Creating space for fishermen’s livelihoods: Anlo-Ewe beach seine fishermen’s negotiations for livelihood space within multiple governance structures in Ghana
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The fishing activity and vulnerability

A net owner in Akosua Village: ‘I say: “a cow is chained to a tree”. You have fifteen children but no property. How many children can you actually take care of? Now that you are not able to cater for these children – and other people – to your responsibility; if you die, and the children do not come to your funeral, would you like it? Would you blame the children? We at the coast never want our children to go to school. We rather want them to inherit our nets. Most of us fishermen don’t think. We spend money just by heart because we think the fish is always at sea.’ (Anthony’s notes, 22-11-2005)

Introduction

In Chapter 1, I explained how important beach seining is for the Ghanaian fishing sector. In this chapter I discuss in more detail how fishing currently takes place in Ghana. We then look at the catches, the returns and at how that is shared in the research locations. It will become clear that income from fishing is important for Anlo-Ewe beach seine fishermen as they are quite specialised and do not have many other income-generating activities. When discussing fishermen’s income it is important to differentiate between net owners and crew. Fishing generates more than only income for fishermen and their communities and this is also examined in more detail. At the end of this chapter we discuss how the vulnerability context impacts, or can impact, on the livelihoods of Anlo-Ewe fishermen. The case of algae abundance in Half Assini, which mostly affects the migrant beach seine fishermen, serves as an example. The link is made with the much cited idea of ‘alternative livelihoods’ and in this chapter I will discuss how these programmes fail.

The fishing activity

Crossing the surf

A beach seine is called such because it is operated from the shore. However, before it can be hauled in, it has to be cast. Before it can be cast, the canoe has to conquer the surf! That is a true challenge especially if there is no outboard motor.¹ The crew first has to manoeuvre the heavy canoe in the water, which is even more difficult with a heavily eroded beach like the one in Woe where the canoe needs to be tilted over a steep

¹ In 2001, 52 percent of the canoes were motorised (Bannerman, Koranteng & Yeboah 2001).
slope. Once in the water (which in Woe is then also quite deep) it is crucial to keep the prow of the canoe facing the waves so that the waves do not cause the canoe to capsize. The crew needs to choose the moment to go carefully (between two major rollers), since the incessant waves constitute a continuous threat as far as capsizing is concerned. On the other hand they must not wait too long once the canoe is in the water. Every wave that hits the canoe will cause it take on water, making it heavier and more difficult to launch. Once the crew has decided to go, people on the beach will keep an eye on them until they have passed the surf. The reading of the surf is a critical skill that crew members need to posses and I have seen more than one canoe capsize because of a misjudgement. A capsizing canoe is dangerous and the crew needs to be able to get out of the way quickly and avoid being hit by the canoe, or being swept under the net. If this happens everyone on the beach comes to its aid and pulls all the men and equipment onto land again. It is an impressive sight to see the paddlers putting every effort into ensuring that the canoe moves forwards, or to hear the roaring sound of the motor, and the canoe being hit again and again by the incoming waves.

*Figure 4.1 Crossing the surf with a canoe in Akosua Village*

* Casting the net
Net casting is the next critical part of the operation. The fishermen will have to ‘read the sea’ before they can go. If the sea is not too rough, they will need to detect where the current is coming from, from the east (adau) or from the west (aafitu). If the current is coming from the east, the canoe will head eastwards to set the net in such a way that the fish (swimming counter-current wise) will swim into the net (see Figure 4.2). The canoe starts at point A and follows the arrows moving against the current. This is done so that the net is cast in such a way that the fish, also swimming against the current, swim into the net (C). Before the net is cast, the first rope is let out of the boat and brought to the shore by a swimmer (B). After casting, the canoe either returns to the shore with the crew from where the second rope will start to be pulled, or – as depicted in the figure (at D) – all the crew except one or two will jump out of the canoe to swim through the surf to the coast. The boat then returns (E) to the sac of the net.
The net is cast against the current (coming from the East in this image) whereby the fish, swimming against the current, can swim into the net before it is drawn towards the coast and closed.

Source: author

The net is cast in a slightly bent curve (see Figure 4.3) (A) which is arched a little later by first hauling in the left rope (B). Finally, both ropes are pulled simultaneously and sometimes alternately and the net is dragged to the shore (C) leaving the enclosed fish no other option than to swim into the cod end.

Determining where the current comes from is not always easy. If the situation is unclear the fishermen sail out to sea and cast a few metres of net to see how it moves in the water. Once they have determined where the current comes from, they collect the net and go to where they think it should be cast (depending also on their knowledge of the ocean floor).

In some case the current changes after the net has been cast. The net owner will then decide to collect the net from the sea and recast it. This is an awful job because hauling the net back into the canoe is heavy and frustrating work for the fishermen and if an outboard motor is used the costs of the fishing expedition are almost doubled! The alternative is to leave the net in the sea but this will probably lead to a bad catch and cause the net to be dragged to undesirable locations, such as shipwrecks or rocks (such as happened to a net owner in Akosua Village, see Chapter 3). Companies in Woe and elsewhere also tried to figure out how fast the current would bring the net back so that net shoring could take place right in front of the net owner’s house.

The ropes of different nets often cross each other with one then being raised to allow the other to pass underneath. This precarious operation (because of the possibility of conflicts if something goes wrong) is always supervised by net owner or bozu (18-8-
Figure 4.3 Setting the beach seine and hauling it in

In this figure the net has been set in the opposite direction to that shown in Figure 4.2, with the current coming from the West.
Source: Kraan 2006.

2004, Notebook 13, excursion Mr Dawu). Sometimes more rope is added when the net is in the water. One of the crew members will then swim to the canoe in sea (as it happens in Woe) and will connect the rope there (18-8-2004, Notebook 13, excursion Mr Dawu).

The canoe crew consists of about six paddlers, one to four swimmers and the oarsman. If a canoe is motorised there will also be a motorman. Once the canoe arrives at the spot where the net is to be cast (and the first ropes are already out), the paddlers will allow the net to glide overboard starting at the back of the canoe and moving towards the front. Three buoys are also put in the water, tied to the ends of the net and to the cod end. Once the net has been cast, the canoe will turn back to the coast and feed the second rope into the water. The canoe will bring the second rope back to the shore or alternatively will return near the shore from where all but two crew members will dive overboard bringing the second rope back to the coast. The latter is the way things are often done in Woe, where the canoe returns to the sac and remains there where it can lift the net at the end to prevent it going into the mud (fieldwork data, notebook 13 excursion Mr Dawu). If a canoe is motorised, three men will cast the net. The procedure takes a lot less time than when paddlers are used and it is crucial that the net and ropes are let out smoothly and do not tear or get stuck. The fishermen often sing when they paddle out, which is when they have to paddle the hardest. The song on the way out is more of a rhythmic sound game. When they return the singing is usually beautiful, energetic and in four harmonies!
**Dragging**

The first rope to be brought shore will often be tied to a coconut tree, whilst everyone waits for the second rope to be brought in. The real pulling begins with the second rope coming ashore. That rope is hauled in with more force so that net becomes arched. The fact that the net moves, from east to west if there is an eastern current, means the crew will move accordingly. Some companies do not have enough men and will switch between the two ropes. Once their sac is almost landed, they have to make sure there are enough helpers to pull the two lines at the same time. One bozu of such a company complained to me that his catches would be better if he had more men (Fieldwork notes 7-11-2005). A large net may need almost thirty or forty people pulling on each side.

*Figure 4.4  Company at work*

The two groups will gradually walk towards each other while pulling. This can take three to seven hours, depending on the number of ropes used (which also depends on the size of the net). A lot of crew members have a piece of cloth that they wind round the (wet) rope to protect their hands. When they pull you see their bodies hanging back as they put their entire weight into the pulling. Sometimes people choose to sit during pulling, either because they are tired or because of the strong pull of the sea. Women also help with pulling, often taking their places towards the back. The people pulling on the beach also sing, sometimes to the accompaniment of whistles or percussion (on a piece of bamboo). There is always a soloist\(^2\) who takes the lead while the rest of the crew sing the chorus. The songs are songs the people already know or sometimes songs

\(^2\) He will also get paid extra for this important task.
that are made up on the spot. I have heard songs being sung about the Ghana Com-
mercial Bank or with lyrics as ‘sing or your mouth will smell’ or ‘yevudor – did your
mother give birth to me?’ The rhythm of sounds is copied in the rhythm of the bodies.
Some crews almost seem to be dancing.

Figure 4.5  Percussion players in Woe

Before the cod end reaches the surf a couple of company members will enter the sea to
tie the net to the ropes to make the pulling easier. These men also chase fish that attempt
to flee towards the cod end and often lift the net out of the water onto their shoulders to
prevent the net from becoming stuck in the sand and to make the pulling easier. Once
the net starts coming in, it is spread out in the sand to dry. The fact that companies move
over the beach means they leave a track of drying net on the beach. Once the cod end
lands, the net will be collected by the crew and brought to the house of the net owner or
restacked in the canoe. Sometimes they are kept in little palm front shelters on the beach
(seen in Adina, Ketu district, and in Togo and Benin).

Although pulling the rope in seems to be quite a simple and straightforward job, a lot
of things can go wrong. The ropes can break or knots between two ropes can loosen,
resulting in the pulling crew falling into the sand and in the swimmers immediately
diving into the water to find the lose end in the sea and another to bring new rope to
attach to it again. A muddy ocean floor can also cause problems if the net sinks and gets
stuck. These areas are avoided where possible but sometimes the current is misjudged or
changes during the course of the expedition. The net can also be hindered by another
company’s net. This is a frequent problem and results in conflicts between the two com-
panies (see Chapter 7).

The last part of the dragging is the crucial part because the net has to hang properly
without fish being able to escape. A couple of men will be in the water to make sure this
is the case and to move the fish towards the cod end. The two wings also need to cross
each other, whereby the left net is moved to the right, thereby crossing the right net
which is moved to the left. The two wings will then be put together and hauled in as
one. The two groups of people pulling on each side of the net have now come together.
The cod end is dragged up onto the beach where it is left for a bit while the fish die. Some crew will start collecting the net while others, including a lot of women and children, will then empty the cod end and sort the fish and remove the garbage. After that the sharing and selling can start.

Catches, returns and sharing

Beach seine fishing is a business, and seldom done only for subsistence or because of a lack of alternatives (as has been suggested by Jorion 1988). Net owners keep track of incoming and outgoing money flows. In most cases there are accounts books (recording the catches per day or week and how the catch is shared) and sales books (recording the debts of the women buyers) as well as fine books (recording the fines that the crew received for misbehaviour), expense books (in which the net owner records all expenses made) and loan books (recording the loans and advances they have taken with the net owner) are kept.

Net owners who work with a contract system need to maintain these records because the money is shared at the end of the contract period (which can be between nine months and five years). Keeping track of catch values and loans is crucial. However, net owners that share the catch per day also keep records of loans and catches. These net owners regard lending money to their crew and buying medicine for them as normal although it is also used as a way of binding them to their company.

In Akosua Village I was conducting an interview with two net owners when we were interrupted by a crew member who came to collect one of the two net owners. They left together to go to Winneba to buy medicine for an ill crew member. The other net owner explained to me how this worked:

MK: So he is now going to buy medicine for a crew member?
Net owner: Yes, the person has to stay in good health, that is our job.
MK: So the medicine he will buy will not be a loan.
Net owner: No, but it will be written down. To remember, with the date and what was bought. So that if you do not work properly he can say ‘hey remember then you were sick and I bought you this medicine’ (Interview 28 with two net owners in Akosua Village, 22-4-2004).

In all three research locations we managed to get an insight into some of these records. It must be understood that, although we have catch data from all three fisher communities, the records are not held in standardised format (some make note of all fishing expeditions, some only write down good catches, some only write the totals per week and not the totals per catch/day), so it is not always easy to compare the data. The catch data I obtained from three companies in the three research locations does at least overlap in time (2004-2005) in such a way that we can combine it in one graph. It shows the variation in catches in Ghana during the same period (Figure 4.6).

However, this catch data might not be representative of the catch data per village, or of the companies over the years (since we do not have data of other years and since the time periods are quite short – especially for Akosua Village and Half Assini). Moreover, the companies differ strongly from each other as regards organisation (operating with or

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3 Beach seine nets catch a lot of plastic bags (both the type used at markets to carry food items and the little sacs with drinking water sold all over Ghana) drifting in the coastal waters.

4 See the ‘Collection of documents and records’ section in Chapter 2 for details on the data sources and how the data was obtained.
without motor, with fifteen or sixty people, in a company system or with a daily sharing system) so this limits the extent to which we can really compare their catch records (see Table 4.1).

<table>
<thead>
<tr>
<th>Village/town</th>
<th>Woe</th>
<th>Akosua Village</th>
<th>Half Assini</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total companies operating</td>
<td>19</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>Total companies with year contract</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Owner</td>
<td>53 years old, grandparents in fishing</td>
<td>35 years old, grandfather was net owner</td>
<td>42 years old, Grandparents also fishing, father net owner</td>
</tr>
<tr>
<td>Size</td>
<td>50 crew</td>
<td>15-20 crew</td>
<td>65 crew</td>
</tr>
<tr>
<td>Since when operating</td>
<td>2004</td>
<td>1997</td>
<td>2001 (but taken over from father, company operates longer)</td>
</tr>
<tr>
<td>Motorised</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>On contract or daily sharing</td>
<td>Contract (10 months)</td>
<td>Daily sharing (1 year)</td>
<td>Contract</td>
</tr>
<tr>
<td>Non-fishing day</td>
<td>Sunday</td>
<td>Tuesday</td>
<td>Thursday</td>
</tr>
</tbody>
</table>

If we compare the ‘Value of Catches’ graph with the ‘Fishing days’ graph (the number of fishing days per month; Figure 4.7) we see a similar picture, namely that the company in Half Assini not only catches more but also fishes much more often (on average 16.5 days per month) than the other two companies: in Woe (on average 6.5 days a
and Akosua Village (five days a month). The considerable difference in the time spent fishing between the Half Assini company and the other two companies suggests a difference in work approach (more professional), but may also be an indication of better catches and better weather.

Figure 4.7 Average number of fishing days of three example companies (2004-2005)

In the following pages I analyse the data I obtained in its own right, per company and per research location. All in all this will give us a better insight into how beach seine net owners in Ghana run their businesses.

• Woe
In Woe I was able to examine the records of a company that had started a year before, in September 2004. It fished on the basis of a nine-month contract. I asked the net owner why his crew chose to fish with him, using the contract system: “It is a way of saving money. They prefer it like this. So those who want it like that come to us” (interview with the net owner of this company, 6-11-2005). The average number of written fishing days is almost seven days per month. This is quite low and does not correspond with my observations on the beach in Woe. I asked the net owner about this:

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5 Average of first period 7.6 of second period 6, May not taken into account.
6 I would have expected them to start on August 15 (ref Fisheries Data Collector Woe, interview 85, 29-10-2005), which would have made it a complete series of nine months. However, the books show that this is not the case. Perhaps they could not start earlier due to certain problems or the catches these two weeks may have been so low that they were not registered.
7 Based on a calculation of September 2004 - August 2005, excluding May.
MK: About accounting: if in a week there is nothing written?
Net owner: Then there was really nothing or we didn’t write it down. If there is 100,000 cedis (nine Euro), we use it for expenses, we can’t write that down. If I don’t get anything, the crew doesn’t get anything either. (interview net owner, 6-11-2005)

The graph of catches made by this company (Figure 4.8) shows three peaks: November, March and June. That is not really in accordance with the seasonal data of Ghanaian fisheries. It is important to realise that the total value of the catch consists of a combination of number of pans (size of the catch) and price per pan. In March only 36 pans of fish were caught, compared to 138 in November. However, the average price per pan was more than three times higher in March. Since the company closed the books in April, there was no fishing in May.

**Figure 4.8** Catches per month (cedis) of the example company of Woe, 2004-2005

If we look at the average price per pan (Figure 4.9), it roughly shows (although March is the exception with a high catch and a high price) how the price of the fish goes up in times that there is less caught, in accordance with the seasonal catch data.

The price a company receives per pan depends on the species caught, on whether the company comes in first or last and on the other catches made on the beach by the other companies. The larger the catch on the beach the lower the price per pan. In the high season, therefore, the average price per pan is lower than in the lean season. This law is quite nicely reflected in the graph above. I assume that the exception of March could be explained by low catches by other companies, but I cannot prove this because I do not have any additional catch data from other companies.

**Accounting**

The company had fifty (male) crew members and 16 women attached to the company in the contract period August 2004 – April 2005. The men had each received an advance payment of 300,000 cedis (27 euros), and the women 150,000 cedis (14 euros). In addition to the advance payment, forty crew (men) arranged a loan with the net owner in
the course of time amounting to an average of 450,000 cedis (41 euros) (the lowest was 20,000 (1.80 euros) and the highest 1,500,000 (136 euros)). After nine months fishing, the crew had earned between 700,000 (64 euros) and 1,800,000 cedis (164 euros) (from which the advance payment of between 63 and 163 euros has to be subtracted), depending on their role in the company. By way of a comparison, the average annual income in Ghana in 1999 was 947 US dollars (Trade Union Congress 2004: 3). The net owner explained the difference between earning 700,000 or 1,800,000 cedis by saying, ‘*It all depends on the strength and on how hardworking you are*’ (interview net owner, 6-11-2005). One crew member remained indebted to the net owner after the contract period, and the rest received the remainder of what they had earned minus their advance payment and loans, which amounted to an average of 550,000 cedis (50 euros).

**Akosua Village**

The company in Akosua Village is small with 25 workers, three children and seven women attached to it. These people do not work on a contract basis but share what they catch each day. One of the men is old and receives about 25 percent less (say 15,000 while the others receive 20,000). The women are part of the company, as with other companies, but are only paid in kind, as the net owner explained, ‘*if we go far, they carry the catch to the market, bring water and give food. They get money to come and bring it. They don’t share in the chop money, but do get some fish for their homes*’ (fieldwork notes 21, 29-11-2005). Three of the women are related to the net owner (his wife, his mother and an aunt) as are the children. The children collect the ropes and carry them to the home or the boat. They are paid a small amount of about 5,000 or 6,000 cedis (50 eurocents). The catch records I was allowed to examine showed how the catches between August and November 2005 were shared (Figure 4.10). The average number of recorded fishing days was very low (five per month) but the records also showed that they went fishing twice in most cases on those days (an average of 1.75 times per fishing day). It is most likely that this company, as in the case of the company in Woe, only records high catches (see the accounting table below). An average of five
fishing days per month is much lower than what I observed whilst in the village. Moreover, in this village I also saw that if catches were good they would certainly sail out again. Finally it is important to understand that, based on the system of daily fishing, the catch is divided into large fish and small fish. The large fish are shared directly with the crew and the small heaps of fish are sold to the women. The crew is therefore often paid in kind (and they can sell or eat what they receive) and also in money – if the catch was a good one. When I asked them why they share the big fish for themselves and not the small fish, one answered, ‘Because we suffer!’ [and thus deserve something extra] (fieldwork notes 21, 29-11-2005). The graph of catches (Figure 4.10) shows that September and October were the better months. August is normally a good month in the Ghanaian fishing season, but sometimes it is spoiled by bad weather. The good seasons therefore vary slightly each year.

Figure 4.10  Catches per month in cedis of the example company of Akosua Village, August – November 2005

If we compare the average price per pan graph of Woe with that of Akosua Village (Figure 4.11), it immediately becomes clear that the price per pan is much lower in Akosua Village than in Woe. That is because the pans used in Akosua Village are much smaller than the pans used in Woe. This graph also shows how the price per pan in September and October was lower than in August and November (although the difference is not big).

**Accounting**

As already mentioned, this company in Akosua Village works on the basis of a daily sharing system by which they share part of the catch amongst themselves (Table 4.2).
The part of the catch that is sold is then used for expenses and is also shared between net owner and crew. Members of the crew with special roles receive extra.

**Figure 4.11** Average price per pan (in thousands cedis) of the example company of Akosua Village, August – November 2005

![Average price per pan graph](image)

**Table 4.2** An example of a day’s sharing of the catch by the sample company in Akosua Village (cedis)

<table>
<thead>
<tr>
<th>Catch on 28-9-2005</th>
<th>Sharing system</th>
</tr>
</thead>
<tbody>
<tr>
<td>expeditions pans</td>
<td>Price per pan Totals A Costs</td>
</tr>
<tr>
<td>First 48</td>
<td>26,000 1,248,000</td>
</tr>
<tr>
<td>Second 18</td>
<td>24,000 432,000</td>
</tr>
<tr>
<td>Total catch (A)</td>
<td>1,680,000 339,000</td>
</tr>
<tr>
<td>(B) Total after</td>
<td>1,341,000</td>
</tr>
<tr>
<td>expenses; to be</td>
<td></td>
</tr>
<tr>
<td>shared to owner</td>
<td></td>
</tr>
<tr>
<td>and crew</td>
<td></td>
</tr>
<tr>
<td>A Costs</td>
<td></td>
</tr>
<tr>
<td>1 boat paddlers</td>
<td>170,000</td>
</tr>
<tr>
<td>total</td>
<td></td>
</tr>
<tr>
<td>2 Menders total</td>
<td>85,000</td>
</tr>
<tr>
<td>3 Divers total</td>
<td>42,000</td>
</tr>
<tr>
<td>4 Other expenses</td>
<td>42,000</td>
</tr>
<tr>
<td><strong>Final total costs</strong></td>
<td>339,000</td>
</tr>
<tr>
<td>B Share</td>
<td></td>
</tr>
<tr>
<td>1 company’s amount</td>
<td>690,000</td>
</tr>
<tr>
<td>2 net owner</td>
<td>650,000</td>
</tr>
<tr>
<td>Total shared</td>
<td>1,340,000</td>
</tr>
</tbody>
</table>
A typical way of sharing the catch in Akosua Village is reflected in the following example (see Table 4.2). The company fished twice that day. During the first expedition they caught 48 pans and during the second expedition eighteen pans. The pans from the first catch were sold for 26,000 cedis (2.40 euros) per pan, the pans from the second catch were sold for 24,000 cedis. In total their catch was worth 1,680,000 cedis (153 euros). They share the catch as follows. First they deduct the expenses, being the cost of the special roles and the expenses made (such as chop money or drink) (A). They calculate ten percent of the catch value as being 170,000 cedis (15 euros). This is shared with the boat paddlers. The menders get half what the paddlers receive and the divers get half of what the menders receive. Together with other expenses amounting to 42,000 cedis (3.80 euros), the total expenses of these two fishing expeditions were 339,000 cedis (31 euros). This is subtracted from the catch value, leaving 1,341,000 cedis (122 euros) to share between crew and net owner (B). They both get about half, but the crew (between fifty and sixty percent) always receive a bit more than the net owner (between forty and fifty percent). If there were seventeen crew members to share the catch, each would earn 40,000 cedis (3.63 euros) (apart from those who receive a little extra due to their role). In Akosua Village, this would be a very good day.

• Half Assini
In Half Assini I was able to scrutinise an account book with catch data over a period of seven months, between September 2004 and March 2005. The average number of fishing days had been 3.7 days per week (101 fishing days over 27 weeks). Over the seven months this company caught fish worth 206 million cedis (19,000 euros), which gives an average catch per fishing day of 188 euros. The subtracted costs (special roles, chop money etcetera) total 59 million cedis (5,364 euros). This leaves 147 million cedis (13,366 euros) to share between crew and net owner (after seven months of fishing). Normally this is done after a contract period, which in Half Assini is a year. The amount

8 This is based on a calculation of all catch data from this company.
9 Thursday is the non-fishing day in Half Assini. So 3.7 days out of 6, is 61 percent of available fishing time could be used.
is allocated as follows. First the advances are subtracted, after which the share is divided into ten parts. One part goes to the people with special roles, one part is reserved for expenses, the eight remaining parts are shared in half between net owner and crew. A rough calculation shows that an individual crew member would have earned 900,000 cedis (82 euros) (including the advance payment) in these seven months.

The catch-value data from Half Assini is much higher than in Woe and Akosua Village. This significant difference can be explained by another work ethos or approach but might also reflect better seasons or catches. Unfortunately, I do not have the data to draw conclusions on this issue.

The accounts also show the seasonality of the job. Of these fishing months, September and December produced quite good results, October and January were reasonable, but November and February were poor (Figure 4.13).

Table 4.3 shows that, although the number of days on which fishing was possible was lowest in September, the catch total was the highest during that month.

<table>
<thead>
<tr>
<th>Month</th>
<th>Value total catches (cedis)</th>
<th>No. of fishing days</th>
<th>Average catch (cedis) / fishing day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sep 2004</td>
<td>63,030,000</td>
<td>14</td>
<td>4,502,142</td>
</tr>
<tr>
<td>Oct</td>
<td>35,230,000</td>
<td>19</td>
<td>1,854,210</td>
</tr>
<tr>
<td>Nov</td>
<td>12,500,000</td>
<td>15</td>
<td>833,333</td>
</tr>
<tr>
<td>Dec</td>
<td>41,380,000</td>
<td>16</td>
<td>2,586,250</td>
</tr>
<tr>
<td>Jan 2005</td>
<td>28,560,000</td>
<td>19</td>
<td>1,503,157</td>
</tr>
<tr>
<td>Feb</td>
<td>15,734,000</td>
<td>17</td>
<td>925,529</td>
</tr>
</tbody>
</table>
• Sharing the catch
The three examples above are of two companies working with a contract and one on the basis of daily sharing. In all cases expenses are deducted first, after which the remainder is shared between net owner and crew. Crew members with special roles earn extra, and that is treated as part of the expenses. When asked about the sharing system I heard a lot of different versions. The proceeds (catch minus expenses) are shared in three parts with one part going into the ‘caring advance payments’, the second part to the net owner, and the third part to the crew (interview 1, 14-11-2003). A net owner in Woe explained to me that if there is the system of daily sharing, the catch will be divided into five parts with two parts for the net owner (including for the canoe and motor), one part for the leaders and two parts to be divided with the crew (interview 7, 14-1-2004).

In another company in Woe they also share on the basis of five parts and they gave me another example (see Box 4.1). Thus, if you are a strong crew member you will earn 8,000 cedis based on this example and if you also perform a special task you can earn even more. For instance if you carry the outboard motor, you will earn an additional 5,000 cedis (0.45 euro). On average we could conclude that fishermen earn between 5,000 and 40,000 cedis (3.63 euros) per fishing expedition.

The effect of sharing in three or in five parts is that, if shared in five parts, the crew get a relatively larger part (two-fifths is more than one-third). From all sharing systems it can be deducted that the net owners receive a fairly large amount, often with a separate part earmarked for investments in the canoe and net, and always with the cost of the expedition already deducted.

To provide some degree of comparison, research performed in 1999 showed that the average daily income per capita in Ghana was 0.60 US$ per day, with the average daily household income being 2.59 US$ (Trades Union Congress 2004: 3).

Figure 4.14  Sales of a bumper catch in Woe
Box 4.1 Example of how a catch is shared in Woe

<table>
<thead>
<tr>
<th>Catch (five pans, each 200,000 cedis)</th>
<th>1,000,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>chop money</td>
<td>60,000</td>
</tr>
<tr>
<td>transportation fee</td>
<td>10,000</td>
</tr>
<tr>
<td>drinks</td>
<td>16,000</td>
</tr>
<tr>
<td>outboard motor (petrol)</td>
<td>40,000</td>
</tr>
<tr>
<td>carrier of outboard motor</td>
<td>5,000</td>
</tr>
<tr>
<td>divers</td>
<td>20,000</td>
</tr>
<tr>
<td>carriers of net (on shoulder)</td>
<td>10,000</td>
</tr>
<tr>
<td>singers</td>
<td>10,000</td>
</tr>
<tr>
<td>tying of the net</td>
<td>20,000</td>
</tr>
<tr>
<td>swim to sac</td>
<td>5,000</td>
</tr>
<tr>
<td><strong>Total expenses</strong></td>
<td><strong>196,000</strong></td>
</tr>
</tbody>
</table>

| **Income**                          | **804,000**|
| **Miscellaneous**                   | **54,000** |

| **Left**                             | **750,000**|
| divided in five parts                |            |
| one part is net owner’s money        | 150,000    |
| one part for the leaders (bozu, paddlers, menders) | 150,000 |
| one part is also for net owner (transport for buying net) | 150,000 |
| two parts for the company (crew forty people) | 300,000 |
| thirty strong (all get 8,000)        | 240,000    |
| three children                       | 15,000     |
| seven women (get half of men)        | 28,000     |
| **Remainder**                        | **17,000** |

Source: author

More than income

In this section we pay some more attention to the financial returns of fishing, whereby it is important to differentiate between net owners and crew. As talking about income is difficult and thus time consuming, we decided to focus on what we really wanted to know, that is whether fisher households have other sources of income besides fishing. Fishing is important because it does more than just generate an income for fishermen and this is what we will address in this section, which we will end by looking into the fishermen’s future and ask whether they want their children to become fishermen too?
Fishing as a major source of income

As we saw above, the financial returns are different for net owners and crew members. The net owners get a large part of the catch, but they also have to reinvest part of it in the business. The canoe, net and motor all need to be maintained continuously and crew members should always be able to arrange a loan with net owners, although net owners also use the financial returns as income. In an article by Nukunya10 dating from 1989 we read that, ‘The financial guarantees of the business can be seen in the fact that company owners are easily among the most richest men, not only in Woe but also in all the settlements along the littoral (…)’ (Nukunya 1989: 162). However, with regard to the crew members, Nukunya found that, ‘Their incomes compare favourably with those of their counterparts in farming and other occupations. The large fish content of their diet means also that they eat better than their counterparts’ (Ibid.: 166) Furthermore, ‘As for the ordinary fishermen the least that can be said about them is that, in terms of achievement, measured in buildings, clothes and food habits, they can hold their own against the average farmer’ (Ibid.: 170). In an article on coastal lagoons in Ghana we found that fishing in the lagoon (as is done in Akosua Village) is quite lucrative. It was found that with a fishing effort of 3.5 man hours day⁻¹, the average income from the lagoon fisheries during the peak season was three to four times higher than the minimum government wage for an eight hours working day (Ntiamoa-Baidu 1991: 45). Although the article is not very recent, it does indicate that lagoon resources are valuable.

As income is a sensitive topic, we did not ask people to reveal their daily or monthly incomes. In our household survey (see Chapter 3) we did ask whether people engaged in other income-generating activities in addition to their profession of fisherman or processor (in which most of them worked). Moreover, some households were composed of other members doing other than fishing-related jobs. In our fieldwork we had seen women engaging in some small fish processing in addition to running a little bar or making porridge in the morning to sell. In Woe we found that almost one fifth of the households also acquired income from farming. Nevertheless, the majority of the households indicated that their income comes only from fishing-related activities (85 percent in Woe, 82 percent in Akosua Village and 93 percent in Half Assini).

We also used a crew [N=113] and net-owner [N=31] questionnaire which showed that the majority of the net owners from Akosua Village and Half Assini (the migration locations) indicated that they only engaged in fishing. Only one of the twelve (one was missing) said that he had additional work. In the case of Woe, half the net owners were involved in farming. This might be explained by the fact that net owners in Woe have access to land whereas on migration they do not. The crew members in Woe are also more involved in farming (14 percent) than the ones on migration (Akosua Village five percent, Half Assini four percent). However, the fisher crews on migration (Half Assini fourteen percent, Akosua Village 17 percent) are more involved in other occupations than the crews in Woe (two percent). In the case of Akosua Village this can be explained by the fact that there is more to do, with a town nearby (Winneba) as for Half Assini which is a district capital.

We also asked the fishermen (both groups) whether their household members were involved in other income-generating activities – to get an idea of the other sources of income in their households apart from fishing. However, only eleven percent of the

10 Dr Nukunya is a native from Woe.
fishermen answered that members of their households earned incomes from non-fishery related activities. Ten percent answered that their fishing was the household’s only source of income.\footnote{Thirty-three percent of the fishermen had not answered this question (most probably because they were not asked properly because the question in which this topic was addressed also asked about something else and the assistants did not always ask about both issues. Moreover, fishing and farming are taken as one, meaning that farming was included in the 44 percent answer that another member of the household contributed income earned in fishing.}

We also asked about secondary jobs and asked whether the fishermen have other income-generating activities themselves? Thirty percent of the net owners were active in farming (most of them from Woe) and another two percent were active in another income deriving activity, compared to eight percent of the crew members in farming and eleven percent in another income deriving activity. Overall, therefore, fishermen are mainly active as specialised fishermen. The combination of fishing and farming was quite common, as is the combination (in the household) of fishing with petty trading.

It should be kept in mind that income is not only what crew members get in return for their labour or what net owners receive as direct income from their fish business, or what both groups get out other income-generating activities. Income can also be built on returns from savings, either by rent (when kept on a bank account for instance) or by interest one receives when the saved capital is loaned to someone else. The latter is a strategy of female traders in Ghana. Alternatively, they buy fishing equipment to loan to companies (Odotei 2002: 47 and 2003: 81-89). By lending money or equipment to companies, the women are able to claim a certain part of the fish. Although they pay for it as always, the advantage they have is that they have a secured supply of fish and do not need to compete for it with other women (Overå 1998: 99). Income can also consist of ‘gifts’, that is remittances received from family or friends on migration, pensions, social security payments, ‘begging’ or ‘presents’. I did not ask my respondents about this as it is a sensitive issue and would take up a lot of extra research time.

Nonetheless, I was to observe that these other ways of gaining an income or supplementing ones income do exist. I spoke with net owners who also receive a pension from former jobs with the army, the State Fishing Cooperation\footnote{The State fishing cooperation was instituted in the 1960s as a way to attract national entrepreneurs with the provision of loans. Four companies were started but as the investments were not well managed, large sums of money went lost (Atta-Mills, Alder & Sumaila 2004: 14).} and education. From the homecoming party in Woe I learnt that quite a lot of community members had migrated to large cities in Ghana but that some had also migrated overseas to the United States of America or Europe. From other research we know how important these remittances are for local economies (Kabki 2007, Smith 2007), but hardly any of the fishermen (either net owners or crew) I came across mentioned remitting family members. Fishermen and women on migration hardly ever send remittances. As we shall see in Chapter 5 fisher migration is often used as a strategy to avoid having to pay for all sorts of family problems. From a group interview with processors in Woe I did hear, however, that the fact that many had migrated was good for the economy of the town in the sense that there were less resources to share with others. The idea that all migrants would come back and would need to earn a living in Woe was regarded as a threat. Both ‘begging’ and the giving and receiving of ‘presents’ are part and parcel of society. However, I have not researched the impact of both on fisher incomes. I did observe that adherents to the Yewe shrine come to the beach to beg for fish, something which net owners often
still give in to although some ignore their requests. It still is a norm to comply with the request of someone asking for fish when the fish are landed.

More than a source of income

Jorion stated in a much cited article in 1988 that no-one would ever become a full-time marine fishermen by choice because it is too dangerous and economically risky (Jorion 1988). In his article he writes about the Xwla and the Anlo-Ewe. Nukunya replied in a reaction to this article that the fishermen do chose their profession because of the financial returns and because of their love for it:

‘One simply has to listen to these fishermen recalling some of their famous exploits at sea, the challenges they faced and the heroism required to meet them, their big catches, the big monies they earned etc. etc. Again during the off season when the appear idle, they look forward to the onset of the next season, no doubt with some financial motive, but also for the joy the activities bring, because fishing is their live.’ (Nukunya 1989: 159)

During my fieldwork I also heard a lot of accounts of how beautiful the fishing profession is and how lucrative it can be, for instance when I met the small (twelve people) company in Togo (interview 13, 28-1-2004), who had managed to buy a new boat after one year of fishing. When I saw them in Togo they were painting it in bright colours. Some months later I met them again in Ghana and I could see the result. The canoe was named ‘We are also coming’ which refers to their successful migration. A former net caretaker in Akosua Village told me a story about one of his biggest catches:

Once when I fished the sac came up! We could see the fish, the fishes raised the net, it was a miracle! We had cast in the early morning, in 1993, it was full tide, about to go down, we had 2 or 3 sacs. We used 15 or 16 ropes. The bozu and all grumbled because the others were getting less fish and we left it in and in and in, my heart was pounding! But when we got it in, we had to shorten sacs, we had a night catch, about 400 bowls! Fanti women came to buy and fry. (interview 17, 17-2-2004)

The singing in the boat and whilst pulling the net, the decorated canoes, the decorated houses of the net owners, the completely new attire and happiness in the community which accompanies the return home of a migrated company (see the quote of the Anlo-Ewe professor in Chapter 5) are also evidence of how fishing is much more than just a job, ‘it is a culture, a way of life’ (Akyeampong 2004: 180). As Akyeampong showed (see Chapter 3 and 8), the Anlo-Ewe even refused to move away from the coast when they were faced with severe coastal erosion (Akyeampong 2001 and 2004: 180). Fishing is an integral aspect of their lives. The fishermen grew up at the seaside, on a coastal littoral sometimes only a few kilometres wide where they learned to swim and fish as small boys (Nukunya 1989: 158-159) and the sea plays an important role in their religious and ritual life (Akyeampong 2001, see Chapter 3).

The importance of beach seine fishing for the coastal fishing communities also implies more than just being a source of income to individuals since it has communal importance as well. Beach seine companies are often used to earn money for the community. Every now and then the net owners and fishermen are asked by the town council or the traditional council to fish a day extra for the community. In Woe, community fishing often takes place on Saturdays, a day when people often do not fish because of the high number of funerals that take place on that day. One reason why community fishing days are held is, for example, to generate money for school furniture.

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13 See also the critique of Jul-Larsen 1994: 13-18.
School children often help with the fishing if organised on Saturdays and in the holidays.

Figure 4.15 A good catch in Woe

Nukunya (1989: 159) claims that fishing industry is important to the Anlo-Ewe homeland because it not only has positive effects on the fishermen but also on the whole community:

‘(A)ny visitor to the Anlo Coast can only be impressed by the achievements of the people. The quality of their housing alone is sufficient to tell him he is in an area which is, at least, less poor than most parts of Ghana and Togo. (...) The traditional mud and thatch houses have been completely replaced, all within the last 40 years or so (...). In terms of education the Anlo coast has more than its fair share of facilities (...) most of these schools have been built by local rather than government initiative.

I was able to observe the social importance of beach seines many times in the research locations, given the participation by everyone in pulling in the nets and, in that way, earning some fish. You often see old men and physically or mentally challenged people joining in, usually at the back of the rope, near the women. Members of shrines can also come to the beach and ask for fish and they do not even have to help pull in the net. Their requests are rarely refused and it has become the norm to give fish to these people when they ask for it. They do not even have to ask but just kneel in the sand and clap their hands. These days, some (often Christian) net owners ignore the rule since they do not believe in the power of the shrines. However, a Christian net owner from Woe told me that, in fact, as a Christian net owner you are also expected to give to people who ask for your help. The Regional chief fisherman (of the Volta Region) told me that there had been a case at his court of a Christian net owner not wanting to pay for a ritual (related to the traditional religion). The other non-Christian net owners had been furious. He had told them, jokingly, that they should not be mad, but rather ask their gods to fill their nets with the fish of the Christian net owner who refused to pay. ‘Solve it according to your religion’. To the Christian net owner he had said that he had to pay since the money for the ritual was to the benefit of the community. ‘Even though you
are a Christian you have to pay since you are a member of the community’ (interview 33, 19-5-2004).

One last point needs to be made. Often fishermen in Africa are seen as ‘the poorest of the poor’ (see Chapter 1) or fishing as a last resort activity. My research counters these ideas. From the net- and crewmember surveys and from most of the fishermen I spoke to, I learnt that most fishermen’s parents and grandparents had also been active in fishing. I never met a former farmer coming from the inland – as described by Pauly (2006: 12, 13) – who sought opportunities on the coast. From the literature I know however that Malthusian overfishing (as Pauly has called it) can be recognised in Senegal (Pinnegar & Engelhard 2008: 12; De Vries 2003).

Fishing and the future
To get a better idea of the satisfaction people had with their job I asked them in the crew [N=113] and net-owner [N=31] questionnaire what they wanted in the future for themselves and their children. When asked about the future, we see quite considerable differences between net owners and crew members (Tables 4.4 and 4.5). Eighty percent of the net owners expressed the wish to continue their current activity and/or upgrade or expand their business – compared to 35 percent of the crew! The crew members expressed a preference for switching to another occupation (59 percent).

<table>
<thead>
<tr>
<th>Table 4.4</th>
<th>Perception own future – net owners; based on questionnaire 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
<td><strong>Percent</strong></td>
</tr>
<tr>
<td>Valid</td>
<td><strong>Continue current activity</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Upgrading / expand business</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Switch to other occupation</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Other</strong></td>
</tr>
<tr>
<td>Total</td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>Missing</td>
<td><strong>Not answered</strong></td>
</tr>
<tr>
<td>Total</td>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 4.5</th>
<th>Perception own future – crew; based on questionnaire 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
<td><strong>Percent</strong></td>
</tr>
<tr>
<td>Valid</td>
<td><strong>Continue current activity</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Upgrading / expand business</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Continue schooling</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Switch to other occupation</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Other</strong></td>
</tr>
<tr>
<td>Total</td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>Missing</td>
<td><strong>Not answered</strong></td>
</tr>
<tr>
<td>Total</td>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>
When asked about what they want for the future of their children, 21 percent of the net owners said they wanted a future in fishing for their children, whereas none of the crew gave that answer. The majority of the crew members answered that they wanted their children to complete schooling (62 percent) or find a ‘big’ job outside fisheries (31 percent). Net owners also expressed completing schooling most often as wish for their children (52 percent) and another 21 percent hoped that their children would find a big job outside fishing.

None of the respondents that wanted another job for themselves (switch to other occupation and other) wanted their children to be in fishing in the future. Fifty-five percent of them wanted them to complete their schooling and forty percent wanted them to have a ‘big’ job outside fisheries.

When comparing the outcomes of the questionnaire between the three research locations, we see that the crew in Woe is keener on staying in their business than the crew on migration. Fifty percent wish to continue or upgrade the business, compared to fourteen percent in Half Assini and 33 percent in Akosua Village. Crew members on migration are more keen on continuing schooling or switching to another occupation. This might be explained by the fact that the percentage of illiterates amongst the crew in Woe is much higher than the crew on migration (36 percent compared to eight percent in Akosua Village and four percent in Half Assini). Perhaps a crew on migration sees more possibilities/alternatives than a crew that stays at home. The crew in Akosua Village think their children will have a bright future if they complete their schooling (87 percent), as might be explained by the fact that they live nearby Winneba, which is a schooling centre in Ghana.

Figure 4.16  A young girl in Woe

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14 A ‘big’ job outside fisheries is a code. Often respondents referred to a job with the police, in the army, as civil servant or as teacher, nurse or doctor.

15 Most of the people who say that they want to switch to another occupation want to devote more time to their secondary job.
This difference between net owner and crew perception of the business might be explained by the way the catch is shared. As expenses are always first covered by whatever is caught, the risk of low catches is disproportionately borne by the crew. More often than not, the net owner is able to recoup his costs, whilst his share in the catch (for income and investment) is considerable. Apparently, fishing is still quite lucrative with only twenty percent of the net owners expressing a wish to move out of fishing and 21 percent even still see a future for their children in fishing.

Our research shows how people engage in fishing not only out of pride and appreciation of the job. As we saw above, quite a number of crew members would prefer to have a different job. It is likely that declining catches are reflected in their appreciation of the job, as they have strong negative effects on the fisherman’s returns. A lot of accounts I listened to during my research were coloured by reflections on how good fishing was in the past, and the difficulties the fishermen (net owners and crew alike) now face. Although fishermen now work harder, catches have been declining and fishermen say that their catches include more smaller fish. Life in the fishing villages is quite tough but perhaps similarly tough to life in other rural areas in Ghana. As Béné concluded, fishing communities often reflect a general lack of development of the rural areas in which they exist, (Béné 2004: 76). The following account illustrates these difficulties:

One day we were interviewing a fisherman in Akosua Village. He works for his brother, one of the net owners of the village. He is 35 years old and has been fishing since he was ten years old. He is married and has three boys of six, three and one year old – the oldest of whom goes to school. His wife trades in (mostly alcoholic) drinks and they own a little bar. It is in the bar, at his house that we sit whilst the company in which he fishes is dragging the net ashore, just in front of the house which stands practically on the beach. It is ok that we interview him, since he had cast his net into the water that morning so he can now have a little rest. Curious crew members come running in from time to time, make jokes in Ewe and go back to work. He explains us what his life looks like as a fisherman, what his roles are in the company, how he makes ends meet. When he is explaining us what the fishermen do when there is a serious fishing conflict, an of a sudden a young girl, of about 15 years old, comes running in crying. He excuses himself, goes away with the girl and we can hear some people shout at each other outside the compound. After some minutes he comes back, but the person he was shouting with follows and for a short while they stay quarrelling together near us. Then the other guy gets sent away and the fisherman explains us what had happened. The crying girl was his little sister and her mother had asked her this morning to stay home from school to sell food in their little food stall. She agreed and had gone to the market to buy fish, since they hadn’t caught fish for some time now. She went about selling the food. However, one of the customers had asked for food, had eaten it, but after eating had only wanted to pay half of the required amount. She said ‘how can I explain that to my mother, she will be expecting more than that’. The customer however refused to pay more and started beating her. At that point she had run to her brother. (interview 22, 12-3-2004)

Vulnerability

The Anlo-Ewe fish in a vulnerability context, with shocks, trends and seasonality influencing their livelihoods. During my fieldwork I could see how the fishermen at home

\[16\text{ It should be kept in mind that this negative view could be a bias in my research. After all, I approached the fishermen as professionals (coming from fishing families – as my surveys proved) with love for their job and did not really question that topic – they need not convince me on that point. Instead my questions dealt with fisheries management problems in the light of clearly declining catches (as also felt by them). In addition, if I had asked them if they were satisfied this might have triggered their discontent, perhaps in the hope that I would be able to do something about it (being white, having contact with the government).} \]
had dealt and still needed to deal with coastal erosion (see Chapter 8). Moreover, throughout all the research locations the fishermen had to deal with the seasonality of the catches (described in more detail in Chapter 8 with regard to Akosua Village). In this chapter we discuss another example that took place in Half Assini, where the fishermen were hindered in their fishing by algal bloom occurring in the coastal waters. These are, therefore, three examples of the external environment impacting on their livelihoods (over which they have no or limited control), three examples of what has been called the vulnerability context in the sustainable livelihoods approach (DFID 1999). Table 4.6 provides examples of these trends, shocks and seasonality threats.

### Table 4.6 The three elements of the vulnerability context as set out in the Livelihoods Approach

<table>
<thead>
<tr>
<th>Trends</th>
<th>Shocks</th>
<th>Seasonality</th>
</tr>
</thead>
<tbody>
<tr>
<td>population trends</td>
<td>human health shocks</td>
<td>of prices</td>
</tr>
<tr>
<td>resource trends</td>
<td>natural shocks</td>
<td>of production</td>
</tr>
<tr>
<td>(including conflict)</td>
<td>economic shocks</td>
<td>of health</td>
</tr>
<tr>
<td>national / international</td>
<td>conflict</td>
<td>of employment</td>
</tr>
<tr>
<td>economic trends</td>
<td>crop/livestock shocks</td>
<td>opportunities</td>
</tr>
<tr>
<td>trends in governance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(including politics)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>technological trends</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: DFID 1999.

The concept of vulnerability is an important extension of a traditional risk analysis that focused on natural hazards. Recent work on vulnerability ‘increasingly emphasises the capacities of different affected groups to anticipate and cope with risks, and the capacities of institutions to build resilience and adapt to change’ (UNEP 2007: 304). The understanding had come that a drought or a flood does not necessarily lead to a disaster, a natural hazard only becomes a disaster when it affects vulnerable people (Van der Geest 2004: 8 referring to Blaike et al. 1994). The impact of the different factors can be direct or indirect and does not always have to be adverse, for instance diseases can be eradicated or new technologies can be made available with positive results for people’s lives and livelihoods. However certain groups in society, such as the poor, generally have inherently fragile livelihoods which make them unable to cope with stresses, and less able to manipulate or exert influence on their environment – making them increasingly vulnerable (DFID 1999). Vulnerability is, therefore, not the same as poverty and the link is on the internal side of vulnerability as being the inability to cope and recover mainly caused by a lack of resources (Van der Geest 2004: 9). We will see that the fact that the Anlo-Ewe fishermen have specialised in one technique makes them additionally vulnerable to adverse trends and shocks.

A way to deal with vulnerability to the above-mentioned stresses is to enhance resilience. Resilience is understood as being the ability of a system to bounce back. Resilience is enhanced by building up the assets of people and, as is frequently stated ‘to help ensure that critical institutions and organisations are responsive to the needs’ of the people (DFID 1999). Therefore, management that builds resilience can sustain social-ecological systems in the face of unpredictability. In that sense, the diversity of species, of knowledge and of institutions can potentially contribute to sustainability (Folke et al. 2002; Begosi 2002: 6). Resilience, a concept derived from the natural
sciences, relates to systems thinking and that is why it is viewed with a certain degree of suspicion from social sciences – where an actor-oriented approach proved to be more appropriate. However, in situations in which social systems are under study in relation to the use of natural resources, the concept of resilience might prove to be useful.

As a reaction to trends such as population growth, the seasonality of fish catches and also shocks like coastal erosion, the Anlo-Ewe fishermen have developed strategies to deal with these, including migration. The fishermen themselves can be found all along the Ghanaian coast but also in other countries in the West African region. Their migration has, however, altered their negotiation power in the new settlements, where they again continuously have to negotiate their livelihood space and deal with shocks and trends. In Chapter 8 we deal extensively with these negotiations and how they can differ between ‘at home’ and ‘on migration’.

The case of ‘green green’ in Half Assini

When we arrived in Half Assini for the first time in October 2005 and walked to the beach the next day, we were surprised to see broad green strokes on the sand of the beach showing how far the waves had come in. Closer observation showed a spongy flurry substance in bright green spread out over the entire beach and visible in the surf of the sea. We asked some fishermen on the beach what it was and they told us that they thought it to be some kind of cotton by-product from a factory along the coast, being dumped after originally having come from Ivory Coast. I asked others if they thought if it was natural or pollution but they were not too sure. However, it was certainly worrying them and it meant they could not fish because the green substance would fill up the meshes of their net making it too heavy to drag ashore (fieldwork notes 20-10-2005).

When we met the Jomoro District Director of Agriculture we questioned him about it. He explained to us that it was algae, a seasonal bloom. He told us that they were researching whether the bloom occurred as a by-effect of the petrochemical industry. He said fishermen thought it to be cotton because of the colour and texture, because it turns white and looks like cotton if it is left on the beach for a certain period of time (fieldwork notes 20-10-2005).

According to the son of the Ewe chief fisherman in Half Assini it occurred for the first time between 1986 and 1990. In the beginning it was an occasional occurrence and was present for between a couple of months and a year after which it disappeared again. At those times the Ewe had to fish like the others (Fanti) with an outboard motor, hauling the net into the boat at sea. More recently it has appeared to be a seasonal phenomenon, returning every year in October and then slowly disappearing again (it was gone when I returned in December 2005) (fieldwork notes 9-12-2005).

The districts fisheries officer, who has collected the data on the beaches every day for more than 15 years, told me – off the top of his head – that the first time it occurred was 21 November 1994. ‘It comes every year. Sometimes it starts in August and stays for the whole year, or till December’. He explains how ‘they’ from Accra came to take samples, which they took to their labs and concluded that it was algae. He repeats in his story a couple of times ‘They said it was algae’ and then:

‘But it is strange. When it dries up, it becomes white and the structure is like cotton. It also doesn’t come seasonally and only in the waves, not in the deep sea (…). After 5 fathoms depth you don’t see it anymore’ Sometimes it doesn’t appear at all. Between August and September we expect it to come. Maybe one year it didn’t come.
He suggests that the occurrence may have something to do with the oil that is found. *They are searching for gas – pipeline. The Efasu Manya drilling gas project*. This is a company which I saw on my beach walk from New Town to Half Assini. Considering the sensitivity of the subject I ask him what he personally thinks that causes the green stuff, *‘That it is industrial waste – that is my opinion. A cotton by-product. In Abidjan they produce cloth. It is a problem between the governments’* [of Ghana and Ivory Coast] (interview 100, 13-12-2005). These two suggestions can be heard in Half Assini when you talk to people about the problem. It has either something to do with the oil company or with a factory in Abidjan, which is less than 100 km from Half Assini.

The green stuff seriously affects the fishermen, especially the beach seine fishermen because the green stuff only occurs in the near shore water which is beach seine fishing territory. The officer said the following on how it affects the fishermen:

‘Fishermen cannot drag in their nets. Then they have to use their net as a purse seine. That is a big problem to them. (…) When algae bloom comes, they shift their attention to the lagoon.’ (interview 100, 13-12-2005)

- **Biological knowledge**

As the district fisheries officer tells us ‘they, from Accra’ have come down to investigate the green stuff. From the Director of Agriculture I heard who ‘they’ were, namely the Environmental Protection Agency (EPA). I therefore went to Accra to talk to the people of the EPA. EPA is a government organisation dealing with all sorts of environmental problems in Ghana. In 1995 they wrote a document together with the Institute of Aquatic Biology and the research unit of the Fisheries Department in which they reported on their mission to determine the origin and causes of what they identified as algal bloom:

*Figure 4.17  Green green in Half Assini*

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17 See the Oxfam America report ‘Ghana’s big test, Oil’s challenge to democratic development’ (2009) in which maps show how important Half Assini is for Ghana’s (future) oil production with the Tano oil and gas fields.
‘In November 1993, the appearance was reported of unknown substances, alleged to be toxic wastes, in coastal waters along the East Nzema and Jomo ro Districts of the Western Region of Ghana. Physical, chemical and biological analyses in support of field observations at Anokye and Ankobra by the EPA and IAB however revealed the unknown substances to be non-toxic marine green algae (Chlorophyta) in bloom. The principal alga was later identified as Enteromorpha flexuosa by IAB and the Natural History Museum in London.’ (EPA 1995: 1)

During the research period of the EPA investigators (February – May 1995) two algal blooms occurred at Newtown and Half Assini, both were restricted to the beach waters less than 1 nautical miles offshore. ‘Shore waters were warmer and more enriched with higher nutrient and BOD levels. These conditions may have contributed favourably to algal growth’ (EPA 1995: 5). Sources of enrichment identified was runoff from land activities, disposed waste of coconut oil production and probably other activities – but these still need to be identified (Ibid.). Because in the study it was observed that the algal bloom also occurred in the Ivorian waters, an attempt was made to cooperate with the people from Ivory Coast on the study. Unfortunately this did not happen. The researchers do regard that as necessary though,

‘In order to formulate long term control measures, it is recommended that further studies be initiated with relevant authorities in Côte d’Ivoire and should aim at assessing the actual coverage of the problem (in Côte d’Ivoire) and associated land-use activities.’ (EPA 1995: 11)

From a study analyzing green and brown seaweeds (including the Enteromorpha flexuosa) from Ghana’s coast we learn that: ‘Benthic macroalgae concentrate metal ions from seawater and thus, macrophytic algae, especially green and brown seaweed have been widely used as indicators of trace metal pollution’ and – as is the conclusion of the article – that this may also apply in the Ghanaian case (Serfor-Armah et al. 1999: 193, 197). According to the study, Ghana’s coastline is continually affected by discharge of untreated effluents from mining and smelting operations, manufacturing industries, agricultural run-offs, off-shore mineral and oil explorations and of discharge of waste from oil tankers (Ibid.: 193).

Even though the occurrence of seaweed as such is natural (and around the world many seaweed species are highly useful as food and primary material for instance for cosmetic industries), the fact that it is blooming may be due to a plethora of causes whereby natural and social causes are often strongly linked. Ongoing research in Ghana has shown that changes in sea level temperatures, caused by the climate change, have altered the availability of key zooplankton species which are crucial for the biological basis of healthy fisheries (Wiafe et al. 2008). The water quality of Ghana’s coastal waters is also strongly affected by land based activities such as agriculture, forestry and industrial activities. Hereby a lot has to do with the run off from rivers to the sea. Nutrient levels are generally higher where sweet water flows into salt water, but the discharge due to the above-mentioned activities adds to that. The shipping in and out the ports, in this case the nearby port of Abidjan, also affects the coastal waters – algae travel along with the ballast water of ships. High chemical pressure around harbours can negatively impact the filtering capacity in coastal waters and therefore increases the chances that the algae will multiply and spread. Lastly, intensive fishing activity can also have an effect. In a healthy ecosystem, filter feeders (such as molluscs and oysters) control the algae and gametes (personal communication with Dr Langenberg, Deltares). The picture that emerges from this is that the coastal ecosystem is highly complex and that both natural and anthropogenic influences impact on the system, thereby making it difficult to filter out the causal relations between activities and effects.
Social impact
In 1996 a second EPA report was published. This time a socio-economic impact assessment of the algal bloom occurrence was performed, together with researchers from the Sociology Department of the University of Ghana. The respondents in the study called the sustenance in the water green green. The study, of which the core is a questionnaire undertaken amongst 303 people in five communities in Nzema East and Jomoro districts, clearly shows that most respondents assess the green green to have a negative impact on the size of the fish catch (56.8 percent), on the quality of the fish catch (53.8 percent) impacting negatively on fishing income (58.7 percent) and in addition having negative environmental impacts in terms of general pollution and bad odour (43.6 percent). Thirty percent of the respondents thought that the green green also had negative impacts on health; such as attributing to diarrhoea, headaches, skin rashes and coughing. These outcomes are already quite convincing in showing the level of concern of the people in response to the algae bloom affecting their coastal waters. The outcome of the study would have been even bigger if the study had been undertaken only in the communities where the blooms actually occur and if it had been undertaken primarily among fishermen. Now, 34 percent of the respondents came from Cape Three Points which had not been affected by the bloom and this strongly affected the answers as the researchers themselves admit. ‘it is quite clear that some of the areas had, in fact, not experienced the bloom at all. Consequently, knowledge about it was very scanty in a place such as Cape Three Points’ (EPA 1996: 16). Thus, the fact that 34.4 percent of the respondents answer to having no knowledge or factual information about the algae is influenced heavily by this community’s participation in the study. Throughout the whole study, approximately this percentage of respondents answered NS. Therefore, the percentages should actually be corrected for that. In addition only 25.1 percent of the research population was fisherman with an additional 10.2 percent working as fishmonger, yet these are the people primarily affected by the algae. One of the tables in the study is organised by occupation:

<table>
<thead>
<tr>
<th>Impact on fish catch</th>
<th>NS</th>
<th>Fisher*</th>
<th>Farmer</th>
<th>Trader</th>
<th>Fishm.</th>
<th>Teacher</th>
<th>Student</th>
<th>Housew.</th>
<th>Fitter</th>
<th>Unempl.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS</td>
<td>1</td>
<td>13</td>
<td>61</td>
<td>8</td>
<td>1</td>
<td>14</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>104</td>
<td></td>
</tr>
<tr>
<td>Decreases catch</td>
<td></td>
<td>50</td>
<td>46</td>
<td>20</td>
<td>23</td>
<td>17</td>
<td>4</td>
<td>2</td>
<td>9</td>
<td>1</td>
<td>172</td>
</tr>
<tr>
<td></td>
<td>(16.5)</td>
<td></td>
<td></td>
<td></td>
<td>(7.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No catch</td>
<td>13</td>
<td>7</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4.3)</td>
<td></td>
<td></td>
<td></td>
<td>(0.7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gives bad smell</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>76</td>
<td>114</td>
<td>31</td>
<td>24</td>
<td>33</td>
<td>6</td>
<td>2</td>
<td>14</td>
<td>2</td>
<td>303</td>
</tr>
</tbody>
</table>

* In the original it says fishmonger in this column, but checking the data it must be a typing mistake. Fishm = fishmonger, Housew. = housewife and Unempl. = unemployed

From Table 4.7 we can see that only 17 percent of the fishermen answered NS, compared to 54 percent of the farmers, 26 percent of the traders and 42 percent of the
teachers. If the research had included more fisher folk, the outcomes would have been oriented much more strongly towards the negative impact of the phenomenon.

If the respondents had been fisher folk in majority the outcomes in terms of ethnicity would also have been different, because in these districts a relative high percentage of fishermen are non-natives which would have resulted in different conclusions. About the ethnicity of the respondents:

‘Apart from Buakwaw, the respondents were generally local people. 74.3 percent were born in the Western Region, while 13.2 percent were born in the adjoining Central Region. But it is worthy of note that as much as 7.6 percent were born in the Volta Region, despite the fact that Eastern (1 percent), Asante (0.7 percent), Brong Ahafo (0.3 percent), Northern (0.3 percent) and Upper West (0.3 percent) had fewer representation. This reflects the occupational distribution of our respondents; people from the Volta Region featured prominently in the major, fishing occupation of the area.’

Yet, this ‘prominent featuring’ of the Ewe is not reflected in the study, which is a pity. No explanation was provided as to how the respondents were found, and whether any stratification had been undertaken beforehand. This is important if one wants to produce a representative study. In a town like Half Assini, for instance, the marine fishermen live in separate neighbourhoods according to ethnicity. If one skips such neighbourhood, a whole ethnic group is left out. The way this influences the study and its conclusions becomes clear when we read the conclusions:

‘It should be noted that, perhaps apart from Newtown Boakwaw (a fishing community inhabited exclusively by the Ewe), virtually all the coastal communities are characterised by people who do various jobs at the same time. Naturally, deterioration in fishing would cause some problems. But the social structure of such communities is that they quickly switch energy to other occupations. Their experience of the coconut disease is an example. Rural communities are quite dynamic in this regard.’

(EPA 1996: 25)

Considering the fact that this study has influenced the standpoint of those in power this is a worrying conclusion in which no responsibility is taken for those fishermen (the majority!) for which alternative livelihood options are closed (such as access to farmland) or at least limited! Even if we were to go along with the report and the way the study was undertaken, the aforementioned conclusion (that coastal people do various jobs at the same time) contrasts with the finding in the same document that, ‘Principally, however, the major issue in the research area concerns the increasing number of able-bodied youth without skill, of any kind’ and the ‘absence of small scale cottage industries’ (EPA 1996: 26). It should also be noted that, as the general economic situation in these coastal villages is poor, (as is recognised in the report: ‘Unfortunately none of the Nzema-Evalue communities, big or small, can be said to be enjoying any economic prosperity presently’ (Ibid.: 10)), the rising fish prices due to the algae (p. 26) mean that the food security of the whole community is affected. The algae occurrence is a disaster for these coastal districts and the report fails in its objective by concluding that:

‘The bloom’s occurrence should not be equated with a calamity such as an earthquake. Life still goes on in the affected areas, and the consultant’s assessment is that if the education and health care of dependants have been affected, they may have been affected only marginally as a result of the bloom.’

(EPA 1996: 26; his italics)

The sentence that it ‘should not be equated with a calamity such as an earthquake’ relates to the old school of disaster studies. From the introduction of this section we know that a natural hazard becomes a disaster when it affects vulnerable people. No matter whether it is algae bloom or an earthquake, it is a disaster if it affects vulnerable
people. From what we have seen, the Anlo-Ewe migrant beach seine fishermen are particularly vulnerable to this natural hazard (whether or not with a mixture of natural and anthropogenic causes).

In the end the recommendation is made that the fishing communities should be offered some ‘package of modest, liberal credit facilities to enable them resuscitate and expand their fishing occupation’ (Ibid.: 28). From the interviews with officials of Jomorro district it appears that initiatives have been undertaken over the course of time. The districts fisheries officer states that in 2000 the National Disaster Management Organisation (NMDO) gave out some rice which was shared to all dragnets (interview 100, 13-12-2005). The District Director of Agriculture told me that the NDMO also took action in 2003 and that, in 2005, training was given to the fishermen on alternative livelihoods, such as snail rearing, pig rearing and grasscutters. However, not one fishermen made the change:

‘They have been fishermen since childhood. Investing is a problem, they don’t do it. They want you [the government] to give the source of funding. But that is difficult. The government didn’t do it. That might change now [with the coming of the Ministry for Fisheries instead of a Department of Fisheries within the Ministry of Agriculture].’

All in all we can conclude that the occurrence of the algae, which started in the 1990s, primarily affects the livelihood of beach seine fishermen (of which a large percentage are Anlo-Ewe) as well as the food security of the communities. To date, the matter has not been addressed effectively considering a newspaper article of July 2007 in which the Mr Ocran, MP for Jomorro District moved a private members motion requesting the government to take appropriate measures to remove the algae (GNA 26-7-2007). He also called upon members of Parliament to support a request by the NMDO to provide relief to fishermen.

‘According to his statement, 35 percent of the coastal population in Jomorro and the Nzema East districts are “severely affected” by the alga bloom problem, thus deepening poverty in the area.’ (The Statesman 05-07-2007)

Although the research of the EPA has showed it to be a natural occurrence, ideas that it is toxic and that it has non-natural causes remain persistent, including amongst government officials:

‘Mr Saddique Abubakar Boniface, Minister of Manpower, Youth and Employment, said there was the need for investigations to find out whether the algae bloom was toxic since the substance emitted strong offensive odour.’ (GNA, 4-7-2007)

In reference to the non-natural cause reference is always made to Ivory Coast: ‘He [Mr Ocran] said the algae stretched from the waters of Cote d’Ivoire, making it a trans-border problem’ (GNA 30-7-2007) and in the Ghanaian parliament it is requested to retry to discuss the issue with the officials from Ivory Coast.

From this case of algae bloom we can draw a couple of conclusions. The first is that whether or not it is a ‘disaster’ depends on which of the affected people you look at. The socioeconomic impact assessment failed to focus on the main affected groups, by which the conclusions were quite moderate (not to say misleading) making the occurrence appear to be ‘in control’. The algae bloom is a cross-border event affecting multiple stakeholders and with a plethora of natural and anthropogenic causes. It is widely perceived to be a health threat and has socio-economic consequences for the coastal communities affected. Yet the fact that it is a trans-border problem makes it really difficult to address for the Ghanaian government. The case also shows how the Anlo-
Ewe as beach seine fishermen are heavily affected by the algae, whereby they are more vulnerable than other groups in two ways, first of all because they are *specialised* in beach seine fishing and secondly because they are *migrants* with the combination limiting (in this case) their alternatives to deal with the problem.

‘Alternative’ livelihoods and why it is not a success

In the above example we saw how alternative livelihood programmes were suggested as a way to address a catch reduced due to the algae. These alternative livelihood programmes are also suggested as a way of addressing the problem of declining catches due to other causes, which are often interpreted as necessitating a reduction in fishing effort. A reduction in effort will lead to fewer fishermen being able to live from fisheries or to fishermen earning less, depending on how the reduction is organised, that is in people or time. Ideally, this loss in income is compensated for and in that context alternative livelihood options are often considered. See the following passage in the study of the NCU Ghana of the SFLP programme:

‘Are there too many people fishing and too many gears in the water? The answer in the marine fishery is clearly yes. (...) Given that more than 500,000 people are involved directly, or indirectly in marine artisanal fisheries the task of limiting access and banning gears will inevitably mean that people will be displaced from the fishery. If this happens, for many the obvious choice will be to do as others have done in the past, and move their seining gear to the Lake [Lake Volta – mk]. This clearly cannot be part of any fisheries rationalisation process and alternatives must be sought. Government will be required to develop and fund a coherent strategy for assisting the transfer of fisheries community members into other income-generating activities, or into different kinds of involvement within the sub-sector. Inherent in such a process would be a policy decision to favour the expansion of artisanal communities into areas of the fishery currently occupied by industrial vessels.’ (NCU Ghana 2001: 27)

At local level a few initiatives have been undertaken. In Half Assini we were told by the Director of the Agriculture Department about their experience with these programmes and fishermen:

Director: We have been training fishermen in alternative livelihoods. Catches are going down, so we trained them how they can go in pig farming or cassava farming. But the fishermen are not used to waiting, so they haven’t taken it up. Waiting is a problem, you first have to raise the animal, grow the crop before you can cash it. Also learning something new is difficult for them. Fishing is all they do, all they know. They have been fishing from childhood. No schooling, no alternatives to easily catch up with. You see, I am trained as a veterinarian, but have also then done public health training. Once you have been to school… Like the fulani, they are herdsmen. That is what they do. Without cattle they can’t live.
MK: But then how did you reach them? Were they interested?
Director: We invited them, first we sensitised them. Then we asked them what they were interested in; they mentioned pigs, grasscutters, small ruminants. Then they came for the training. But since then there has not been any progress.
MK: How did you train them; by giving them the animals to start with?
Director: No we showed pictures, invited them to a meeting room like this [the interview was taking place in a meeting room of the DA in Half Assini]. Then visited a farm so they could see, informed them about the costs, the waiting time and when they might expect results.
MK: Did you give them money, for them to start?
Director: No we didn’t give money. There are no funds and also there was no demand. Nowadays we work on a demand-driven basis. They have to ask for it, they have to apply. Like the coconut farmers, they write letters. (interview 80, 20-10-2005)

In a later conversation we came back to this issue and he then explained to me that these programmes were not such a success with their fishermen since the fishermen were not
willing to invest in the enterprise. So they came to the meetings, they followed the courses but it was not taken any further (interview 104, 17-12-2005).

The question is whether thinking in terms of alternative livelihoods a good thing? If yes, what then would be an alternative income deriving activity and would be felt to be as important and good in all aspects as fishing did for fishermen? From the literature we do not get the impression that alternative activities are a great success. Crawford (2002) looked into seaweed farming as an alternative livelihood for small-scale fishers in Asia. He points out that alternative livelihood programmes have been suggested for over two decades now and that they generally have two objectives: first to raise the economic standard of living of fishers and coastal communities and second to reduce fishing effort (Crawford 2002: 4). Three assumptions underlie these programmes: 1) small-scale fishers are poor and this is related to the over-exploited nature of the resources upon which they depend; 2) fishers are willing to give up fishing in favour of more lucrative economic opportunities and; 3) as fishers take up alternative livelihoods, this will reduce pressure on the fisheries (Crawford 2002).

Crawford rightly shows, and we have seen it before (see Béné 2004 in the Introduction and Nukunya 1989, Odotei 2002, Akyeampong 2004) that these assumptions do not always prove to be true. Crawford refers to a study on job satisfaction of Pollnac et al. in which they showed that fishermen not always wish to leave fisheries fishers because fishing earns more them more money than other jobs (Pollnac et al. 2001). Fishermen are not always the poorest of the poor. It is also important to differentiate between fishermen, in the case of beach seine fishing between net owners and crew. Secondly fishermen are not only interested in fishing because of its economical returns, but also because they are fishermen – it is part of their identity. Many anthropologists have already successfully explained how fishermen see their fishing as more than just what they do for a living, fishing is part of their identity (Acheson 1981, Van Ginkel 2007) whereby they share certain characteristics throughout cultures.

Thus it might be better to think of supplemental livelihoods instead of alternative livelihoods. It should, however, be kept in mind that this means that the fishermen are limited as regards space for taking up additional livelihood activities, since they need to be near the fishing grounds. Taking up alternative livelihoods by some fishermen will not automatically lead to a reduction of fishing effort: ‘unless livelihood strategies are combined with resources management strategies that address that open access nature of coastal fisheries, progress towards improved fisheries management will be limited’ (Crawford 2002: 16). In the end Crawford goes one step further and suggests that economic diversification – and then seen from the household level – might even be a better goal than alternative or supplemental livelihood for fishermen (Ibid.: 17-18). Akyeampong suggests that the fishing skills of fishing communities might be utilised in the move to aquaculture (Akyeampong 2004: 180), although aquaculture is related more to farming than to fishing. It requires another way of thinking, of investing, feeding, waiting and then harvesting, than fisheries (Van Ginkel 2007). The suggestion made by the National Coordination Unit of the SFLP programme of the Ghanaian government is indeed important: ‘a policy decision [is inherent in such a process – mk] to favour the expansion of artisanal communities into areas of the fishery currently occupied by industrial vessels’ (NCU Ghana 2001: 27). The Government would have to make

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18 This viewpoint is shared by the international NGO International Collective in Support of Fishworkers (ICSF) which was erected in 1984 out of concern for too much attention for the commercial, industrial, scientific and fishery resource aspects at the expense of ‘the actual real-world, life-and-blood people
some hard choices as to which is preferred in its fishing strategy, a (semi-)industrial sector important for revenue and export earnings or a thriving artisan sector important for livelihoods and food security?

Figure 4.18 Household members in Half Assini

The whole idea of alternative livelihood strategies seems to come from the way the livelihoods approach is used. Wartena’s research on styles of making a living (instead of using the term livelihood) indicates that ‘non-economic considerations often play a dominant role in people’s livelihood choices’ (Wartena 2006: 71). She has therefore chosen to use the term styles as a way out because it draws more attention to socio-cultural values which she misses in the way other academics have interpreted livelihood in their research (Ibid.: 71-75). The image of actors acting as an *homo economicus* is still dominant in a lot of research, as reflected in the usage of the term capitals (see also Chapter 3), and by the fact that a number of researchers use the concept livelihood as synonym for income (*Ibid*: 72 – see for example Akyeampong 2004: ‘marine fishing is more than a livelihood; it is a way of life’.). Researchers are often confused between livelihood activities and livelihood ‘outcomes’ (Wartena 2006: 72-75). Combined with the idea that livelihood ‘outcomes’ should be solely understood as income, the idea of *alternative* livelihood activities as a solution to loss of income is easily created.

A recent study on selected successful Marine Protected Areas (MPAs) in South-east Asia showed that many alternative livelihood programmes proved to be unsustainable (Leisure et al. 2007). Dropping commodity prices, rising costs of inputs and lower quality of the produced products then of competitors meant that many programmes lasted only shortly. ‘Most alternative income-generating activities are better suited for

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involved in fishing worldwide fishworkers who are often sections of the population marginalised from mainstream society’.

http://icsf.net/icsf2006/jspFiles/icsfMain/about/english/aboutIcsf.jsp [Access date: January 2009].
offsetting income initially lost due to establishment of no-fishing areas rather than as long-term tools to improve incomes or move people away from fishing' (Ibid.: iv). The new job opportunities in tourism, related to the established MPAs turned out to lead to longer-term gains in non-fishing income.

From our study it has become clear that alternative livelihood options are probably limited; the educational level of fisher households is not high, in Woe 63 percent of the fisher population was illiterate or had reached elementary level (one to six years of primary school), in Akosua Village this was 57 percent and in Half Assini 75 percent. The crew and net owners questionnaire underscored these findings; seventy percent of the fishermen were illiterate (nineteen percent) or had reached primary school. Thus, in terms of education, alternatives will not be plentiful since the majority of the fishermen are not well educated. Also from our study it can also be seen that many fisher households have already diversified to a certain level.

One important thing that has become clear from this section is that fisheries cannot be viewed in isolation. Fisheries are an integral aspect of the Ghanaian economy and deserve attention. Changing the rules in relation to the resource will have societal consequences that need to be addressed. The path of alternative livelihood programmes turns out to not be very successful, not in Ghana and not elsewhere. Having an alternative, being able to make choices, is a way out of poverty. Typically the assets of fisher households need to be broadened, in order to really enhance their resilience. The education of the children is an important point to focus on, and points to a more longer term perspective.

Conclusion

In the first section of this chapter we took a closer look at the way beach seine fishing currently takes place in Ghana. Casting the net is a truly skilful job whereby the canoe crew first has to cross Ghana’s violent surf and then understand current, wind and other ocean signs whilst making sure that they do not come into conflict with their co fishermen from other companies. The pulling, which on average takes between three to seven hours is performed by crews of between twenty to ninety people and mainly requires strength. The closer the net comes to the shore the more people will help. These people are never refused and are always given some fish for their help. When the net almost lands we again see people doing more skilful work, diving, carrying the net in the water, and deciding when the net should close and how fast it should be pulled. The fish should not be able to escape from the net! This community function and the fact that women and children show up and help, the singing whilst pulling all shows how deeply embedded beach seine fishing is in the community life.

The case of algal bloom in Half Assini showed how vulnerable Anlo-Ewe migrant beach seine fishermen are. Because the algae occur in the near shore waters in such a way that fishermen are unable to drag their nets without tearing them, they are directly affected in their livelihood activity. The Ewe in Half Assini explained how they then either not fish or try to adapt their way of fishing in such a way that they can make a living. The fisheries officer of Half Assini explained how the fishermen would make use of nearby lagoons to get some fish. The EPA socio-economic impact assessment made it clear that a lot of local inhabitants assess or perceive the algae as affecting fish catch and quality. Apart from fishing the algae are also perceived to have negative environmental and health effects. The way people cope with such a stress differs. From the
socio-economic impact assessment we learnt that ‘people do various jobs at the time’ and that ‘they quickly switch energy to other occupations’ (EPA 1996: 25). However in the case of the migrant Anlo-Ewe fishermen we see that their alternatives are limited. The question then is: what do they do? The Nzema are unlike Fanti, Ga and Ewe are not specialised sea fishermen, so for them switching to another activity is more likely than for specialised sea fishermen – even more so in the case of migrants since migrants tend not to have access to farming land. Discussions with the Jomoro district director of agriculture showed us that other job opportunities for these fishermen are even more limited by lack of skills, lack of funds and more importantly by having another mindset. Farming is a longer process than fishing and the activity produces an immediate result.

As we also saw in this chapter, beach seine fishing is a business. Books are kept by net owners and we were able to analyse some of these for our research in order to get a better idea of the financial returns and the seasonality of the job. The data showed a different work approach in the three research locations, with crews fishing on contract or using daily sharing, and varying in size (fifteen to 65). Fishing on the basis of a contract is becoming less and less common in Ghana, due to declining catches. Crews often prefer to be given whatever has been caught the same day. This increases their control over their income although contract-based fishing does have the advantage of being able to make savings. As far as the net owners are concerned, fishing on the basis of contracts has the advantage of enhancing the reliability of labour. The catch data show how prices for the catch vary, depending on how much is caught on the beach (often depending on the season and weather). Crew fishing with a contract often take loans from their net owners. Meticulous records are kept of these loans. Advance payments and loans are then subtracted of the end amount. The two companies fishing under contract generated an average of around one million cedis. This is a large part of their annual income, the other being the fish, and food already shared to them during the year. It is difficult to compare this data with annual national income due to the fact that the fishermen are always also paid in kind. However, if we consider that crew members often earn anything between 5,000 and 40,000 cedis per fishing expedition we can conclude that this is not bad considering the average of 0.60 and 2.59 US dollar a day in 1999.

Declining catches impact on the income of the fishermen. However, crews seem to suffer more from this than net owners (as seen from the job satisfaction answers). This can be explained by how the catch is divided whereby net owners’ costs are always deducted first from whatever is caught, making their entrepreneurial risk much smaller. As their share of the catch is considerable, their earnings are not so much threatened as those of the crew (even though chop fish is often shared). Crew with special skills can take up extra roles and thereby enhance their earnings. From the household survey and the questionnaires we saw that some fishing households have diversified their incomes with other jobs. Fisher households are, however, quite specialised with between 80-90 percent only deriving income from fisheries. Hereby it must be considered that many fisher households have income coming from both men and women (who are active in processing). Having fish as part of their daily diets means fishing households do have highly nutritional diets. Access to other income-generating activities is limited due to the generally low level of education and the lack of access to land whilst on migration.

As we already saw from the discussion on how fishing takes place, fishing is more than just an income-generating activity. Fishing is a way of life, part of the people’s culture and identity. It also has functions and value for the community as a whole, as an
easy source of work, because it offers disadvantaged groups in society the possibility of becoming involved and earning some fish and because of the regular community fishing days. These factors should be included in discussions of alternative livelihood programmes. This chapter has shown that these projects are often based on false assumptions (both in practice as in theory) and have rarely been a success either internationally or in Ghana. It will be much more instructive to think in terms of developing supplementary income options in the fishing research locations since this would also tackle the problem of seasonality of catches. However, such thinking requires a governance perspective that is elevated above the current sector specific sector approach which focuses on day-to-day management. Before we come back to this, we will first focus on the importance and understanding of migration.