European Foundation for the Improvement of Living and Working Conditions

Innovative recruitment strategies in the fisheries sector

The Netherlands

emcc european Monitoring Centre on Change

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Introduction

The aim of this study is to establish an inventory of the various innovative practices and recruitment initiatives that have been implemented in the Dutch fisheries sector in the past 10 years in order to address the problem of lack of manpower.

The fisheries sector in the national economic context

Economic importance of fisheries

Marine fishing is a very small sector within the Dutch economy, with a contribution to GDP of about 0.1%. However, this takes into account the processing sector, which depends as much on imported raw materials as Dutch domestic production. Processing and marketing accounts for about 80% of all employment in the sector, with capture fisheries only accounting for about 15%. The contribution of capture fisheries to the national economy is thus very small: perhaps around 0.02%.

Unlike in many European countries, the sector does not have a higher political profile than would be expected from its limited economic importance. This is because i) there is not as strong a fishing tradition in the Netherlands as in, say, Scandinavia or Spain, ii) fisheries-dependent areas (such as there are) are not particularly socially deprived by EU standards – in any case there is no strong political tradition in the Netherlands of supporting industries perceived to be in decline, iii) fisheries is not seen as contributing to more economically important sectors such as tourism, as in parts of France, and iv) beam trawling in particular has been strongly portrayed in the Dutch media as environmentally damaging.

Employment in fisheries

In 2005 (the latest data available) the fisheries sector employed 2,439 people, giving a contribution of about 0.03% to the total employment of 8,100,000. Employment on board fishing vessels is only important in a few small communities such as Urk in Flevoland, which is the home port of much of the beam trawler fleet.

Even on a regional level, fishing is not very significant economically or in terms of employment. The employment dependence rates of the Dutch NUTS-2 coastal regions are presented in Table 1.

Table 1: *Regional dependence on fishing*

NUTS-2 region	Employment	Dependence rate	Main fishing ports
nl11 Groningen	172	0.1%	
nl12 Friesland	144	0.0%	
nl23 Flevoland	416	0.2%	Urk
nl32 Noord-Holland	647	0.0%	Wieringen, Den Helder, Texel
nl33 Zuid-Holland	743	0.0%	Katwijk, Scheveningen, Goedereede
nl34 Zeeland	424	0.2%	Yerseke, Bruinisse, Arnemuiden

Source: *Dutch government statistics, EUROSTAT*

However, salaries on Dutch fishing vessels compare favourably with average salaries. The average gross salary in the Netherlands in 2005 amounted to about 35,000 euro a year. This may be compared to the average earnings in the beam trawl fleet of about 45,000 euro and about 60,000 euro on board freezer trawlers, while keeping in mind the following differences:

- The average salary does not include employers' contribution to social security.
- Crewmen on board freezer trawlers are employees, but those on board beam trawlers are self-employed. This latter group does not enjoy unemployment benefits and may pay insurance voluntarily for work disability.
- The comparison does not account for differences in skill/education level; deckhands on fishing vessels, particularly in the freezer trawler fleet, are very well paid relative to other jobs requiring low levels of formal education.

Structure of the Dutch fleet

The Dutch fleet is composed of four main sub-groups: small-scale vessels, beam trawlers, freezer trawlers and mussel dredgers. These sub-groups are characterised by different requirements when it comes to recruitment of crews.

Table 2: *Dutch fishing fleet and employment, 2005*

	Small-scale trawlers < 221 kW	Beam trawlers > 221 kW	Freezer trawlers	Mussel dredgers	Total
Number of vessels	220	122	15	64	421
Employment	514	956	560	194	2,224
Crew/vessel	2-3	6-7	37	3	48-51

Source: *LEI, Visserij in cijfers, 2006*

Small vessels <221 kW (or 24 m) target a variety of species, fishing mainly for shrimp, cod and flatfish on relatively short trips with a crew of 2–3 men, frequently owners and close relatives. Beam trawlers >221 kW are specialised in fishing for plaice and sole in the North Sea. These are relatively large vessels, on average about 1400 kW and 38–42 m long, with a crew of 6–7 men, making trips of 4–5 days. The freezer trawlers are in fact factory vessels, mostly over 100 m long, with crew of 35–45 men, fishing for small pelagic species in the EU waters as well as in other parts of the world. The mussel dredgers fish for wild mussel seed, re-laying them on cultivated lots and harvesting full-grown mussels. They are thus involved in a system which is closer to aquaculture than capture fisheries. They do not share the same issues as regards recruitment of crew, and will not be considered further in this report.

Most of the flatfish caught by the beam trawlers are frozen in shore plants, filleted or whole, and exported. Shrimp is usually exported for peeling to Morocco and re-imported for the local market. Small pelagics are frozen on board and traded globally, with little onshore employment spin-off.

Historical trends

Beam trawl fleet

The beam trawl fleet reached its maximum size of 611 vessels and 3,039 crewmen in 1987, and its size has been falling since. The main trends between 1995 and 2005 are presented in Table 3.

Table 3: *Trends in the beam trawl fleet*

	1995	2000	2005
Number of vessels	452	402	342
< 221 kW	239	225	220
> 221 kW	213	177	122
Employment	2,108	1,831	1,470
< 221 kW	695	640	514
> 221 kW	1,413	1,191	956
Value of landings (million euro)	286	290	245
< 221 kW	58	60	79
> 221 kW	228	231	166
Gross value added*/man (000 euro)	41.7	73.3	36.0
< 221 kW	27.3	58.0	51.5
> 221 kW	48.8	81.6	27.7
Crew share/man (000 euro)	41.3	45.6	43.5
< 221 kW	27.3	42.3	
> 221 kW	48.1	47.4	

Source: *LEI, Visserij in cijfers, various issues*
**sum of labour and capita income (profit)*

The main conclusions are:

- Employment has decreased by about 35%. The decrease was most pronounced among the larger vessels > 221 kW.
- Nominal value of landings in 2005 was 14% below 1995 level. In real terms (accounting for inflation) the decline amounts to about 35%.
- Nominal crew share per man on the smaller vessels seems to have improved, while on the larger vessels it has decreased by 13%. However, the deterioration of the gross value added per man indicates that crew earnings have been funded from company reserves.

Overall performance of the fleet has structurally deteriorated due to the significant increase in fuel prices since 2002–2003, as well as due to decreasing fishing opportunities.

Freezer trawl fleet

Less economic information is available for the freezer trawler fleet, but overall, it seems to show a relatively stable performance, without a noticeable downward trend; see Table 4.

Table 4: *Trends in the freezer trawler fleet*

	1995	2000	2005
Number of vessels	12	18	15
Employment	422	600	560
Value of landings (million euro)	75	113	137
Gross value added*/man (000 euro)			65.5
Crew share/man (000 euro)			63.4

Source: *LEI, Visserij in cijfers, various issues*
**sum of labour and capita income (profit)*

Institutional background and social actors

Institutional background

The different sectors within the fisheries operate under different management regimes. The small beam trawlers (< 221 kW) operate within the 12 mile zone, and come under national control. The legislation applicable to the large beam trawlers is derived from the Common Fisheries Policy (CFP) and includes Total Allowable Catches (TAC) and quota policy, structural measures and technical regulations. The freezer trawlers are subject to the CFP and also to EU regulations regarding access to third country waters, the legislation of these coastal states and in some cases of regional fisheries management organisations.

In terms of fisheries, public policy is the responsibility primarily of two ministries:

- The Ministry of Agriculture, Nature Management and Food Safety (MLNV) is responsible for all aspects of the implementation of the Common Fisheries Policy: TACs, licensing, structural funds, technical measures, etc. MLNV is also responsible for agricultural and fisheries schools.
- The Ministry of Transport and Water Works (MVW) is responsible for all aspects of maritime activities and coastal management. In relation to fisheries it covers safety policy, vessel seaworthiness (inspections) and also sets the requirements for nautical education.
- Other ministries are involved with fisheries in specific areas, e.g. the Environment Ministry covers issues related to the NATURA 2000 network and the Bird Directive, the Ministry of Finance has been involved in co-financing EU structural funds and the Ministry of Education is involved in educational aspects of maritime training (as opposed to safety-related aspects, covered by the MVW).

Social actors

Industry is represented on several levels:

- *Productschap Vis* (Dutch Fish Board) is an umbrella organisation, bringing together all professional organisations in the fisheries sector: marine and inland fishing, aquaculture, fish processing, wholesale and retail trade, etc. It promotes the general interests of the sector. The dialogue within DFB is set up in various committees, according to topic – landings, education, shrimp, etc.

Three professional organisations represent the specific interests of the catching sector:

- *Federatie van Visserijverenigingen* (FV), representing in particular the larger beam trawl fleet
- *Nederlandse Vissersbond* (NV), representing the beam trawl and shrimp fleet
- *Redersvereninging*, representing the pelagic freezer trawlers.

FV and NV have downstream local organisations at the level of individual ports.

Dialogue between the ministries and professional organisations takes place on various levels, so that there are direct contacts among all of the above mentioned institutions. The three professional organisations also participate in various committees at the EU level.

SWOT analysis

Strengths:
- Pelagic freezer trawlers profitable and apparently sustainable
- Pelagic fleet flexible in terms of geographical focus and target stocks
- Relatively high wages relative to Dutch average, particularly for those with low education
- Good conditions on board relative to EU average

Weaknesses:
- Dependence of beam trawler fleet on declining white fish stocks, CFP quotas
- Limited political support for industry (relative to some other EU countries)

Opportunities:
- Increased international mobility for officers (see below)

Threats:
- Opposition by strong green movement in the Netherlands
- Dependence on international fishing agreements for pelagic trawlers
- Increasing fuel prices
- Exchange rate of euro and dollar affects ability to export product

Recruitment challenge in the Netherlands

General outlook

After a period of recession, the Dutch economy has grown dynamically in 2005 and 2006, and the country has among the lowest unemployment rates in the EU, according to EU figures (June 2006). Demand for labour in general has been increasing along with salaries. On the other hand, as already indicated above, the situation in the beam trawl fleet is one of serious crisis, without any 'light at the end of the tunnel'. Unless the fuel price structurally decreases by at least 30%, the medium term (2–5 years) outlook for this fleet is bleak. Technological shifts require time and financial resources.

However, financial reserves have been largely depleted and it is uncertain to what extent the banks will be willing to provide additional credit lines.

An additional problem is the level of earnings and social security (lack of pension arrangements) offered in the sector. A survey by the Dutch Fish Board carried out in 2001[1] already shows that these are the main reasons why experienced crews (aged 26–35) shift to alternative jobs. Other reasons given are inconvenient working time (e.g. vessels leaving on Sunday evening).

Beam trawl fleet

Overview

The Dutch beam trawl fleet is characterised by skipper ownership. This means that the owner(s) of the vessel are also actively working on-board. It is also not unusual for other family members (sons, brothers, etc.) to be included in the crew. It is estimated that each vessel is owned by about 1.3 owners (i.e. that the majority have only one owner – usually the skipper – but a significant minority have more than one owner). From a total onboard workforce of around 1,400, about 400 are owners or part-owners and about 1,000 are hired crewmen.

If we assume that on average hired crewmen remain working in fishing for around 15 years, the annual recruitment required to maintain the pool of hired crewmen at this level would be 1,000 divided by 15; or about 67 men per year. If, however, the present rate of decrease in the size of the fleet persists, in 10 years' time this will drop to about 40 new men per year.

Table 5: *Estimation of the number of recruited crewmen, beam trawlers*

	Owners per vessel	Total owners	Recruited crew	Total crew
< 221 kW	1.2	218	443	661
> 221 kW	1.5	209	600	809
Total		427	1,043	1,470

Source: *Estimate based on private communication from LEI.*

Despite the very substantial decrease in the size of the fleet and consequently employment opportunities, many vessels have been facing crew shortage problems for many years. The attitude towards working on-board has not been researched structurally but the following factors undoubtedly play a role:

- A survey carried out by the Dutch Fish Board indicates that 90% of all fishermen come from fishing families. This implies that the labour source is becoming increasingly limited.
- The general perception of fishing in society is not positive, due to publicity about negative environmental effects and depletion of fish stocks.
- The income difference from other occupations on shore has become smaller.
- Mobility has increased, allowing people from traditional fishing communities to commute to work somewhere else.

[1] Ronke Luns, Crew Survey, Final Report, Productschap Vis, 2001

- The general 'mood' among active fishermen and vessel owners is becoming pessimistic due to continuing deterioration of economic performance, decreasing quota and, recently, very high fuel prices. There are no easy solutions to the present problems in the beam trawl fleet.
- Traditional fishing schools have been integrated into much larger educational centres or marine colleges. Consequently, students gain a broader view of possibilities, within which fishing may not be the most attractive.

Educational requirements

According to Dutch law, fishing vessels must be crewed with a certain minimum number of crewmen with specific educational requirements for skippers or mates (SW4 diploma) and engineers (SW5 diploma). The minimum crewing requirements on the basis of the fleet size at the end of 2005 are presented in Table 6.

Table 6: *Crew requirements per educational level, fleet 31.12.2005*

Vessel size length (m)	kW	Area	Fleet 2005	Crew/vessel req.			Crew required			
				SW4	SW5	None	SW4	SW5	None	Total
<24	<750	1	64	2		1	128	0	64	192
<24	<750	all	163	2		2	326	0	326	652
24-45	750-1,125	all	20	2	1	2	40	20	40	100
24-45	1,125-3,000	all	102	2	1	3	204	102	306	612
Total crew							698	122	736	**1,556**

Source: *estimate based on formal crewing requirements and fleet composition on the basis of LEI 'Visserij in Cijfers'.*

While the total crew should have been 1,556 men, only 1,470 were estimated by LEI to be on-board. This difference of 5% may partly illustrate lack of crews and partly be a consequence of error in estimates.

From the comparison between Tables 5 and 6, however, it is apparent that the skipper-owners already represent about half of the required crew with diplomas and only about 400 would need to be hired. Conversely, a high demand exists for crews without any specialised education.

Future outlook

It is expected that in 2007–2009 the size of the beam trawl fleet will further decrease, due to withdrawal of mainly the larger vessels which depend most on hired crews. It is generally expected that the TACs for sole and plaice will be reduced annually by 10–15% to allow stocks to recover. Some industry representatives expect that the fleet will be reduced by as much as 35–45% in this period. This will reduce the demand for crews by at least this percentage, and similarly the demand for fisheries training.

By 2005 the nominal earnings per crewman were 12% lower than in 2001 (about 18% in real terms). With the increase in fuel price in 2006 the situation has further deteriorated. The drop in earnings along with the bleak outlook will also act as an incentive for crew members to look for work outside fishing. Ex-fishermen, being able and willing to do hard physical and irregular work, have proved to have good working opportunities in other sectors. The labour situation is therefore structurally extremely difficult for the industry.

It can also be expected that owners of beam trawlers will be obliged to hire foreign crews, partly due to the lack of Dutch fishermen but possibly also to cut labour costs. This has already occurred, but outcomes have not been convincingly positive yet.

An additional factor that may play some role concerns Dutch-owned beam trawlers under foreign flags (UK, Belgium, Germany). Should a number of these vessels stop operating, a small number of crewmen might become available to sail under the Dutch flag again. In any case, it is unlikely that the number of these 'flag-vessels' will increase.

Freezer trawler fleet

The freezer trawler fleet is presently operated by three companies and the entire crew is hired (i.e. unlike the beam trawlers, no one working on board is an owner). There are around 15 vessels (2005 figures, see above) with a mean crew requirement of around 40, meaning that a total crew pool of around 600 people is needed for this fleet.

No precise figures are available on the composition of crew, which in any case probably alters from trip to trip. However, anecdotal information, from discussions with two vessel owners, suggests that a significant percentage of the deckhands are foreigners from a variety of countries, both inside and outside the EU (e.g. Russia).

The economic outlook for freezer trawlers seems better than for beam trawlers, for various reasons: they have greater flexibility in the stocks that they target, which are generally less over-exploited and less vulnerable to collapse, legislation etc. However, they are facing threats such as high fuel costs and the strong exchange rate of the euro against the dollar, which significantly affects their performance. However, the earnings on board are still very good and the nature of the work is more suitable for hiring foreign crews almost worldwide. Therefore, recruitment difficulties for crew arise for this fleet for broadly different reasons than for the beam trawl fleet; while the general perception of fishing as a difficult and unpleasant job remains, there is no issue of declining wages. However, balanced against that is the problem of hiring crew for the longer trips made by these vessels, which makes family life difficult. This may be particularly the case for officers, who require extensive training, and who, unlike in the beam trawl fleet, do not have an ownership stake in the vessel.

Inventory of innovative recruitment initiatives

Given that fisheries recruitment initiatives in the Netherlands have been limited, this study has not selected specific case studies, but rather has analysed the whole spectrum of initiatives in as much depth as data permits.

Fisheries schools

Fisheries education and training is presently provided at six locations:

- Berechja College Middelbaar Nautisch Onderwijs, Urk
- ROC 'Zeeland',Vlissingen
- Maritieme Academie NOVA College, IJmuiden
- ROC 'Kop van Noord Holland', Den Helder

Scheepvaart en Transport College (STC):

- STC, Stellendam
- Visserijschool, Katwijk

With the exception of Urk and STC, most of the 'fisheries schools' are parts of very large educational centres, with 3–10,000 students, offering a broad spectrum of practical and professional education for students from the age of 12.

They usually have an 'educational cluster' on maritime and nautical topics and fishing is placed within this cluster. Berechja and STC are specialised in maritime topics, although not in fisheries specifically.

Table 7: *Number of students following fisheries education*

1980	1990	1995	2000	2004	2005	2006
321	210	245	238	277	245	211

Source: *Productschap Vis*

Table 7 shows that over the past 25 years the number of students following fisheries education has been fluctuating. Approximately a quarter of these students graduate from the schools annually and can take up a job on-board[2], i.e. 50–70 students. If the total fleet requires about 800 skilled crewmen, the complete turn-around is about 16 years. This would mean that, entering the fleet at the age of 18, the crew member needs to stay on-board till about the age of 35. However, many leave before this, as indicated above. This brief calculation shows that a solution to lack of skilled crew cannot be arrived at simply by more attention to education. It is at least as important to create conditions where the crewmen stay on-board longer and do not shift to other occupations. However, this is a very difficult task under the present economic conditions. A final point is that the number of graduates required annually for the fishing fleet is very low to justify special public funding for extensive special recruitment activities.

Fisheries Education Committee of the Dutch Fish Board

Representatives of the schools, along with representatives of employers, unions and the several ministries form a 'Fisheries Education Committee' within the Dutch Fish Board. The committee meets 3–6 times per year to discuss and coordinate matters of common interest:

Educational profiles (what the profession needs and how this can be met by the schools, including, for example, technological innovations)

- Educational materials
- Promotion activities and materials
- Exchange of experience and coordination of school initiatives

The committee has an annual budget of about 100,000 euro at its disposal. The budget is funded through a special levy on the fishing sector, collected by the Dutch Fish Board.

Three ministries are in principle involved with fisheries education:

- *Verkeer en Waterstaat* (VWS, Transport and Waterworks) – regarding nautical matters, safety at sea, etc.
- Ministry of Education, regarding educational matters
- Ministry of Agriculture, regarding fisheries educational issues. This ministry is also responsible for agricultural education

[2] The quarter is derived as follows: about 30% do not finish school, either dropping out altogether or shifting to another type of training. This leaves around 70% who finish. The average duration of education is about 3 years (SW6 – 2 years, SW5 – 3 years and SW4 – 4 years), so every year roughly one third of this 70% graduates from schools; i.e. about 23%, or roughly a quarter.

The Ministry of Agriculture was traditionally the most important for fisheries education. However, the officer responsible for this dossier left his post several years ago and the dossier was not delegated to anybody else.

The Dutch Fish Board (DFB) has developed a flyer about fisheries education (an investment of 14,000 euro). DFB is present at schools' open days, fishing port days and other public occasions to distribute information about the Dutch fishing sector and to promote fisheries education.

Foundation 'Nederland Maritiem Land'

Overview

The Foundation 'Nederland Maritiem Land' (NML) was founded in 1997 with funding from the Ministry of Transport, the Ministry of Economic Affairs and the various participating organisations (see below). The objective of NML is to promote and strengthen the Dutch maritime cluster. This includes fisheries in principle, but in reality fisheries has been a very peripheral topic for NML, whose main focus is strongly on maritime transport and the ports sector (where, of course, the Netherlands is a very important global player). Within the maritime sector, NML focuses its activities in four main areas: communication, export, innovation and the labour market (including training). It is clearly this latter area of activity in which we are interested in this report.

The organisations participating in NML are:

- Amsterdam Ports Association, website **http://www.amports.nl**
- BMOC – Brancheorganisatie Maritiem Onderzoek en Consultancy
- CBRB – Centraal Bureau voor de Rijn en Binnenvaart, website **http://www.cbrb.nl**
- Deltalinqs, havenwerkgevers Rotterdam, website **http://www.deltalinqs.nl**
- Gemeentelijk Havenbedrijf Amsterdam, website **http://www.portofamsterdam.com**
- Havenbedrijf Rotterdam, website **http://www.portofrotterdam.com**
- Hiswa Vereniging, website **http://www.hiswa.nl**
- HME – Holland Marine Equipment, Maritieme Toeleveranciers, website **http://www.hme.nl**
- IRO – Branchevereniging voor de Nederlandse Toeleveranciers in de Olie- en Gasindustrie, website **http://www.iro.nl**
- KVNR – Koninklijke Vereniging van Nederlandse Reders, website **http://www.kvnr.nl**
- Productschap Vis (Dutch Fish Board), website **http://www.pvis.nl**
- VBKO – Vereniging van Waterbouwers in Bagger-, Kust- en Oeverwerken, website **http://www.vbko.nl**
- VNSI – Vereniging Nederlandse Scheepsbouw Industrie, website **http://www.vnsi.nl**

Note that the only fisheries-related partner in NML is the Dutch Fish Board. Nearly all the other partners are operators in the ports and maritime transport industry, including the operators of the major Dutch ports, Dutch shipping companies etc.

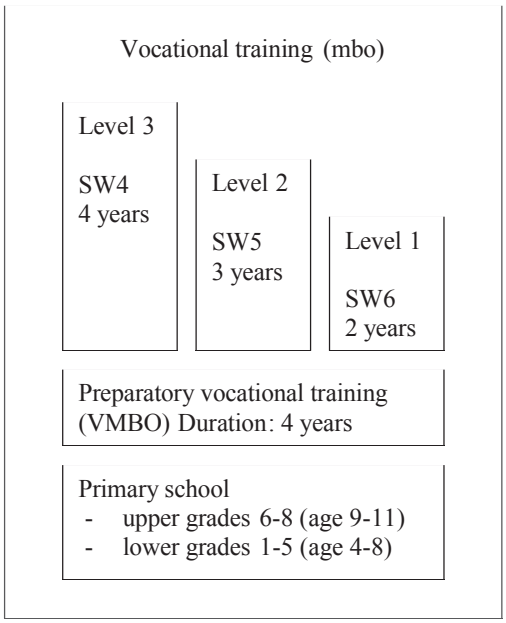
On a daily basis NML is run by a small office (one director and three assistants). Decisions are taken by the 'Board', which is composed of leading individuals in the maritime sector. NML is also advised via a 'directors' dialogue': a larger advisory committee composed of the directors of the above organisations, which meets less often than the Board.

Maritime education by NML

The Foundation's budget to promote maritime education amounts to about 130,000 euro, of which 50% is contributed by the participating organisations and 50% comes from the NML's ongoing budget.

NML education programmes focus on schoolchildren, with specific actions targeting different educational levels. In order to clarify the key educational stages which provide a focus for the programme, Figure 1 presents the general structure of the Dutch educational system.

Figure 1: *Primary and vocational training in the Netherlands*



The initiatives taken by NML are strongly embedded within the broader vocational education system. NLM identified specific areas relevant to maritime occupations and developed educational support programmes, aimed particularly at promotion of the image of the maritime sector as a dynamic and exciting place to work. The NML initiatives focus on two groups; upper grade primary (ages 9–11) and lower grade vocational training VMBO (ages 12–14). Three such initiatives have been set up:

a. Water, men and work

b. Work@water

c. Sparkling education

Primary School: 'Water, men and work'

For primary school age children, NML has produced a set of educational TV (video) programmes with the overall title 'Water, men and work'. The programmes are as follows:

Programme 1: Netherlands and the sea; the fight against water

Programme 2: The port of Europe; unloading and loading

Programme 3: Rivers: transport and recreation, Rhine: a European river

Programme 4: Above the sea bottom, the sea as food source

The last of the four programmes thus focuses on the fishing industry, providing general information about Dutch fisheries, how fishing works, how fish products get from sea to plate etc. It is clearly not really possible to assess the role of interventions at this stage in promoting recruitment to the industry down the line, and in any case the initiative has only been going a few years, so that the first class shown the programmes are not yet old enough to recruit as crew.

Secondary school (VMBO and MBO): Work@water

Within the VMBO there is an increasing focus on practical education, which replaces part of the classic classroom lessons. Since the year 2000 the subject 'practical sector orientation' has been introduced to offer students a practical look at different businesses and industrial activities. Work@water has been developed within the 'practical sector orientation'.

Work@water is again a school package composed of video, interactive CD-ROM, practical work cards and a guide for teachers. There are four versions of the package: i) General, ii) Royal Navy, iii) Education and iv) Port of Rotterdam. Topics addressed include i) overview of maritime activities, ii) ports, iii) fishing, iv) Royal Navy and v) inland water transport.

The CD-ROM is the starting point of the package. The students can work with it individually or in pairs to gain knowledge and understanding of the maritime sector. They learn by spoken word, so that they do not have to read very much.

The CD-ROM contains 15 short videos on different topics, each lasting 5–8 minutes. These fragments are very informative, but also adapted to the language and experience level of the target group. Once the video is finished, the students play a digital game, in which they use the information acquired. (The system is also available as a video, without the game element.)

The videos deal with the following topics:

- The various sectors of the maritime industry
- Different types of vessels used in maritime work
- Different types of occupations available in the maritime sector
- Ports and their transport function
- Ports and their services
- Ports, tourists and passengers
- Fisheries in all its forms
- Fishing and associated jobs
- Fisheries catches
- The work of the Royal Navy
- Royal Navy and military occupations

- Royal Navy supporting services
- River transport and the work on-board
- Ships used for river transport
- Different types of work available in river transport

Finally, using the cards the students are guided to carry out practical tasks. The cards indicate what they need, what they should make and how it can be used. The cards and their contents are set on the following principles:

- The students can take the cards home
- The costs of materials needed are low
- Tasks can be completed during one lesson
- Tasks are related to information presented in the lessons
- The tasks train in specific abilities

The teacher information pack includes a list of websites with further information on the maritime sector.

Work@water covers the whole maritime sector, and again puts the emphasis mainly on ports and transport. However, it does have some focus on fisheries, as can be seen above (three out of the 15 videos relate to fisheries, and one specifically relates to employment possibilities in fisheries). Again, however, it is very difficult to assess from this type of general programme whether there has been any direct impact on recruitment to the sector per se.

General information for schools: Sparkling education ('http://www.spetterendeopledingen.nl')
The 'Sparkling education' campaign is aimed at improving the image of the maritime sector to school children through a website, posters, 'boomerang' cards (distributed in cinemas), articles and advertising in newspapers for schools. An exhibition stand 'Spetterend paviljoen' (sparkling stand) has been developed and is used at various occasions to promote maritime education, for example at maritime-related trade fairs, port days, school open days, etc. Again, the main focus is on ports and transport and fisheries is only a small component.

Evaluation of NML education programme
Both Work@water and 'Sparkling education' are both in the early stages of implementation, with a test phase run in 2004, followed by an evaluation. So in the case of Work@water, the children initially exposed to the programme are only just coming to the stage of starting careers, meaning that the results of the programme are not yet clear. More generally, it is very difficult to evaluate these rather generic promotion activities in a specific fisheries context, particularly given that fisheries was not the main focus of either programme.

However, some conclusions can be drawn. Teachers have been positive about the educational material supplied in Work@water, since it is perceived to be generally educational rather than 'promotional'. However, the impression within NML has been that the website 'Sparkling education' was not effective, with a limited number of hits, and few of the visitors spending much time looking at it. It has been decided, therefore, to approach the students more directly. The MBO schools have often had close relations to VMBO schools, from where most of their entrants come (so called 'feeder schools'). The MBO schools have therefore appointed one staff member who visits the VMBO schools personally, gives presentations about maritime employment and organises visits to fish auctions, ports and maritime companies. Such a direct approach appears to work better in interesting lower secondary level students in the maritime industry. However,

it is too early to tell whether the apparent success of this direct approach at the early secondary phase will feed through into greater interest in the industry (including fisheries) at the point of career choice.

Other educational initiatives

Competence profiles

The VMBO and MBO education in the Netherlands is presently being developed on the basis of so-called 'competence profiles'. These are combinations of knowledge, abilities and attitude. This innovation was introduced in 2005 on an experimental basis in a selected number of schools and the first experiences are presently being evaluated. A recent discussion in the press offers a rather mixed picture, because it is not always equally clear to the schools what they are expected to 'deliver'.

As regards fisheries, the Berechja College in Urk has also introduced this competence education. The new approach stresses practical abilities and contains a short period of practical work: working on board the fishing vessels. The first impression is that the graduates are able to integrate more quickly with the crew as they have had some experience before. So this approach has the potential to produce better trained crew, who might therefore spend longer working in the industry rather than leaving to find employment elsewhere (as often happens at present). This however is speculation; again this is a new approach so no assessment of its consequences down the line is possible at present.

Contract education

The schools also offer contract education, which is given in the evenings or during the weekends for those who cannot attend regular classes. The contract education is paid for either by the employer or the beneficiary. It is usually followed by people who need or wish to upgrade their diploma from SW5 to SW4. The schools accommodate their clients in terms of timing of the lessons and speed of education. It has been primarily used by the owners of the freezer trawlers to upgrade the level of their officers. Again, this may in the long run have the effect of keeping workers within the sector, but is unlikely to play any role in recruiting new employees.

International labour mobility: STCW-F

The International Maritime Organization (IMO) has set up an internationally recognised system of maritime diplomas: STCW (Standards for Training, Certification and Watchkeeping) to accommodate the merchant marine and allow officers who graduated from marine institutes in various countries to be employed on vessels of different flag nations.

A specific standard for fisheries (STCW-F) has also been designed, but so far has only been ratified by six countries (Denmark, Norway, Faeroe Islands, Russia, Ukraine and Syria). The Dutch diplomas are consistent with the STCW-F requirements. Representatives of the Dutch fishing industry are convinced that broader ratification of the STCW-F standard in the European Union would be beneficial to the European fisheries labour market. Although evident barriers exist (e.g. language) it would probably increase the flexibility of businesses in employing foreigners in a sector which already operates in a very international way. It is not clear why the Dutch government has not ratified the standard; probably simply because the fisheries sector does not enjoy a particularly high political profile. In any case, it would probably be more efficient to address this issue at EU level.

Conclusions

The recruitment challenge in the Dutch fisheries sector arises mainly in two key sub-sectors: beam trawlers and pelagic freezer trawlers. The crewing problem is particularly acute for the larger beam trawlers. However, this fleet has been decreasing in size for the past 20 years and its medium-term economic outlook is rather poor. Incomes have fallen substantially in the past two years. The sector is not successful at attracting in new recruits, and about 90% of those

working on board beam trawlers come from fishing families. It does not seem likely that the various initiatives outlined above will alter this picture significantly.

Freezer trawlers have larger crew needs per vessel than beam trawlers (although they have fewer vessels and thus a smaller total crew pool). This fleet is economically a lot more prosperous and profitable, with a good long-term outlook (subject to some challenges such as fuel prices and international exchange rates). So recruitment difficulties are to some extent offset by the good wages on offer, although long duration trips are not always attractive. The freezer trawlers are partly crewed by foreigners, and this pool of labour can potentially be exploited further in the future. However, difficulties with the comparability of different national qualifications remain a barrier at present, at least for officers. From the point of view of supporting this fleet, it would be desirable to promote an EU-wide ratification of the STCW-F standard to allow greater labour mobility in the EU fisheries labour market.

Fisheries education is offered at six locations, mostly within large educational centres. In recent years the focus has moved towards a more practical type of education, including periods on board fishing vessels. However, it is too early to say what effect this will have as regards maintaining trained crew in the industry. Conditions on board the vessels and wages are more likely to be key factors.

In the past 10 years there have been no specific initiatives in the Netherlands to promote fisheries education, except the flyer published by the Dutch Fish Board on fisheries education, which is distributed by DFB at various public occasions. The Foundation 'Netherlands Maritime Land' (NML) has taken several initiatives to promote education in maritime areas generally; however, these are not specific to fisheries, nor is fisheries an important component; the emphasis is strongly on maritime transport and ports. However, the Dutch Fish Board participates actively within NML and all the NML packages contain sections on fisheries. The programme with the strongest fisheries emphasis (although still not particularly strong) is Work@water, which is aimed at 12–14 year olds. This programme started in 2004, and therefore it is still too early for its impact on fisheries recruitment (if any) to be assessed.

Bibliography

- Visserijjaarboek, Visserijnieuws, 2006
- LEI, Visserij in Cijfers (Fisheries in Figures), various issues
- E. Hoefnagel, Educational needs in fisheries, LEI, 1997
- LEI/Framian, Employment in the fisheries sector: current situation, study for DG Fish, 2006
- R. Luns, Crew survey, final report, DFN 2001
- Law on crewing requirements, Besluit Zeevisvaartbemanning, Official Journal 2002
- Various Reports of NML
- Regional economic studies, EU
- Future needs of fisheries education, LEI, 1996
- NML – **http://forum.dutch-maritime-network.nl/**
- DFB – **http://www.pvis.nl**
- Ministry of Education Annual Summaries 2004–2006

List of interviewees

- Ronke Luns, Dutch Fish Board, secretary of the Education Commission, strongly involved in planning for NML education programmes; three interviews on 20/12/06, 12/1/07 and 20/1/07
- Henk Demkes, DFB, 18/12/06
- Cor Blonk, DFB, 21/12/06
- Kees Taal, LEI, 11/1/07 and 18/1/07

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