The cutter section, operating a range of small to relatively big vessels, mostly fishing for demersal species, including shrimps, in EC waters and occasionally in Norwegian waters;
- Cockle section, fishing on cockles in the estuaries;
- Inshore section, small vessels fishing on non-quota demersal species within the estuaries and near the coast;
- Lake Yssel section, fishing on fresh water species like eel, pike perch, etc. in the Lake Yssel with small vessels;
- Other fresh water section, fishing on the same species in canals, lakes, etc. with rowing and outboard motorized boats.

Some basic data of these sections in 1990 are put down in table I.

Table I. Size of the fishery sector in 1990

Section	Vessels	Power 1000 kW	Mn-years	Million ECU	
				Proceeds	GVA
Trawlers	14	63	382	62	42
Cutters	556	410	2432	296	166
Cockles	44	15	132	15	9
Inshore	35	3	70	0	0
L. Yssel	97	10	285	6	4
Fr.w.fish.	PM	PM	200	3	2
Total	746	500	3502	382	223

2.3.2 The aquaculture sector

This subsector in 1990 on average accounted for some 92 vessels employing 430 man years. The subsector earned a GVA of 42 million ECU; that is 97,500 ECU per man year. Activities can be divided into:

- Mussel section, sea bed mariculture of mussels;
- Oyster section, sea bed mariculture of oysters;
- Aquaculture of fresh water species like eel, catfish and trout, land based enterprises, not using ships.

Some basic data of these sections in 1990 are put down in table II.

Table II. Size of the aquaculture sector in 1990

Section	Vessels	Power 1000 kW	Mn-years	Million ECU	
				Proceeds	GVA
Mussels	82	27	251	46	37
Oysters	10	2	100	4	2
Fr.w.cult.	PM	PM	80	7	3
Total	92	29	431	57	42

2.3.3 The processing and trade sector

The processing and trade industry comprises some 450 enterprises with a 7,000 man years employment in 1990. This subsector earned a GVA of 343 million ECU; that is 49,000 ECU per man year. According to the nature of the activities and the products the subsector can be divided in:

- Fresh products;
- Frozen products;
- Salted products;
- Smoked products;
- Canned products.

Some basic data of these sections in 1990 are described in table III.

Table III. Size of the processing/trade industry in 1990

Section	Production units	Workers	Million ECU		
			Sales	Exports	GVA
Fresh	303	2400	573	72%	145
Frozen	77	2100	486	88%	130
Salted	42	700	84	46%	25
Smoked	75	500	89	16%	28
Canned	40	1300	142	65%	55
Total	454 1)	7000	1374	72%	383

1) Excluding overlaps.

2.3.4 The ancillary activities

In the ancillary activities, serving the catching, the aquaculture and the processing and trade sectors, some 4,100 man years are active. This subsector earned a GVA of 142 million ECU; that is 34,500 ECU per man year. According to the nature of the products some basic data of the subsector are described in table IV.

Table IV. Size of the ancillary activities in 1990

Section	Employment	Million ECU	
		Sales	GVA
Shipbuilding	1000	60	43
Services	1250	46	28
Other	1850	164	71
Total	4100	270	142

The number of enterprises in these activities is not known. However in the majority of the cases supplying the fisheries sector is only a relatively small part of the enterprises' activities. The number of enterprises then will not be indicative of the fisheries oriented activities of these enterprises. For the number of workers an estimate is made of the man years occupied in supplying the fisheries industry.

3. FISHING FLEET

3.1 Development between 1983 and 1990

In the fishing fleet some developments have taken place between 1983 and 1990. By section in terms of input these can be summarized in table V.

Table V. Input of fisheries in 1983 and 1990

Section	Number of vessels			Power (1000 kW)			Man years		
	1983	1990	Index	1983	1990	Index	1983	1990	Index
Trawlers	28	14	50	54	63	115	511	382	75
Cutters	584	556	95	349	408	118	2735	2432	89
Cockles	33	44	133	8	15	182	99	132	133
Inshore	35	35	100	3	3	100	70	70	100
L. Yssel	110	97	88	10	10	99	324	286	88
Fresh w.	PM	PM	PM	PM	PM	PM	200	200	100
Total	790	746	94	424	500	118	3939	3502	89

Both in the trawler and cutter section numbers of vessels and man years went down. A considerable increase of average power raised total power. In the cutter section large (over 1000 kW) ones and vessels of 220 kW (largest allowed within the 12 mile zone) were built. It must be borne in mind that catches per vessel generally increase relatively less than power (per kW per day productivity tend to decrease if the vessel's power increases). This makes judgments on fishing power complicated.

The trawler and cutter sections must be specially considered when dealing with CFP and quota. The other sections are operating practically outside the scope of CFP and quota. Generally in these sections the fleet increased; only in the Lake Yssel fisheries inputs diminished.

It must be noted that 1990 data are stated above as averages throughout the year. In some following tables the situation at the end of 1990 is mentioned. In those tables the data may differ from the year's average.

For these fleets quota in EC waters were available as shown in table VI.

Table VI. EC quota Dutch fishing fleet (1000 t)

	1983	1990
Sole	15.5	19.5
Plaice	60.4	70.1
Cod	26.3	11.7
Whiting	10.2	4.4
Haddock	1.1	0.2
Saithe	0.2	0.2
Herring	30.2	85.2
Mackerel	35.0	31.9
Sprat	1.4	*)
Hake	0.2	0.3
Anglerfish	0.5	0.7

*) TAC not divided between countries.

As to the output table VII shows a summary of landings and proceeds.

Table VII. Landings and proceeds (1000 t, mln ECU)

	1983 1)		1990	
	1000 t	mln ECU	1000 t	mln ECU
Flatfish	107	223	99	245
Roundfish	44	51	17	28
Pelagic fish	246	93	231	62
Crustaceans	7	15	5	22
Molluscs	59	8	56	11
Fresh water f.	9	20	6	15
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Total	472	408	415	383

1) Data of 1983 deflated to 1990 prices.

Basic data of the results of the fisheries sections are stated in table VIII.

Table VIII. Results of the fishery sector in 1983 1) and 1990

Section	Proceeds (mln ECU)			GVA (mln ECU)			GVA/M.yr (1000 ECU)		
	1983	1990	Index	1983	1990	Index	1983	1990	Index
Trawlers	85	62	73	45	42	94	88	111	126
Cutters	299	296	99	128	165	129	47	68	145
Cockles	12	15	128	7	9	128	71	68	96
Inshore	0	0	98	0	0	91	3	3	91
L. Yssel	9	6	70	5	4	70	17	13	79
Fresh w.	3	3	103	2	2	103	9	10	103
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Total	408	383	94	188	223	119	48	64	133

1) Data of 1983 deflated to 1990 prices.

As can be seen total results of the trawler section fell, but income per man year increased. In the cutter section gross proceeds were the same, but total income and income per man year rose. In the other sections the incomes decreased generally.

3.2 Current structure of the fleet

3.2.1 Trawler section

This fleet is concentrated in six companies and its operations are aimed on pelagic species like herring, mackerel, horse mackerel, blue whiting, etc. All vessels are equipped with freezing equipment and the whole catch is landed frozen. In some cases filleting equipment is available on board, but landings of processed fish are small up to now.

Within the companies fishing operations are integrated with trade and processing. So landings are taken over by the trade section of the companies and are not sold at auctions. The companies co-operate within an organisation called 'The Group', especially established for marketing purposes.

Total number of trawlers at the end of 1990 was only 13, but the size of the vessels is considerable (see table IX). Average engine power per vessel

nowadays exceeds 4,400 kW as to 1,900 kW in 1983. All vessels have an age of less than 10 years, five of them having been built in the past three years. This is the result of restructuring the section, allowing for an extension of fishing activities outside the EC EEZ.

Total employment is about 420 man years. Remuneration of the crew is on labour contract, comprising of a share of gross proceeds including a fixed minimum.

Table IX. Trawler fleet at the end of 1990

kW class	Number of vessels	Number of crew
2200- 3680	6	175
3680- 5900	3	105
5900- 8100	4	140
	---	---
Total	13	382

As the availability of quota for the most important species (herring, mackerel, horse mackerel) has varied much in the past fifteen years the operations faced regular frictions. This was the main reason for the restructuring scheme mentioned. Nowadays some 25 per cent of this fleet's operations are carried out outside the EC EEZ.

3.2.2 Cutter section

In this section vessels are generally owned by the skipper. In a number of cases small companies are established, owning two or more vessels, but in general the management is still family oriented. All catches are sold fresh, mostly at auctions.

Table X. Cutter fleet at the end of 1990

kW class	Number of vessels	Number of crew
1- 150	84	169
151- 220	166	532
221- 440	30	125
441- 800	33	158
801-1100	67	403
1101-1500	73	477
1501-	80	548
	---	---
Total	533	2412

At the end of 1990 this fleet numbered 533 vessels with an engine power of 400,000 kW. Size and fishing activities show considerable variations. The cutters' engine power vary from less than 75 kW to more than 2200 kW (see table X).

Total crew amounts to 2412 man years. Remuneration is on the basis of share contracts, the crew being paid a share of the proceeds minus some variable costs like fuel, without a minimum.

Moreover this fleet is using a range of fishing techniques, aimed upon a range of specific species. In table XI the fishing input (kWdays = kW multiplied by days at sea) is shown by type of gear in homogeneous kW groups.

Table XI. Input by type of gear 1990 cutter fleet
(per cent of total)

kW-group	Beam trawling	Roundfish fishing	Herring pair tr.	Shrimp fishing	Other 1)	Total
1- 150	5	0	0	94	1	100
151- 220	33	12	0	52	3	100
221- 440	26	68	0	0	6	100
441- 800	43	55	2	0	0	100
801-1100	95	1	4	0	0	100
1101-1500	100	0	0	0	0	100
1501-	98	0	2	0	0	100
Total	86	6	2	6	0	100

1) Gill nets, seine nets, etc.

Beam trawling on flatfish is by far the most important type of fishing of the cutter fleet. Especially for high powered vessels beam trawling is the only or main occupation.

Roundfish fishing, be it by side trawling or pair trawling, is the main occupation of most of the medium sized vessels.

Herring pair trawling is a seasonal, much less important fishery, being carried out by a relative small number of specialized vessels.

According to the licensing regulations shrimp fishing is restricted to the vessels up to 220 kW. Especially for the vessels up to 150 kW this fishery is dominating.

Other fisheries, like gill net and seine fishing, are of minor significance.

3.2.3 Other sections

Apart from the trawler and cutter sections some fishing is carried out in the estuaries, such as cockle fishing and inshore fishing on species like eel, dab, flounder, etc. In inland waters fishing is carried out, mostly on eel and pike perch. These operations can be divided into the Lake Yssel fisheries (using small cutter-like vessels) and the fisheries in canals and small lakes (using rowing boats with or without outboard engines).

Cockle vessels use pumping gear, the other fisheries mostly use passive gear like fish-traps. Table XII shows the present (1990) extent of these fisheries.

In these fisheries some 700 men are busy. Remuneration is partly done on a fixed wages basis (cockle fishing and inland fishing) or share system (inshore and Lake Yssel fishing).

Table XII. Extent of other fisheries sections in 1990

Section	Vessels	Engine power (1000 kW)	Man years
Cockle fishing	44	15	132
Inshore fishing	35	3	70
Lake Yssel fshr	97	10	286
Other fresh wtr	PM	PM	200
	---	--	---
Total	176	28	688

3.3 Economic performance of the fleet

3.3.1 Trawler section

Out of LEI costs and earnings studies data on the financial results of this fleet are available up to 1988. In table XIII these are shown, including an estimation for 1990.

Table XIII. Aggregate financial results freezer trawlers (million ECU, deflated to 1990 prices)

Item	1983	1986	1988	1990
Number of vessels	28	24	15	14
Average power (kW)	1900	2650	3600	4500
Man years	511	488	360	382
Gross receipts	85.4	75.9	61.8	62.1
Costs:				
Crew remuneration	28.7	25.0	19.3	20.0
Running costs	40.1	29.8	24.0	19.8
Depreciation	10.7	16.8	15.3	16.6
Interest	4.2	5.7	4.8	5.2
Net result	1.7	-1.4	-1.6	0.5

Note: Costs include remuneration of owners and interest on equity capital.

The concentration of the fleet into a smaller number of big trawlers has led to a contraction of the section in real terms. The fleet as a whole seems to operate at an average break even level.

3.3.2 Cutter section

Out of LEI costs and earnings studies data on the financial results of this fleet are available up to 1990. In table XIV these are shown.

Table XIV. Aggregate financial results cutters
(million ECU, deflated to 1990 prices)

Item	1983	1986	1988	1990
Number of vessels	581	615	607	553
Average power (kW)	601	643	712	742
Man years	2747	2961	2848	2496
Gross receipts	299.1	339.1	288.0	295.5
Costs:				
Crew remuneration	84.4	113.0	96.6	93.9
Running costs	40.1	29.8	24.0	19.8
Depreciation	37.8	51.7	52.2	47.3
Interest	21.9	22.2	23.3	26.9
Net result	-15.7	12.3	-16.5	-3.0

Note: Costs include remuneration of owners and interest on equity capital.

After some years of relatively extensive losses the fleet was operating on a break even level in 1990 also. It must be said that on cash flow basis the results are far better, as expenditure on loans (interest and amortisation) is much lower than the sum of depreciation and interest.

According to the size of the vessels (in terms of engine power) and the types of fishery the financial results show variations. For the year 1990 table XV shows the result by kW-group and type of fishery. The result is

Table XV. Average revenue on labour cutter fishery in 1990
by type of fishery (1000 ECU)

kW-group	Beam trawling	Roundfish fishing	Herring pair tr.	Shrimp fishing	Other 1)	Total
1- 150	27.2	.	.	20.1	0.1	20.3
151- 220	33.1	13.9	.	16.9	42.2	23.9
221- 440	47.2	18.6	.	.	65.8	28.9
441- 800	43.7	17.6	117.1	.	10.7	32.6
801-1100	50.4	-19.8	52.9	.	.	50.2
1101-1500	44.0	44.0
1500-	39.7	.	34.7	.	.	39.6
Total	43.0	16.8	53.1	18.2	46.1	36.5

1) Gill nets, seine nets, etc.

calculated as the average revenue on labour (being the total of remuneration and net result, divided by the number of man years).

It is clear that (in 1990) beam trawling on flatfish and herring pair trawling showed better results than roundfish fishing. Also shrimp fishing lagged behind. Incomes seem to increase as the vessels were bigger, but in the case of the biggest cutters this trend seems to bend downwards. Again it must be said that results on the basis of cash flows tend to alter the picture. Especially beam trawling by big cutters leaves a distinctive margin between the total of calculated capital costs and capital expenditure.

3.3.3 Other sections

Of the other sections of the catching subsector estimates of financial results are made for 1983 and 1990, as shown in table XVI.

Table XVI. Aggregate financial results other sections
(million ECU, deflated to 1990 prices)

Section	1983	1986	1988	1990
Cockle fishing:				
Number of vessels	33	.	.	44
Average power (kW)	236	.	.	334
Man years	99	.	.	132
Gross receipts	11.8	.	.	15.0
Non-factor costs	4.7	.	.	6.0
Gross Value Added	7.1	.	.	9.0
Inshore fishing:				
Number of vessels	35	.	.	35
Average power (kW)	81	.	.	92
Man years	70	.	.	70
Gross receipts	0.4	.	.	0.4
Non-factor costs	0.2	.	.	0.2
Gross Value Added	0.2	.	.	0.2
Lake Yssel fishing:				
Number of vessels	110	.	.	97
Average power (kW)	93	.	.	105
Man years	324	.	.	286
Gross receipts	9.1	.	.	6.3
Non-factor costs	3.6	.	.	2.5
Gross Value Added	5.5	.	.	3.8
Other fresh water fishing:				
Number of vessels	PM	.	.	PM
Average power (kW)	PM	.	.	PM
Man years	200	.	.	200
Gross receipts	3.1	.	.	3.2
Non-factor costs	1.2	.	.	1.3
Gross Value Added	1.9	.	.	1.9

Cockle fishing clearly yields the best results, the other sections lagging behind to a more or less extent. As for inshore fishing a part of the income (out of activities like tourists' sports fishing) could not be included.

3.4 Past effects of CFP

3.4.1 Trawler section

The trawler section has indeed been influenced by CFP. The constraints that were caused by restrictions of quota of pelagic species (herring, mackerel, horse mackerel, etc.) in the EC EEZ led to a heavy investment program. Smaller trawlers were replaced by larger ones, permitting fishing activities outside that EEZ. Some were scrapped as others were sold abroad. As said the average size of the trawlers increased considerably. Fishing opportunities within the EC EEZ were thus supplemented by activities along the East Coast of the USA, in the Falkland Islands region, along the coast of Morocco, etc. These activities were accompanied by EC treaties with the

countries involved. It can be estimated that some 25 per cent of the fishing effort of this fleet is nowadays effected in waters outside the EC EEZ.

In practice the vessels work on the basis of a yearly fisheries plan, allowing for a division of activities in and outside EC waters. The companies have organised a firm collaboration in developing combined fishing plans, dividing fishing opportunities between them.

3.4.2 Cutter section

The cutter section is dependent on fishing opportunities in the EC EEZ (apart from using fishing rights in Norwegian waters in some cases). So the activities in the demersal fisheries are restricted by national EC quota of mainly sole, plaice, cod and whiting. Pelagic fishing is governed by a part of the national EC herring quota (each year an agreement is made to divide total national quota of this species into shares for the trawler and cutter sections).

Fisheries are governed by a licensing system, allowing for a ceiling of total engine power. The national flatfish quota are managed by individual transferable quota (ITQ's). For roundfish maximum weekly landings are allocated to a restricted group of vessels. Furthermore individual maximum numbers of days at sea are dictated, detailed into three months periods. At the one side this system accompanies the fulfilment of the individual landing rights, at the other side spreading of landings throughout the year is thus promoted. To cut down fishing capacity moreover two measures are in force. Firstly beam length is restricted to 2x12 metres for each vessel, of course hitting especially the larger vessels. Secondly maximum engine power of new vessels is restricted to 2000 HP, being about 1470 kW. This does not refer to the existing fleet so that the effect will only be felt after cutters are to be replaced.

The results of these policies can be summarized as follows:

- a. The number of cutters (be it including fisheries on non-quota species like shrimps) has been approximately constant from 1983 until 1987 (a little more than 600 vessels); since then the number has fallen to 533 at the end of 1990.
- b. Total number of fishermen in this sector rose by 10 per cent from 1983 until 1987; from 1987 until 1990 this number fell by 18 per cent, leading to a total decline of 9 per cent in the seven years period.
- c. Total kW of the cutter fleet (again including shrimp fisheries etc.) went up until 1988, but then decreased by 9 per cent up to the end of 1990.
- d. Total activity of the fleet, calculated as "kW-days", also increased until 1988, be it at a much slower speed, and decreased since. Excluding shrimp fisheries this total activity decreased by 10 per cent from 1988 until 1990.
- e. Average activity per vessel showed a steady decline since 1983. In the aggregate period from 1983 until 1990 average days at sea per vessel decreased by 18 per cent.

One main conclusion is that in recent years the number of vessels (and total fishing capacity) and employment have decreased. The next conclusion is that the remaining fleet is restricted in its activities.

3.4.3 Other sections

These sections are not directly influenced by CFP. It might be that some fishermen, being driven out of fishing activities on quotaed species, joined the inshore fishing. In most cases however this secondary effect will concern older fishermen who are occupied in this section as a 'way of living'. In the

remaining sections licensing regulations have made it difficult to enter the business.

3.5 Assessment of "survival strength" under restrictive policies

3.5.1 Trawler section

Assuming a continuation of present fishing opportunities the trawler fleet will probably survive on the existing level. The combination of fisheries inside and outside the EC EEZ at present is just satisfactory. A high productivity and hence a satisfactory relation between output and costs also plays a positive role in this fleet's prospects.

The assumption of continuing fishing opportunities probably holds true with regard to those inside the EC EEZ. However a problem could rise when fishing rights in non-member countries tend to dry up. It is known that those countries for example are trying to build up their own fishing fleet. That will ultimately diminish this section's activities whenever no alternatives can be found.

As it stands some 25 per cent of this fleet's capacity could be threatened by such developments, putting the employment of some 100 fishermen at stake.

3.5.2 Cutter section

As a whole the cutter section is sailing satisfactory: in 1990 the fleet was generally operating on an economic break-even level and some data of 1991 suggest highly positive results. All costs can approximately be met and incomes are satisfactory, especially if one is calculating on cash flow basis. Assuming a general continuation of existing quota will keep the fleet going.

This however does not hold for all vessels individually. The division of fishing rights between them do not match the individual fishing capacities nor the necessary output to break even. Some relief could be found in transfers of fishing rights between vessels but the not so well operating vessels generally do not have the financial power to purchase or rent them. This means that a certain part of the fleet is operating under heavy financial pressure. This problem is discussed under paragraph 8.2.

At the other hand there are of course vessels with relative extensive fishing rights and they of course have a large resistance power.

Moreover there is no guarantee that for instance fish prices will not fall or that fuel prices do not rise. The risk of unfavourable developments in this range is ever there. It must be said that each time when results are satisfactory this future risk will diminish; notably financial obligations will decrease when the financial room is used to redeem debts. The fleet is on average modern and replacement obligations could be postponed some time.

3.5.3 Other sections

Fisheries in these sections are not regulated by CFP oriented regulations. Survival strength thus is not dependent on restrictions from that side. It must be said that there are other constraints for these fisheries, like environmental regulations and causes. For cockle fishing threats come from plans that are under consideration to close (parts of)

fishing areas. Fresh water fisheries are threatened by water quality problems that influence fish stocks.

3.6 Zonal role of the fleet

Annex 1 shows a map of the zonal classification of the Netherlands' economy along the COROP-system. This system is aimed at a classification of the country in more or less homogeneous zones and suits quite well an zonewise survey of the fishing sector. In the Annexes 2 and 3 the dependence of the fisheries sector in terms of employment and GDP are shown for all zones.

A summary of the zones in which fishery play a relative important role is shown in table XVII.

Table XVII. Fishery share in 1990 economy of selected zones

Zone	Share of fisheries as a percentage of:	
	Man years	Gross Value Added
40. Flevoland	2.3	3.2
32. Ov. Zeeland	0.5	0.5
20. Ymond	0.2	0.4
29b. Ov. Rijnmond	0.9	1.2
18. Kop N.Holland	0.8	0.8
5. ZW. Friesland	0.8	0.4
Whole country	0.1	0.1

4. AQUACULTURE

4.1 Development between 1983 and 1990

In the aquaculture fleet some developments have taken place between 1983 and 1990. By section these can be summarized in terms of input in table XVIII. Fresh water aquaculture is a land based activity and no ships are used.

Table XVIII. Input of aquaculture in 1983 and 1990

Section	Number of vessels			Power (1000 kW)			Man years		
	1983	1990	Index	1983	1990	Index	1983	1990	Index
Mussels	80	82	103	19	27	142	241	251	104
Oysters	10	10	100	2	2	100	55	100	182
Fresh w.	PM	PM	PM	PM	PM	PM	0	80	x
Total	90	92	102	28	39	139	296	431	119

In the mussel section the number of vessels and the number of man years increased. By an increase of average engine power total power increased. For the oyster section the number of man years increased, leading to a labour intensive culture. The fresh water aquaculture was virtually non existing in 1983 and is still of minor importance in 1990. These sections are operating outside the scope of CFP and quota.

As to the output table XIX shows a summary of landings and proceeds.

Table XIX. Landings and proceeds (1000 t, mln ECU)

	1983 1)		1990	
	1000 t	mln ECU	1000 t	mln ECU
Mussels	103	19	106	47
Oysters	1	5	1	4
Fresh water f.	0	0	3	7
Total	104	24	110	58

1) Data of 1983 deflated to 1990 prices.

Basic data of the results of the fisheries sections are stated in table XX.

Table XX. Results of the aquaculture sector in 1983 1) and 1990

Section	Proceeds (mln ECU)			GVA (mln ECU)			GVA/M.yr (1000 ECU)		
	1983	1990	Index	1983	1990	Index	1983	1990	Index
Mussels	19	47	242	12	37	298	52	148	286
Oysters	5	4	83	3	2	83	47	21	45
Fresh w.	0	7	x	0	3	x	0	34	x
Total	24	58	235	15	42	279	51	97	191

1) Data of 1983 deflated to 1990 prices.

As can be seen total results of the mussel section increased considerably. In the oyster section results went down, partly caused by the Bonamia disease. In the fresh water sections results also were a minor part of total aquaculture business.

4.2 Current structure of the sector

4.2.1 Mussel culture

At present 75 companies are busy in the mussel culture section. In table XXI these companies are classified according to size and location.

Table XXI. Companies in the mussel culture

	Number of companies	Number of vessels	Number of man years
Total	75	82	251
According to size:			
Small	13	13	32
Medium	30	30	103
Large	18	20	64
Largest	14	19	52
According to region:			
Netherlands South	71	78	239
Netherlands North	4	4	12

As can be seen the culture is practically entirely based in the South of the country, at that in the Zeeland area. The most important centres are Yerseke and Bruinisse. Some companies are vertically integrated with processing and trade departments, especially in Yerseke (the centre of mussel processing and trade activities).

The companies are generally managed as family businesses, most of the crew being family members. Remuneration of the crew is based on fixed wages, in many cases plus a certain share in the profit.

The culture is carried out on plots in the Zeeland estuaries and in the Wadden Sea, rented from mainly the State. Although the State has increased the rent considerably in recent years the companies do well generally.

4.2.2 Oyster culture

In the severe winter of 1962/63 the historically important oyster culture in the Zeeland estuaries collapsed. Since it recovered somewhat, never reaching the extent of former years. In recent years the Bonamia disease came on top of the situation, leaving a small industry. It now consists of some 20 companies, totalling some 100 man years.

4.2.3 Other aquaculture

At the end of 1990 there were about 38 enterprises active in fresh water aquaculture. Total employment is about 80 man years (see table XXII).

Table XXII. Extent of fresh water aquaculture

Product	Number of enterprises	Number of man years
Trout	9	15
African catfish	15	35
Eel	14	30
	--	--
Total	38	80

Fresh water aquaculture is still in its building up phase. The sector has started activities after 1983, being virtually non-existent before. From the basic material to the marketable product the culture takes several years. Consequently there is a considerable initial period in which financial results are negative. Most enterprises are still in this phase.

4.3 Economic performance

4.3.1 Mussel culture

Out of LEI costs and earnings studies data on the financial results of this culture are available up to 1990. In table XXIII these are shown.

The data clearly show a remarkably favourable development of the mussel culture's financial results. In recent years this was mainly caused by good prices for mussels on export markets (mainly in Belgium and France). Extensive investment programs have indeed raised costs, but proceeds kept well ahead of these costs. Recently the industry faced problems in obtaining mussel seed as in two successive years recruitment was poor, but in future it can be expected that this will reach a normal level again.

Table XXIII. Aggregate financial results mussel culture
(million ECU, deflated to 1990 prices)

Item	1983	1986	1988	1990
Number of vessels	80	77	79	82
Average power (kW)	239	258	289	330
Man years	241	235	241	251
Gross receipts	19.1	29.7	34.6	46.4
Costs:				
Crew remuneration	5.7	5.7	6.3	6.8
Running costs	6.6	6.0	7.2	9.2
Depreciation	2.8	3.4	4.0	5.7
Interest	1.9	1.9	2.2	4.5
Net result	2.1	12.7	14.9	20.2

Note: Costs include remuneration of owners and interest on equity capital.

4.3.2 Oyster culture

Of the oyster culture subsector estimates of financial results are made for 1983 and 1990, as shown in table XXIV.

Table XXIV. Aggregate financial results oyster culture
(million ECU, deflated to 1990 prices)

Item	1983	1986	1988	1990
Number of vessels	10	.	.	10
Average power (kW)	150	.	.	150
Man years	55	.	.	100
Gross receipts	5.2	.	.	4.3
Non-factor costs	2.6	.	.	2.2
Gross Value Added	2.6	.	.	2.1

4.3.3 Other aquaculture

Out of LEI research data on the financial results of fresh water culture are available up to 1990. In table XXV these are shown.

The data clearly show a growth of fresh water culture from a non-existent industry in 1983 to an industry grossing nearly 7 million ECU in 1990. Net results are still negative because most of the enterprises are in the building up period with heavy initial costs.

Table XXV. Aggregate financial results fresh water culture
(million ECU, deflated to 1990 prices)

Item	1983	1986	1988	1990
Man years	0	34	65	80
Gross receipts	0.0	1.6	4.5	6.6
Costs:				
Crew remuneration	0.0	0.3	0.7	0.8
Running costs	0.0	0.8	2.4	3.9
Depreciation	0.0	0.4	0.9	1.1
Interest	0.0	0.3	1.0	1.0
Net result	0.0	-0.2	-0.5	-0.2

Note: Costs include remuneration of owners and interest on equity capital.

4.4 Past effects of CFP

The aquaculture sector has not been restricted in any way by CFP measures. For that matter the EC has promoted the development of aquaculture, for example by the way of Community Regulations 2908/83 and 4028/86.

4.5 Assessment of strengths and weaknesses

Strengths and weaknesses of the mussel culture can be summarized as follows:

- Areas in the Northern and the Southern estuaries are excellently suited for mussel culture.
- The people in the culture have an excellent knowledge of the technological and commercial aspects of the industry.
- An extensive production method leads to low cost prices of the product.
- The situation with regard to markets and prices has developed favourably; there is only light competition from abroad.
- A monoculture of this kind could present (temporary) problems in case of a low harvest or low prices. This could threaten the industry's continuity.
- Temporary shortages of mussel seed, caused by poor recruitment can hamper the culture as is the case at the moment. This will probably be a temporary set back, but periods like this are also threatening continuity.
- Environmental reasons lead to efforts to shut down (parts of) the estuaries for this culture.
- The risks of water pollution could have repercussions on the industry; this problem needs a continuous monitoring of water and product quality.

Strengths and weaknesses of the oyster culture can be summarized as follows:

- Areas in the Southern estuaries are excellently suited for oyster culture.
- The people in the culture have an excellent knowledge of the technological and commercial aspects of the industry.
- In the market the industry meets competition from abroad.

- The production process nowadays has been severely hit by the Bonamia disease. It is not clear if and when the effects of this disease will fade away.
- The risks of water pollution could have repercussions on the industry; this problem needs a continuous monitoring of water and product quality.

Strengths and weaknesses of the fresh water culture can be summarized as follows:

- There is a growing knowledge of the biology and the technology of the culture of products like trout, catfish and eel.
- Gradually reasonable markets have been developed, but the ultimate size of the market has still to be established.
- The industry however is still in the building up stage and is very vulnerable for set-backs.
- Environmental reasons could increase costs (of water purification etc.).

4.6 Zonal distribution of aquaculture

A summary of the zones, on the same COROP-basis, in which aquaculture play a relative important role is shown in table XXVI.

Table XXVI. Aquaculture share in 1990 economy of selected zones

Zone	Share of aquaculture as a percentage of:	
	Man years	Gross Value Added
32. Ov. Zeeland	0.5	1.0
Whole country	0.0	0.0

It can be seen that aquaculture does not play any role outside the Zeeland zone. In this zone especially mussel culture must be named, alongside oyster culture. Fresh water culture is as yet of minor importance and is spread all over the country.

5. FISH PROCESSING AND TRADE

5.1 Structure

The fish processing and trade sector includes about 454 companies. Table XXVII shows the division into sales classes. A clear distinction between processing and trade (without processing) cannot be made as the trade function and the processing function cannot be distinguished in a lot of cases. Firstly a number of companies deal in fresh products as well as processed products. Secondly under the heading of "fresh products" several products are classified that are fresh in the sense of not having been frozen, smoked, etc., but nevertheless have undergone a kind of process. Examples are:

- fresh fillets;
- fresh mussels that have been sorted, cleaned and stripped of byssus threads.

Table XXVII. Number and size of fish processing companies

SALES IN MLN ECU (1988)	NUMBER OF COMPANIES
0	72
0 - 1	140
1 - 2	106
2 - 4	57
4 - 9	41
9 - 21	28
Over 21	10

Total	454

It must be said that 80 per cent of the sector output is realized by 20 per cent of the companies. So the large companies put a stamp upon the sector.

A breakdown of total employment and sales into the type of processing is given in table XXVIII.

Table XXVIII. Employment and sales by subsector

Subsector	Employment man-years	Sales MLN ECU
Fresh	2400	573
Frozen	2100	486
Salted	700	84
Smoked	500	89
Canned	1300	142
	----	----
Total	7000	1374

As can be seen the subsector producing fresh products (including fresh fillets) is the largest, followed by the frozen products producing subsector.

As to the species that are processed this sector can be described as follows into five main groups:

- a. The flatfish processing industry.
In this group relatively modern equipped plants are active in processing mostly plaice and sole. Plaice is mostly filleted, sole sold whole. Many of the large companies have freezing facilities, both for plaice fillets and whole sole.
- b. The frozen pelagic fish industry
These plants are integrated in the companies active in the trawler section. The companies are specialized on pelagic species like herring, mackerel and horse mackerel and run large freezer trawlers and cold stores. The companies are active in smoking, marinating, canning and matje curing of herring as well.
- c. The herring processing industry
This is a traditional activity in Dutch fisheries. As the trade has lost its dominant position a group of companies is still specialized in matje curing, marinating, vinegar curing, smoking and canning herring.
- d. The shrimp industry
A small group of companies is specialized in peeling, freezing or other treatment of the North Sea brown shrimp (Crangon). Most of these firms are also active in importing, repacking and distributing shrimps and prawns, mostly originating from Asian countries.
- e. The molluscs processing industry
A group of companies is specialized in processing mussels and cockles, sometimes also other species like oysters and periwinkles. Most enterprises are also active in mussel culture or cockle fishing. They produce fresh, frozen, marinated and canned products.

Furthermore there are companies dealing with fresh water fish (smoked or filleted) and pelagic fish (smoked).

The processing plants are mostly specialized upon one or some species. Horizontally integrated companies are an exception.

Table XIX shows the composition of activities of the processing and trade industry, divided by subsector. For a large part The Netherlands' fish processing industry is export oriented. Most produced products find their way abroad.

Table XIX. Production and sales of the processing industry
(1988, million ECU)

	Total	Fresh	Frozen	Salted	Smoked	Canned

Processed products:						
Raw material	645	321	238	15	41	30
Of which landings	59%	62%	63%	13%	27%	70%
imports	41%	38%	37%	87%	73%	30%
Sales	963	440	354	44	72	54
Of which exports	75%	71%	94%	44%	16%	85%
Imported products:						
Imports	169	38	49	23	4	56
Sales	203	46	59	27	4	67
Of which exports	39%	47%	25%	44%	19%	43%

For the processing industry landings, be it from Dutch or foreign vessels, are generally the most important source of raw material. To supplement these landings however imports play an important role. In general

some 40 per cent of the cost of raw material comes out of imports. Especially for salted products (herring) and smoked products (salmon) imports play an important role in the supply of raw material. Some 75% of the sales of processed products are exported. For frozen products (pelagic species) the share of exports is very large, for smoked products (salmon, eel) it is small.

Moreover imports of processed products are of some importance, especially for smoked and canned products. The share of exports in the sales of these products is much smaller, these imports mainly being meant to serve the domestic market.

5.2 Economic performance

For this sector an estimate is made of 1990 financial results. The data are given in table XXX for the aggregate industry and the subsectors mentioned.

Table XXX. Aggregate financial results processing/trade 1990
(million ECU)

Item	Total	Fresh prods	Frozen prods	Salted prods	Smoked prods	Canned prods
Man years	7000	2400	2100	700	500	1300
Sales	1374	573	486	84	89	142
Costs:						
Gross wages	296	123	90	23	21	39
Raw material	950	407	345	56	58	84
Running costs	40	21	12	1	5	2
Depreciation	40	13	15	3	3	6
Interest	36	11	13	3	3	6
Net result	12	4	4	1	1	3

Note: Costs include remuneration of owners and interest on equity capital.

It can be assumed that as a whole the sector can match proceeds and costs. Of course also in this sector results of individual companies will range from unsatisfactory to good. In the past years regularly a number of companies left the business but also new companies entered the business. Next to the established position of old companies a part of the activities takes place within a changing set of (mostly smaller) companies.

5.3 Future outlook

As could be concluded from the preceding chapters it is conceivable that fish processing and trade in The Netherlands have a positive future. Assuming no important negative developments in EC quota the supply of raw material will be assured. And if price relations keep on the present level the industry could develop satisfactorily.

Even deviantly developing landings in individual zones will not hamper this sector much. The companies are used to buy their raw material on several markets in The Netherlands as well as in other countries.

Threats to this sector however could come from other directions. If for instance by environment considerations fishing activities must close down or

decrease the supply of raw material (be it national or on a broader scale) will be influenced negative. Also fish processing is meeting demands on equipment and production methods in view of product quality. This could increase costs that cannot be recovered in sales.

It can be concluded that future outlook of fish processing and trade will not be adversely influenced by CFP, keeping other causes for such influences in mind.

5.4 Zonal distribution of processing and trade

A summary of the zones, on the same COROP-basis, in which processing and trade play a relative important role is shown in table XXXI.

Table XXXI. Proc./trade share in 1990 economy of selected zones

Zone	Share of proc./trade as a percentage of:	
	Man years	Gross Value Added
40. Flevoland	2.7	2.6
32. Ov. Zeeland	1.5	1.1
20. Ymond	1.6	2.3
29b. Ov. Rijnmond	1.1	0.7
18. Kop N.Holland	0.3	0.3
5. ZW.Friesland	0.6	0.8
Whole country	0.2	0.2

Notwithstanding the fact that processing and trade are not directly linked to local landings the industry is quite concentrated in zones in which fisheries (and aquaculture) play an important role. Historically and socially the fishery-oriented population in these zones are easier entering fishery related industries than in other zones.

6. ANCILLARY ACTIVITIES

6.1 Structure

Broadly the ancillary activities can be divided into three groups:

- shipbuilding, including engine works;
- services like financing (loans), accounting, fish auctions, insurance, management support, national management by Fish Products Board, etc.
- other activities, mostly supplying goods.

The activities are spread over a large number of enterprises, ranging from small (for instance repair and supply) shops to national and multinational (for instance oil and insurance) companies. In by far the most cases supplying the fisheries sector covers only a relatively small part of the activities of these enterprises. Only in ship building some companies are more or less specialized in the fishery sector.

Though the enterprises or affiliations of them are mostly situated in or near fishery oriented zones the activities are not directly linked with the sector's activities in the same zone. Communications in the country provide fast ways of answering needs all over the country. Moreover a part of the purchases of the fishery industry are made directly in other countries; in those cases there is no or very little value added and employment in The Netherlands linked to the activities. Examples are the purchase of hulls for fishing vessels in Poland (Gdynia yards) and the purchase of engines in mainly other EC countries. In table XXXII the extent is shown of the ancillary activities that can be linked with the fishery, aquaculture and processing sectors. Out of inputs of these sectors sales of ancillary industries are calculated, GVA being derived on the basis of national industry statistics.

Table XXXII. Extent of the ancillary activities in 1990

Section	Employment	Million ECU	
		Sales	GVA
Shipbuilding, etc	1000	60	43
Services	1250	46	28
Other	1850	164	71
	----	---	---
Total	4100	270	142

6.2 Economic situation

As said supplying the fisheries sector is generally not the main activity of the enterprises concerned. The financial results of these enterprises thus is only partly dependent on the fisheries sector. Therefore in the framework of identifying the economics of the fisheries sector it seems to have no purpose elaborating on the economic situation of this subsector.

An exception should be made for the shipbuilding industry, as in this subsector specialisation in the fishing sector is somewhat more pronounced. Some 30 small or medium sized shipyards are supplying vessels to the fishery and (shellfish) aquaculture subsectors. Their sales to the fisheries sector average about 60 million ECU a year and show yearly variations. Generally production followed the economic results of the fishing and aquaculture sector: when results of these were good shipbuilding activity bloomed and

vice versa. The shipyards however are not entirely dependent on the fisheries sector in The Netherlands. Fishing vessels for foreign principals and vessels for varying purposes (sea and inland navigation) complete the activities to a more or less extent.

In the past years economic results for the individual companies have thus been very diverging and several companies closed down. On the other side some companies entered the trade. At the very moment rather satisfactory results of cutter fishing seem to render a new lot of orders out of this sector.

6.3 Future outlook

Outlook for the supplying and servicing sectors are much more dependent on the general economy than on the fisheries sectors alone. Only for the shipbuilding subsector some remarks can be made.

In view of the restrictions to the capacity of fishing effort an extension of the fishing fleet is not to be expected. Generally the orders from the fishing industry will concern replacement investments. It seems that the existing capacity can cope easily with these. It can be expected that the satisfactory results in cutter fishing will indeed render orders for replacement in the near future. Investments in other fishing sectors and the aquaculture sector (mussel culture) are expected to slow down as a consequence of environmental pressure. And finally the future role of other parts of the economy on the activities of shipyards is difficult to fathom.

A continuation of rather varying results could be presumed for the future.

6.4 Zonal distribution of ancillary activities

A summary of the zones, on the same COROP-basis, in which ancillary activities play a relative important role is shown in table XXXVIII.

Table XXXVIII. Ancill.act. share in 1990 economy of selected zones

Zone	Total anc. sector		Shipbuilding	
	Share of activities as a percentage of:			
	Man yrs	GVA	Man yrs	GVA
40. Flevoland	2.3	1.6	0.1	0.1
32. Ov. Zeeland	1.0	0.8	0.0	0.0
29b. Ov. Rijnmond	0.9	0.6	0.7	0.5
18. Kop N.Holland	0.8	0.4	0.1	0.1
Whole country	0.1	0.1	0.0	0.0

For this subsector also historical links with the fishing industry influence the existing zonal division, while activities nowadays reach mostly far beyond the own zone.

7. ZONES HIGHLY DEPENDENT ON FISHERIES SECTOR

7.1 Identification of the zones

It must be said that the impact of the fisheries sector depends on the method of the geographical classification of the national economy. In this report the classification on the basis of COROP is used as mentioned before (see Annex 1). However in several COROP-zones the fisheries sector may not be that important, but when limited parts of the zones are looked upon fisheries are concentrated in for instance municipalities in which it can have a heavy impact.

On the basis of the COROP classification total employment connected with fisheries and related activities is shown by zone (see Annex 2). A corresponding table is shown for the gross value added (see Annex 3).

Out of the tables it seems that six zones could be lifted out for further examination: Flevoland, Overig Zeeland, Ymond, Overig Rijnmond, Kop van Noordholland and Zuidwest-Friesland. The relative dependency on the fisheries sector of these zones is shown in table XXXI.

7.2 Zone Flevoland

This zone covers the diked parts of the former Zuiderzee. Apart from some activities in various municipalities by far the most extensive activities take place in Urk. This village is historically connected with fisheries, dating from the time the Zuiderzee (Lake Yssel now) was open to the North Sea. In this municipality a vast cutter fleet (123 vessels) is registered, counting a crew of 712. A majority of these cutters do not call at the port of Urk any more owing to the capacity of the port and access route. A large part of its landings however are transported by truck to be auctioned in Urk. Also a part of the Lake Yssel fishermen are situated in Urk (20 vessels and a crew of 59). Moreover 18 processing and trade companies have their business in this village, employing nearly 1000 people. And finally some 800 people are active in ancillary activities. The fisheries oriented activities thus comprise 7.3% of total employment in the zone.

In terms of gross value added this sector earns 7.4% of the zone's total GDP of which 3.2% in the catching sector alone. Apart from the small amount of Lake Yssel fishing all fishing takes place on the North Sea.

7.3 Zone Overig Zeeland

This zone covers the Zeeland province in the South estuaries excluding Zeeuws Vlaanderen that is situated at the Scheldt left bank and adjoining Belgium. Activities are concentrated in the former islands of Zuid Beveland (culture of mussels and oysters in Yerseke), Walcheren (cutter fishing in Vlissingen, Colijnsplaat and Arnemuiden) and Schouwen-Duiveland (mussel culture in Bruinisse). In this zone a cutter fleet (48 vessels) is registered, counting a crew of 220 and a cockle fleet of 25 vessels, manned by a crew of 75. Aquaculture counts for 78 vessels and a crew of 335. Moreover 64 processing and trade companies have their business in this zone, employing more than 1000 people. And finally some 680 people are active in ancillary activities. The fisheries oriented activities thus comprise 3.5% of total employment in the zone.

In terms of gross value added this sector earns 3.4% of the zone's total GDP of which 1.5% in the catching and aquaculture sector. Aquaculture takes place in the estuaries in Zeeland and in the Wadden Sea and cutter fishing on the North Sea.

7.4 Zone Ymond

This zone covers the part of the North Holland province with Ymuiden as a centre. In this zone 14 cutters with a crew of 63 and 2 trawlers with a crew of 68 are based. Moreover 70 processing and trade companies have their business in this zone, employing nearly 1000 people. And finally some 210 people are active in ancillary activities. The fisheries oriented activities thus comprise 2.2% of total employment in the zone.

In terms of gross value added this sector earns 3.0% of the zone's total GDP of which only 0.4% in the catching sector.

7.5 Zone Overig Rijnmond

This zone covers the part of the Zuid Holland province South of the Rotterdam agglomeration. Activities take place in the municipality of Goedereede, consisting of three fishery oriented villages: Goedereede, Stellendam and Ouddorp. This zone is quite oriented on cutter fisheries on the North Sea, comprising 60 cutters with a crew of 328. Moreover 28 processing and trade companies have their business in this zone, employing more than 400 people. And finally some 340 people are active in ancillary activities. The fisheries oriented activities thus comprise 2.9% of total employment in the zone.

In terms of gross value added this sector earns 2.4% of the zone's total GDP of which 1.2% in the catching sector.

7.6 Zone Kop van Noordholland

This zone comprises the Northern part of the North Holland province. Activities are based in the town of Den Helder, the former island of Wieringen and the island of Texel. The zone is quite oriented on cutter fisheries on the North sea, comprising 125 cutters with a crew of 556. The Den Helder and Texel fleet consist generally of larger cutters (beam trawl fishery), the Wieringen fleet mostly of smaller ones (roundfish and shrimp fisheries). Moreover 25 processing and trade companies have their business in this zone, employing 270 people. And finally some 610 people are active in ancillary activities. The fisheries oriented activities thus comprise 2.0% of total employment in the zone.

In terms of gross value added this sector earns 1.5% of the zone's total GDP of which 0.8% in the catching sector.

7.7 Zone Zuidwest Friesland

This zone covers the South-Western part of the Friesland province, quite a rural zone. The zone is partly oriented on cutter fisheries on the North sea (13 small cutters with a crew of 47) and also on the Lake Yssel fisheries (22 vessels and a crew of 65). Moreover 5 processing and trade companies have their business in this zone, employing more than 100 people. And finally some 150 people are active in ancillary activities. The fisheries oriented activities thus comprise 2.1% of total employment in the zone.

In terms of gross value added this sector earns 1.5% of the zone's total GDP of which 0.4% in the catching sector.

Table XXXIV. Zones relatively heavy dependent on fisheries (1990 data)

ZONE	GENERAL FEATURES					FEATURES FISHERIES SECTOR						RELATIVE DEPENDENCE (%)		DEPEND ON EC QUOTA FISHR. INCL. CULTR. (%)		
	POPULATION (1000)	EMPLM M.YRS	GDP (ECU) (1000)	EMPLOYMENT (1000 MY)		GR.VAL.ADD.(MLN ECU)		EMPLOYMENT		GVA						
	TOTAL	AGE 15-64	TOTAL	PER CAPITA	FISHR. RELAT. SECTOR	TOTAL SECTRS	FISHR. RELAT. SECTOR	TOTAL SECTRS	FISHR. SECTOR	TOTAL	FISHR. SECTOR	TOTAL				
	a	b	c	d	e	e/b	f	g	f+g	h	i	h+i	f/d (f+g)/d		h/e (h+i)/e	% of h
Flevoland	212	140	35	1868	8.8	0.8	1.8	2.6	59	79	138	2.3	7.3	3.2	7.4	78
Ov.Zeeland	249	163	67	3673	14.8	0.3	2.0	2.3	19	106	125	0.5	3.5	0.5	3.4	24
Ymond	159	111	61	3130	19.7	0.1	1.2	1.3	11	82	93	0.2	2.2	0.4	3.0	85
Ov.Rijnmond	196	134	37	2039	10.4	0.3	0.7	1.1	24	25	49	0.9	2.9	1.2	2.4	77
Kop N.Holland	332	228	77	4847	14.6	0.6	0.9	1.5	40	36	75	0.8	2.0	0.8	1.5	75
ZW.Friesland	96	63	20	922	9.6	0.2	0.3	0.4	4	10	14	0.8	2.2	0.4	1.5	50
TOTAL NL-1	14891	10271	4377	217049	14.6	3.5	11.5	15.0	223	567	790	0.1	0.3	0.1	0.4	66

Table XXXV. Comparison of general and fisheries incomes by zone (1000 ECU; 1990 data)

ZONE	TOTAL GDP				FISHERIES SECTOR PER MAN YEAR			FISHERIES SECTOR IN % OF ZONE AVERAGE		
	PER CAPITA	PER 15-64	PER PER MAN YEAR	PER PER MAN YEAR	FISHR. SECTOR	RELAT. SECTRS	TOTAL	FISHR. SECTOR	RELAT. SECTRS	TOTAL
		AMOUNT	% OF NATION		f	g	h	f/d	g/d	h/d
	a	b	c	d	e	f	g	h	f/d	g/d
Flevoland	8.8	13.3	53.4	108	73.1	45.0	53.9	137	84	101
Ov.Zeeland	14.8	22.5	54.8	111	58.4	52.6	53.4	107	96	97
Ymond	19.7	28.2	51.3	103	78.6	69.5	70.5	153	135	137
Ov.Rijnmond	10.4	15.2	55.1	111	70.0	34.1	45.4	127	62	82
Kop N.Holland	14.6	21.3	62.9	127	61.7	40.8	49.7	98	65	79
ZW.Friesland	9.6	14.6	46.1	93	27.3	35.4	32.6	59	77	71
TOTAL NL-1	14.6	21.1	49.6	100	63.7	49.2	52.6	128	99	106

8. CONSEQUENCES OF FUTURE CFP

8.1 Review of past and current actions to promote employment

Of course practically all policies to improve the national economy and/or the regional ones implicitly have a positive effect on employment. In that way a structure of policies are in force on a national level and for specific weak regions in particular. For the fisheries sector in particular however no such policies were or are in force.

Attention could be given to the "Rijksgroepsregeling Zelfstandigen". This policy is aimed at subsidies in the shape of income allowances for independent, self-employed small tradesmen to bridge low income periods. As fishermen usually work on a partnership basis the whole crew is seen as belonging to that group. This policy however requires the conviction that unfavourable circumstances are temporary and that the business will take up within reasonable time (about three years). In the past years a number of fishermen were allowed such a bridging subsidy to overcome adjustment to changing surroundings, for instance caused by restriction policies.

For enterprises that have no positive future this policy is of course useless. In the fisheries sector a number of these cases occurred. The fishermen concerned stopped activities and sought for the most favourable way to do this. Individual fishing rights could be sold to other fishermen. To get rid of the vessel they could sell it to fishermen in other EC-countries or they could make use of (EC) decommissioning policies that have been in force in recent years, whichever rendered the highest yield. But this way of stopping business does not allow for supplementary schemes in the framework of employment.

National policies aimed at re-educating unemployed people for other jobs are in force for some time. Regionally these actions are organized and subsidized through the "Arbeidsbureau" (government employment office). For the fisheries sector in particular no policies in this framework have been in force. Special attention was and is only paid to minority groups like immigrants, women and disabled. Furthermore in economically weak regions subsidies exist to stimulate employers to engage structural unemployed.

The possibilities for reallocation of superfluous workers in the fisheries sector thus can be summarized in public (national or regional) economy stimulating policies and public re-educating or re-employment schemes.

8.2 Potential consequences of a restrictive future CFP

Whatever the restrictions of future CFP, in the long run CFP is aimed at increasing landings. For this report however it is assumed that for the time being landings will generally remain at the present-day level (allowing for variations between species). The task will then be to adjust fisheries input to that level. It is clear that in several cases fleet capacity exceeds the capacity that can be exploited within the framework of those allowable landings using 'customary' numbers of days at sea.

This means that the attention must be focused on the catching sections, aimed at species which are under TAC restrictions. In The Netherlands this concerns notably the trawler and cutter sections. Other fisheries and the aquaculture sector do not figure in this aspect of CFP.

The processing and trade sector in general do not seem to be influenced by CFP given the same landings and consequently the same supplies of raw material. Variations in the allowable landings of individual species will probably be temporary and could be absorbed by the companies' flexibility.

As the effort of the fishing fleet (capacity times days at sea) is adapted to the level of allowable landings by means of individual quota and/or restrictions to the number of days at sea the activities of the ancillary industries are already restricted by CFP. This means that, within the range of the running costs of the catching sector, future supplies by the ancillary industries will not change much. A decrease of the number of vessels could however have effects on supplies within the range of the fixed costs, notably in the ship building sector. There will be no investments any more in expanding the fleet, but on the other side results of the remaining fleet will improve, causing faster replacement of vessels. Supplying aquaculture will not change much, neither supplying the processing and trade sector.

Summarizing the possible effects of a continuation of CFP at present-day landings levels it can then be assumed that:

- a. developments in the trawler section are difficult to oversee as it is hardly known what will happen to the fishing rights outside the EC EEZ;
- b. the number of sea-going cutters will tend to decrease, causing a number of fishermen losing their jobs;
- c. total landings (and proceeds) of the catching sector will remain about the same, leading to higher average incomes of (remaining) fishermen;
- d. the extent and activities of the aquaculture sector will not be affected;
- e. the extent and activities of the processing and trade sector will not be affected;
- f. the activities of the ship building sector could perhaps tend to decrease, but this will be counteracted at least partly by faster replacement;
- g. the extent and activities of the other ancillary industries will not be affected;
- h. based on the assumption of generally constant landings and sales the total Netherlands economy will not be affected, apart from the problem of the reallocation of jobless workers and/or transfer of income to this group.

For the cutter section an approximation must be made of the part of the fleet that will cease activities. Compulsory decommissioning does not come up for discussion. Then it must be expected that vessels with unsatisfactory financial results will fall out. This will concern vessels of which the individual fishing rights will not meet the proceeds needed to break even. On the basis of the existing division of these rights among the cutters a break even calculation is made for each vessel, taking into account the size of the vessel and consequently its cost structure. Resulting from this calculation a group of some 32 vessels (total crew about 140) is isolated, for which proceeds are expected not to meet the break even level. In table XXXVI the division of that group of vessels is shown in the zones concerned.

As can be seen the major part is situated in high impact zones. Relatively the "Ymond" zone scores the highest, but in numbers the "Flevoland" zone (Urk) and the "Kop van Noordholland" zone (especially Wieringen) stand out. It must be said that in the zones with a low fisheries impact in some cases the drop out also can be relatively considerable.

Table XXXVI. Cutter Fisheries 1991
Share of economically weak units by zone

Zone	Vessels			Crew		
	Total	Weak	%	Total	Weak	%
HEAVY IMPACT ZONES:						
40. Flevoland	123	6	5%	712	36	5%
32. Ov. Zeeland	48	3	6%	220	7	3%
20. Ymond	14	2	14%	63	12	19%
29b. Ov.Rijnmond	60	0	0%	328	0	0%
18. Kop N.Holland	125	12	10%	556	48	9%
5. ZW.Friesland	13	1	8%	47	4	9%
OTHER ZONES:						
2. Delfzijl e.o.	10	1	10%	24	4	17%
3. Ov.Groningen	46	2	4%	119	7	6%
4. N.Friesland	32	1	3%	75	4	5%
23b. Omgev.Amsterdam	7	0	0%	26	0	0%
25. Leiden/boll.	25	1	4%	133	4	3%
26. Den Haag	9	2	22%	31	6	19%
31. Zws.Vlaanderen	21	1	5%	78	4	5%
TOTAL REGION	533	32	6%	2412	136	6%

8.3 Proposed actions

The fisheries sector, hit by CFP, nowadays only can rely on public policies dealing with reallocation or transfer of labour and with transfer of income. As in many cases fisheries are concentrated in areas that are economically weak in itself fisheries can make use of special measures, aimed upon these areas. Generally however fishing populations live rather isolated from the other sectors. Therefore it can be assumed that such public policies do not have the desired effect in the fisheries sector.

It may therefore be conceived that a special policy, aimed upon the fisheries sector, will support developments in this sector more adequately. It is then proposed to create a scheme supporting especially fishing vessels' crews during adjustment to a contracted fleet. The scheme should aim at a possible re-allocation of the labour force concerned. As said before problems out of CFP are not to be expected in other sectors of the industry.

Moreover the scheme could be restricted to "high impact zones" to reach the groups of which re-allocation is expected to be the most difficult. As said however in other zones locally such difficult groups are also to be expected in view of the generally isolated position of the fishery population. This consideration should urge caution in a zonewise allocation of the scheme.

ANNEX 1 THE NETHERLANDS; CLASSIFICATION INTO COROP ZONES



ANNEX 2 EMPLOYMENT BY ZONE 1990

ZONE	(MAN-YEARS X 1000)-----					PER CENT-----					
	TOTAL ECONOMY (x1000)	FISHR	CULT	PROCS	ANCIL	TOTAL	FISHR	CULT	PROCS	ANCIL	TOTAL
1 O.Groningen	31	16	0	2	14	33	0.1%	0.0%	0.0%	0.0%	0.1%
2 Delfzijl e.o.	15	22	0	12	21	54	0.1%	0.0%	0.1%	0.1%	0.4%
3 Ov.Groningen	104	122	0	192	125	439	0.1%	0.0%	0.2%	0.1%	0.4%
4 N.Friesland	75	123	6	126	126	381	0.2%	0.0%	0.2%	0.2%	0.5%
5 ZW.Friesland	20	154	4	118	151	426	0.8%	0.0%	0.6%	0.8%	2.1%
6 ZO.Friesland	40	16	0	12	15	43	0.0%	0.0%	0.0%	0.0%	0.1%
7 N.Drente	39	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
8 ZO.Drente	36	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
9 ZW.Drente	32	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
10 N.Overijssel	89	24	0	0	21	45	0.0%	0.0%	0.0%	0.0%	0.1%
11 ZW.Overijssel	38	0	0	1	0	1	0.0%	0.0%	0.0%	0.0%	0.0%
12 Twente	149	0	0	86	7	93	0.0%	0.0%	0.1%	0.0%	0.1%
13 Veluwe	176	9	5	42	16	73	0.0%	0.0%	0.0%	0.0%	0.0%
14 Achterhoek	91	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
15 Arnh/Nijmegen	188	0	0	1	0	1	0.0%	0.0%	0.0%	0.0%	0.0%
16 ZW.Gelderland	40	8	0	0	7	15	0.0%	0.0%	0.0%	0.0%	0.0%
17 Utrecht	318	0	0	698	60	758	0.0%	0.0%	0.2%	0.0%	0.2%
40 Flevoland	35	805	4	953	802	2564	2.3%	0.0%	2.7%	2.3%	7.3%
18 Kop N.Holland	77	638	6	269	596	1510	0.8%	0.0%	0.3%	0.8%	2.0%
19 Alkmaar e.o.	48	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
21 Haarlem e.o.	67	0	0	6	1	7	0.0%	0.0%	0.0%	0.0%	0.0%
22 Zaanstreek	38	0	0	4	0	5	0.0%	0.0%	0.0%	0.0%	0.0%
23a Amsterdam	307	0	0	85	7	92	0.0%	0.0%	0.0%	0.0%	0.0%
23b Omg. Amsterdam	131	138	0	419	159	716	0.1%	0.0%	0.3%	0.1%	0.5%
20 IJmond	61	141	0	971	209	1321	0.2%	0.0%	1.6%	0.3%	2.2%
24 Gooi-Vechtstr	73	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
25 Leiden/boll.	99	243	0	494	259	996	0.2%	0.0%	0.5%	0.3%	1.0%
26 Den Haag	254	232	0	411	242	885	0.1%	0.0%	0.2%	0.1%	0.3%
27 Delft/Westl	70	0	0	119	10	129	0.0%	0.0%	0.2%	0.0%	0.2%
28 O.Z-Holland	78	16	4	0	18	38	0.0%	0.0%	0.0%	0.0%	0.0%
29a Rotterdam	385	35	0	130	42	208	0.0%	0.0%	0.0%	0.0%	0.1%
29b Ov.Rijnmond	37	336	0	410	334	1081	0.9%	0.0%	1.1%	0.9%	2.9%
30 ZO.Z-Holland	104	0	0	24	2	26	0.0%	0.0%	0.0%	0.0%	0.0%
33 W.Brabant	162	15	11	82	30	138	0.0%	0.0%	0.1%	0.0%	0.1%
34 M.Brabant	114	0	16	35	17	68	0.0%	0.0%	0.0%	0.0%	0.1%
35a Den Bosch eo	79	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
35b NO.Brabant	75	8	12	40	21	82	0.0%	0.0%	0.1%	0.0%	0.1%
36 ZO.Brabant	201	0	11	34	13	58	0.0%	0.0%	0.0%	0.0%	0.0%
37 N.Limburg	75	0	0	21	2	23	0.0%	0.0%	0.0%	0.0%	0.0%
38 M.Limburg	57	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
39 Z.Limburg	171	0	7	43	10	60	0.0%	0.0%	0.0%	0.0%	0.0%
32 Ov. Zeeland	67	321	337	1014	672	2344	0.5%	0.5%	1.5%	1.0%	3.5%
31 Zws.Vlaand	32	80	8	143	91	322	0.3%	0.0%	0.4%	0.3%	1.0%
TOTAL	4377	3502	431	7000	4100	15033	0.1%	0.0%	0.2%	0.1%	0.3%

ANNEX 3 GROSS VALUE ADDED BY ZONE 1990

ZONE	MILLION ECU-----					PER CENT-----					
	TOTAL ECONOMY	FISHR	CULT	PROCS	ANCIL	TOTAL	FISHR	CULT	PROCS	ANCIL	TOTAL
1 O.Groningen	1470	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
2 Delfzijl e.o.	808	1	0	0	0	2	0.1%	0.0%	0.1%	0.0%	0.2%
3 Ov.Groningen	9161	5	0	24	4	32	0.1%	0.0%	0.3%	0.0%	0.4%
4 N.Friesland	3769	4	1	6	3	13	0.1%	0.0%	0.2%	0.1%	0.3%
5 ZW.Friesland	922	4	0	7	2	14	0.4%	0.0%	0.8%	0.3%	1.5%
6 ZO.Friesland	1982	0	0	0	0	1	0.0%	0.0%	0.0%	0.0%	0.0%
7 N.Drente	1973	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
8 ZO.Drente	2106	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
9 ZW.Drente	1565	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
10 N.Overijssel	4097	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
11 ZW.Overijssel	1772	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
12 Twente	6969	0	0	2	0	2	0.0%	0.0%	0.0%	0.0%	0.0%
13 Veluwe	7523	0	0	2	0	3	0.0%	0.0%	0.0%	0.0%	0.0%
14 Achterhoek	4103	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
15 Arnh/Nijmegen	8422	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
16 ZW.Gelderland	2079	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
17 Utrecht	14025	0	0	32	2	34	0.0%	0.0%	0.2%	0.0%	0.2%
40 Flevoland	1868	59	0	49	30	138	3.2%	0.0%	2.6%	1.6%	7.4%
18 Kop N.Holland	4847	39	1	16	19	75	0.8%	0.0%	0.3%	0.4%	1.5%
19 Alkmaar e.o.	2509	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
21 Haarlem e.o.	3047	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
22 Zaanstreek	1836	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
23a Amsterdam	13751	0	0	2	0	2	0.0%	0.0%	0.0%	0.0%	0.0%
23b Omg.Amsterdam	6676	3	0	31	3	37	0.0%	0.0%	0.5%	0.0%	0.6%
20 IJmond	3130	11	0	73	9	93	0.4%	0.0%	2.3%	0.3%	3.0%
24 Gooi-Vechtstr	3551	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
25 Leiden/boll.	4879	22	0	15	11	48	0.5%	0.0%	0.3%	0.2%	1.0%
26 Den Haag	12329	21	0	30	11	62	0.2%	0.0%	0.2%	0.1%	0.5%
27 Delft/Westl	4094	0	0	4	0	4	0.0%	0.0%	0.1%	0.0%	0.1%
28 O.Z.-Holland	3731	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
29a Rotterdam	20361	3	0	13	2	19	0.0%	0.0%	0.1%	0.0%	0.1%
29b Ov.Rijnmond	2039	24	0	14	12	49	1.2%	0.0%	0.7%	0.6%	2.4%
30 ZO.Z.-Holland	5014	0	0	2	0	2	0.0%	0.0%	0.0%	0.0%	0.0%
33 W.Brabant	8250	1	0	5	1	7	0.0%	0.0%	0.1%	0.0%	0.1%
34 M.Brabant	5248	0	0	0	0	1	0.0%	0.0%	0.0%	0.0%	0.0%
35a Den Bosch eo	3670	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
35b NO.Brabant	3686	0	0	2	0	3	0.0%	0.0%	0.1%	0.0%	0.1%
36 ZO.Brabant	9578	0	0	1	0	1	0.0%	0.0%	0.0%	0.0%	0.0%
37 N.Limburg	3715	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
38 M.Limburg	2838	0	0	0	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
39 Z.Limburg	8095	0	0	1	0	2	0.0%	0.0%	0.0%	0.0%	0.0%
32 Ov. Zeeland	3674	19	38	41	28	125	0.5%	1.0%	1.1%	0.8%	3.4%
31 Zws.Vlaand	1886	4	1	10	3	17	0.2%	0.0%	0.5%	0.1%	0.9%
TOTAL	217048	223	42	383	142	790	0.1%	0.0%	0.2%	0.1%	0.4%

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