Report

Murky waters

The environmental and social impacts of shrimp farming in Bangladesh and Ecuador
Murky waters
Preface

In 2011, people want to eat food from all over the world. Many go to Thailand for their vacations, and want to eat the same prawn soup when they come back home. The fact that many imported goods that are consumed in Europe are produced at a high cost for people and the environment in other countries, far away from the tourist destinations, is easily forgotten. And where regulation is weak, demand is a major determinant of the conditions under which the goods are produced.

The production of tropical shrimp – often marketed as scampi, giant shrimp, gambas or tiger prawns – is neither environmentally or socially sustainable. Shrimp can be caught in the wild, or farmed. Shrimp fishing is highly unselective. Amongst all fisheries, trawling for shrimp generates the highest proportion of bycatches – the unintended capture of numerous other species of marine organisms.

Shrimp farms are typically established in artificial dams in mangrove ecosystems or on flooded agricultural land. Intensive and semi-intensive farming requires the regular application of feed, antibiotics and other chemicals. So called extensive farming in naturally flooded areas require less input yet occupy larger areas of mangrove ecosystem or agricultural land. Studies have shown that the value of the ecosystem services that are lost as a result of shrimp farming – such as biodiversity, protection against storms and erosion, carbon storage that mitigates climate change – greatly exceed the value of the shrimp that is produced. Scientists and civil society organisations have also documented environmental crimes and severe human rights violations related to the shrimp industry.

For many years already, the Swedish Society for Nature Conservation (SSNC) has advised against Swedish imports, marketing and consumption of tropical shrimp. Through its extensive international networks, SSNC has regular access to information from scientists, and organisations in the countries where the prawns are produced. This report presents the results of a new investigation, which has been carried out in 2011. We have taken a closer look at two countries and two different production systems: conventional export-oriented shrimp farming in Bangladesh, and organically certified shrimp farming in Ecuador.

The findings are alarming. In 2011, shrimp farming in both Bangladesh and Ecuador is evidently unsustainable and conflicts of resource use with local communities are commonplace. It is also obvious that compliance of the production with the requirements for organic certification cannot be taken for granted. Naturland is but one of the actors that certify producers who do not fulfil the criteria for organic aquaculture production. Unfortunately, shrimp from both Bangladesh and Ecuador can be found in European food stores.

SSNC provides assistance to environmental organisations that restore mangroves and extend support to affected coastal communities in shrimp producing countries. Our partners propose and bring into play environmental legislation while shaping public opinion against unsustainable shrimp production. But unless retailers and consumers actively opt out prawns, efforts in production countries remain insufficient.

We call on all consumers, importers, shops and restaurants to stop consuming, buying, selling and marketing tropical shrimp – regardless of whether they are certified.

Shrimp for which there is no demand will not be farmed. Where no shrimp are farmed, mangrove ecosystems and paddy fields can continue to contribut to biological diversity and food secuity. Abstaining from the prawn on the sushi plate contributes to preserving biodiversity and strengthening the rights of communities to livelihoods and decent lives.

Mikael Karlsson, president
Swedish Society for Nature Conservation, September 2011
Mangrove ecosystems are found in the zone between land and sea.

More than 50 percent of the total population in Bangladesh is landless. The number of landless people has doubled over the past three decades.

Pandalus are marketing tiger prawns from Bangladesh.
Introduction

Across European supermarkets today, tropical prawns line the aisles of frozen food sections, seductively winking out at passing shoppers. Deep-fried, barbecued, thrown into stir-fries, tossed onto salads and commonplace on sushi, we are eating more tropical prawns than ever before, despite rarely knowing where they are from or how they have been produced.

In recent years the production of tropical prawns, or shrimp, as they are also known¹, has rocketed; it is a multi-billion dollar business, expanding each year, with global production in excess of 1.3 million tonnes of shrimp per year², mostly from just a small handful of countries. At face value, the growth in popularity of tropical prawns in Europe, the US and Japan appears to be harmless; perhaps even a positive example of much-needed trade for cash strapped Southern economies. But there is a hidden reality that is not told; a story that starts thousands of miles from where the prawns are consumed. It is often a story of ecological damage, livelihood destruction and corruption. This is the tale of the shrimp’s long dark shadow.

As part of a global investigation into Swedish imports of tropical prawn, the Swedish Society for Nature Conservation (SSNC) commissioned investigations in Bangladesh and Ecuador.

In April 2011 the investigating team spent time in the shrimp-producing areas of Bangladesh to determine the true cost of the country’s shrimp production. The findings from Bangladesh are based on interviews and discussions with community members and relevant experts. Community members were identified and approached based primarily on their willingness to testify. Due to government sensitivity and restrictions on reporting openly on the shrimp industry in Bangladesh it was difficult to verify the claims of the villagers. Most interviewees that appear in this report are also affiliated with Nijera Kori³, a civil society organisation in Bangladesh that numbers some 200 000 people. Members of Nijera Kori have faced strong governmental intimidation in the recent past for their work in opposing environmental degradation and human rights abuses in the area. This repressive attitude towards reporting on shrimp issues in Bangladesh was exemplified during the course of this investigation, when a group of armed police were sent to monitor and even attempt to detain the team, as they walked around talking with the communities.

The situation in the shrimp-producing district of Khulna was disheartening. The scarcity of natural resources and the vulnerability to extreme weather events were striking. Violence and intimidation related to shrimp production were commonplace. Based on more than 30 years experience in working with coastal communities in Bangladesh, Nijera Kori confirms that the testimonies, contained within this report, are in no way unique; but are part of a broader pattern of negative impact already described by Nijera Kori and others.⁴ ⁵ ⁶

In summary, prawn production is aggravating and further degrading the situation of poor and marginalized communities in coastal Bangladesh.

In Ecuador, the team investigated the claims of organic shrimp. Certified types of shrimp have the backing of the global seafood industry, which claims that certification is the answer to the problems of prawns. The objective was to visit organic shrimp producers in Ecuador⁷ and to compare farming practices with the standards of Naturland and other actors supplying certified shrimp products to consumers. The investigators focused primarily on the three of the core principles of the Naturland standards, including “Careful selection of sites for aquaculture farms”, “Protection of adjacent ecosystems” and “Active avoidance of conflicts with other users of the aquatic resources”.

The investigation presents discrepancies between Naturland and the reality in and around organic producers

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¹ In certain countries bigger species are referred to as ‘prawns’ and smaller as ‘shrimp’. In other parts of the world, it is the other way around. According to the FAQ, a shrimp is a saltwater crustacean and a prawn is a freshwater crustacean. For the purpose of this report, the terms shrimp and prawn will be used interchangeably.
² Walsh, B. 2011. The End of the Line. Time Magazine 07/07/11
³ http://www.nijerakori.org/
⁴ Ibid
⁵ Nijera Kori 2011. Background Description of Polder 20
⁶ Interview with Sadika Halim, Right to Information Commissioner for Bangladesh. April 2011
⁷ According to the Naturland website there are four producers of organic shrimp in Ecuador. One of them, Langoumar, did not reply to the investigators calls. When the team arrived at the farm, the guard turned down a request to ask the owner over the phone to grant permission to visit. Another producer, Espuela did not let the team visit the premises, despite repeated requests from the investigators and from SSNC. The other two, Omaria and Biocestritiva were visited in July 2011.
in Ecuador. Beyond the violations of standards that the investigation team uncovered, there is also reason for concern regarding issues such as a lack of transparency, waterways being shared by certified and non-certified farms and shrimp feed protein content.

The findings of this report paint a grim picture of the state of the tropical shrimp industry, and the negative impacts that it continues to have on the environment and on marginalised coastal communities around the world, even when the production is certified as organic or by other standards that are supposed to guarantee sustainability or best practice.

Finally, this investigation illustrates the degree to which the problems identified on the ground in Bangladesh and Ecuador can be traced directly back to food that is on sale in some of Sweden’s best known stores, such as Ica, Vi, Coop and Daglivs.
The mangrove ecosystem

There are many good reasons why the world’s coastal areas need to be protected. They constitute only seven percent of the area of the oceans, but due to their productivity they supply half of the global fishery resources. In addition, the diversity of ecosystems such as mangroves and coral reefs is astounding. The catches of fish and shellfish from coastal areas help feed three billion people and, not least, constitute the main source of protein for 400 million people in the world’s poorest countries.

Mangrove ecosystems are found in the zone between land and sea along sub-tropical and tropical coasts. They are among the most productive ecosystems on the planet. With their labyrinths of stilt roots and trunks, the mangrove trees act as nurseries, food stores and shelter for fish, crustaceans, molluscs and many other organisms. They also provide protection against storms and waves, and reduce the risk of coastal erosion by stabilising the soil. Furthermore, like a filter the mangroves capture sediment and contaminants in water flowing towards the sea.

A common misconception is that the mangrove ecosystem only consists of areas with mangrove trees. In fact, the mangrove forest may also contain zones of salt and mud deposits. The ecology of salt flats or salt marshes is very complex and dynamic and their importance must not be underestimated. Occasionally these typically barren zones are flooded, allowing for reinvasion by marine animals, usually crabs and fish. The alternating cycles of life and death result in the release of large amounts of nutrients that become available when flooded. Saline lagoons and salt flats play a substantial role in the functioning, maintenance and stability of river deltas, coastal lagoons and embayments. They are also important habitats for migratory birds.

Oceans and coastal zones have an enormous capacity to store carbon. Carbon that is taken up by marine animals and plants can accumulate in sediments on the ocean floors. Sediments in mangrove forests and the associated salt marshes can store carbon for thousands of years. Stable marine and coastal ecosystems thus help mitigate climate change.

Millions of people depend on mangroves for their livelihood. They fish, collect shellfish, building materials and firewood, and use plants from the mangrove forests as medicines. Mangrove forests and salt marshes are disappearing at an alarming rate. About half of the mangrove forests that once existed are already gone. Shrimp farming has been the main reason for the loss in many countries, and the industry continues to pose a serious threat.
Bangladesh

Surface: 147,570 km² (one third of Sweden)
Population: 164.4 million
Capital: Dhaka
Government: republic
Natural resources: natural gas, arable land, timber, coal
Life expectancy: 67 years
Median age: 23.5 years
Under-5 mortality: 57 per 1,000
Adult literacy: 55 per cent
Unemployment: 5.1 percent (40 percent of the population is underemployed)
HDI-ranking\(^1\): 129/169
CPI-ranking\(^2\): 134/178 (CPI for Bangladesh is 2.4, CPI for e g Sweden is 9.2)
Shrimp production: 102,854 metric tons (2008-2009)
Shrimp export: 50,368 metric tons (2008-2009), together with other frozen food shrimp exports contributes with less than 1 percent to export earnings\(^3\)
Mangrove ecosystem: Approximately 200,000 – 250,000 hectares of mangrove forest have been destroyed for shrimp cultivation.
Fisheries: Fish and fisheries have always been important for many people in Bangladesh, generating income for millions of people and constituting 60 percent of animal protein intake.\(^4\)

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\(^1\) Human Development Index (HDI) is used to measure the prosperity. It is a comparative measure of life expectancy, literacy, education and standards of living for countries worldwide. To compare, Sweden's position is 9/169.

\(^2\) Corruption Perceptions Index (CPI) measures the level of corruption in the public sector. The CPI is an aggregate indicator that compiles aspects of corruption such as bribery of public officials, kickbacks in public procurement, embezzlement of public funds, and effectiveness of public sector anti-corruption efforts.

\(^3\) Statistics from the Trend Index, Export Promotion Bureau, Ministry of Commerce, Government of Bangladesh

Shrimp production in Bangladesh covers an area of 217,877 hectares, and is focused in two areas on the coastline. Twenty percent of national production takes place around Cox’s Bazaar in Chittagong in the South Eastern corner of Bangladesh, and the remaining 80 percent close to the Sunderbans mangrove forest in the South West, within the districts of Khulna, Bagerhat, Jessore, Narail, Gopalganj and Noakhali. As a nation, Bangladesh is one of the top ten global prawn producers, supplying roughly 55 percent to the EU and 35 percent to the USA, with the remainder going to Japan.

Tropical shrimp has always been an important part of the Bangladeshi diet, especially so in coastal regions, where both marine wild-caught and fresh-water shrimp species, cultivated alongside rice crops in paddy fields, have traditionally contributed to a varied diet in the coastal and riverine areas. These species include harina, chali, bagda, rashna, chamni, chaka and galda shrimp to name a few.

With the birth of global trade in tropical shrimp however, land use patterns began to change as urban entrepreneurs, wealthy landowners and transnational banks alike sought to boost profits and Bangladesh’s national income. In the early 90s the so-called blue revolution was born. By 2003-4 it was reported that $378 million were earned from this sector alone, marking it out as one of the most profitable export industries in the country, as black tiger bagda shrimp (Penaeus monodon) and sweet-water galda shrimp (Macrobrachium rosenbergii), became sought after overseas. Shrimp farming had become big business and tales of enormous profit margins fuelled the expansion.

In the Khulna district, shrimp farming has converted extensive areas of farmland to export-oriented shrimp farming.
Sunderban: The beautiful forest

Spanning almost 10,000 square kilometers across two countries and designated as a UNESCO World Heritage site, Sunderban is, by far, the largest mangrove ecosystem in the world. This mosquito-infested land of tangled roots, mud flats and saline water, provides sanctuary to some of the world’s most endangered mammals. The vulnerable Irrawaddy dolphin\(^{17}\), endangered Gangetic dolphin\(^{18}\) and saltwater crocodile are amongst the myriad of animals which thrive in the waterways of the flooded forest. Sandy areas close to the sea provide nesting areas for olive ridley turtles, whilst further inland dry areas provide precious habitat for the largest remaining population of Bengal tigers on earth, with a population estimated to be in excess of several hundred\(^{19}\) individuals that reside within the forest’s dwindling borders. 58 species of mammal, 55 species of reptile and around 315\(^{20}\) bird species live in the Sunderbans.\(^{21}\)

It may seem an inhospitable place, but the salty, tiger-roaming habitat of the Sunderbans is much more than a conservationist’s game reserve. For hundreds and perhaps thousands of years, the immense biodiversity of Bangladesh’s coastal forests has supported and underpinned the livelihoods of communities living close by to them, who have long depended upon the mangrove ecosystem for food, shelter and income. Indeed, the vast flooded forest, whose name ‘Sunderban’ translates as ‘beautiful forest’, is thought to be named after the Sundari tree, one of 30 species of tree commonly occurring within the forest, and a species that offers excellent timber for construction. Other construction materials for housing also grow, including gol pata or nipa palm, commonly used for building house roofs. Honey, beeswax, crustaceans and mollusks are other resources regularly harvested from the Sunderbans along with an estimated 150 fish species, which form a crucial role in coastal diets of communities.\(^{22}\)

Despite the respect traditionally given to the ‘beautiful’ forest, in recent decades Sunderban forest areas across Bangladesh have been decimated and degraded, and much of this has been caused by a growth in shrimp farming for export, driven by a growing demand in Europe and the United States. The degradation is an ongoing problem that to this day threatens to further degrade the Sunderbans, and the communities who depend upon it.\(^{23}\)

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17 IUCN Red List of Threatened Species 2011 http://www.iucnredlist.org/apps/redlist/details/15419/0  
18 IUCN Red List of Threatened Species 2011 http://www.iucnredlist.org/apps/redlist/details/41756/0  
19 Forest of Tigers\http://www.sundarbanbiosphere.org/html_files/fauna.htm\  
22 Gain, P. 2006. Stolen Forests SEHD, p. 82  
23 Interview with Javed Sana, nipa palm collector, Harinagar District Bangladesh
Chokoria Sunderban: The forest with no trees

In the southwest of Bangladesh, close to Cox’s Bazaar, Chokoria Sunderban once sprawled across 8,500 hectares of land. Like mangroves around the South Asia, this forested area was once tremendously diverse, providing sanctuary to hundreds of species; including tigers and deer, a myriad of commercially important fish species, as well as providing timber, thatch, medicine and shelter to the communities who lived around it. But shrimp thrive in muddy, brackish water that is commonly found in the mangrove ecosystem, so with the new-found hunger for shrimp in industrialized countries, and a belief that shrimp farms would help create development; the World Bank and Asian Development Bank funded projects in the 1980s that destroyed large sections of the forest, helping to transform a biodiversity treasure-trove into a flat tree-less landscape interrupted only by the occasional root or irrigation canal drain that feeds into the myriad of shrimp ponds. The clear-felled devastation is undisputed. Even the Asian Development Bank, who in part financed the mangrove destruction that took place in Chokoria, admits that “the clearing of mangrove in the Chokoria Sunderbans under the project has clearly reduced shrimp/fish breeding and nursery grounds in the area.”

It is painfully ironic that the destruction and replacement of the mangrove ecosystem in Chokoria for prawn farms took place ostensibly to help boost local fishery production partly through prawn farming, in the mistaken belief that this would alleviate rural poverty.

The main objectives were to promote shrimp aquaculture production to generate foreign exchange earnings, increase the availability of fish for domestic consumption, and enhance incomes and employment in the rural areas.

Chokoria Sunderban: The forest with no trees
Dhaka, April 2011
Philip Gain, Executive Director of the Society for Environment and Development in Bangladesh

There is a direct link between shrimp farming and mangrove loss. If you look at what happened in Chokoria Sunderban, it was a unique patch of 8500 hectares. After shrimp farming started it was completely cut. When we replace a forest like that with prawn aquaculture, we lose everything. We lose all biological diversity; Chokoria used to have monkeys, crocodiles and it was a rich breeding ground for fish. Now, it is barren, from a distance it looks like a desert. The chain in nature is completely broken, no tree stands, no animals, no fish, nothing is left.

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Shrimp production have resulted in extensive areas of infertile and useless land.
The cultivation of prawns for our plates poses yet another silent threat to Bangladesh’s marine environment: the collection of wild shrimp fry used to stock shrimp ponds with. Approximately 60 percent of all the shrimp grown in Bangladesh’s vast network of ponds originate from wild-caught fry, and the process used to catch these is deeply destructive. Every day tens of thousands of people trawl the canals, muddy channels and beaches of the Sunderbans and Cox’s Bazaar with very fine nets, in search of shrimp fry. Once found, these tiny larvae will be sold onto a succession of middle merchants before starting life in a shrimp pond.

But in the process of catching the shrimp fry, enormous quantities of other marine life are caught and disposed of. These include juvenile fish that are vital for coastal ecosystems and depended upon for food by rural communities. For every 100 tiger prawn fries that are caught, up to 5,000 other types of fish and zoo plankton are killed, and left to die on the muddy riverbanks where the fry-collectors gather to sort their catch. The knock-on effects of this fry-harvesting practice on riverine ecology and in turn those who depend upon river systems for their food are profound. According to Rizwana Hassan, the Director of the Bangladesh Environmental Lawyers Association and a Goldman Prize winner, several million coastal people in Bangladesh eat protein deficient meals and shrimp farming plays a central role for this tragic situation. The kai, magur, shoal, taki, royna and bele fish are now thought to be extinct which, according to Hassan, can be linked back to shrimp fry collection.
Shrimp fry collection has been cited by some as a benefit of shrimp farming, offering cash income and thus a degree of empowerment to women, who would otherwise have no work. But far from supporting people, shrimp fry collection is widely seen to be difficult, dangerous and unrewarding. Furthermore, fry collection is a widespread employer of children and women who are struggling at the very margins of society to survive, often after having lost their livelihood due to the negative impacts of shrimp farming in the first place. Rather than lifting them out of poverty, many women are compelled to collect fry as bonded labourers; obliged to pay back loans under extremely high rates of interest to middlemen or ‘dhadon’ as they are known. Stories of stillbirth, skin diseases and other sickness suffered by pregnant women and children, caused from wading in the water for hours every day, are commonplace.

As the shrimp fry numbers have decreased over the years in the canals and river channels close to farmland, it is alleged that the fry collectors and the middlemen who exploit them, have ventured further afield, travelling by boats, deep into protected Sunderban areas, where experts claim they are annihilating juvenile fish numbers, reducing biodiversity and undermining the function of marine ecosystems in the heart of the world’s largest remaining mangrove forest.

For every 100 tiger prawn fries that are caught, up to 5000 other fries, larvae and zoo plankton are killed.

For each shrimp larvae that is caught, some 50 fish larvae and other organisms are thrown away to die on the shores of the river.

Kamarkhali, April 2011
Montosh, boat driver

When they use mosquito net to catch shrimp fry, a lot of other kinds of fish get killed by this. When they sit down to collect the shrimp fry, they throw away the rest of the catch on the river bank. All the small fishes are dying, they are not getting any chance to grow. In the river these days you get hardly any fish. It’s almost down to nothing.

Charbandhah, April 2011
Biddut Sardar, shrimp fry collector

Over the last few days I have earned around Taka 10-20 (10-20 cents). We will buy whatever we can get with this money. Where will we get money to buy the things we need? There is no future in this but we have to live on this only! What else can we do about it?

36 Murtaza, B. 2004. Women in Shrimp Cultivation and their Insecurity in the SouthWestern Coastal Belt of Bangladesh. In Participatory Planning and Environment Management for Salinity Affected Coastal Regions of Bangladesh, p. 78
37 Kharam, K. 2010. Women Shrimp Fry Collectors at Joymonir Thota, from Investigative Reports Environment and Human Rights, Edited by Gain, P. SEHD Dhaka
38 Interview with Philip Gain, Executive Director of the Society for Environment and Development in Bangladesh. April 2011
The demand for tropical shrimp from the EU, US and Japan is fuelling the expansion of shrimp farming.
The low lying coastal lands of Bangladesh are frequently subjected to extreme weather events, cyclones and storm surges rolling in from the Bay of Bengal and Bangladesh’s coastal people have learned to adapt to the challenges that nature throws at them. The battle against saline intrusion onto otherwise non-saline fertile lands is a constant one. Where there is coastal forest the ecosystem is more resilient; the mangrove ecosystem provides a natural sponge-like buffer against the effects of cyclones. Where forests have been destroyed, as in the Chokoria Sunderban, the impacts of such extreme events are exacerbated. With the advent of climate change, extreme weather events may increase in number and strength, posing severe risks for coastal communities in Bangladesh.

To maintain valuable agricultural land in low-lying coastal Bangladesh, one simple but fundamentally important design is that of the embankment: high-sided walls built in the 1960s that protect fertile flat lands and villages from salt water intrusion. But these historically effective barriers against storms are beginning to fall apart, with dire consequences for people who depend upon them; and it is claimed that a major cause of their decay is shrimp farms.

Sluice-gates in the embankments provide a way for agriculture farmers to control when and how much water they choose to irrigate or flood their lands with. Farmers will, for example, commonly look to irrigate their lands only when fresh water comes in from upstream, and close the gates when the salty water flows up from the Bay of Bengal.

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Flooding, salt-water intrusion and increased vulnerability to extreme weather

Paddy fields that used to provide livelihoods and food security for many villagers can be turned into saline ponds, literally overnight. The consequences are disastrous.
The reverse is true for shrimp farmers, as shrimp farms need regular supplies of brackish or salty water to keep shrimp ponds active, and in order to do this, shrimp producers in Khulna typically insert pipelines or sluice gates into the embankment walls without permission, enabling water to flow back and forth; and many hectares of valuable paddy can be turned into a saline pond for shrimp, literally overnight.

When the land is inundated with saline water, almost all crops and fruits are unable to grow, wreaking havoc with farming communities who depend upon these staple crops to survive.

Sluice gates regulates irrigation and flooding of the land.

When the land is inundated with saline water, almost all crops and fruits are unable to grow, wreaking havoc with farming communities who depend upon these staple crops to survive.

The excess of sluice gates in the embankments, due to prawn farming also dramatically reduces the ability of walls to withstand periodical storms. Cyclone Aila hit Bangladesh on 25th May, 2009 and aid agencies estimated that 3.9 million people were made homeless and approximately 140 000 hectares of farmland were destroyed in an instant. Around the shrimp farms of Dacop District, the embankment walls around the rivers were rapidly breached, sending saltwater pouring into thousands of hectares of fertile land and wiping out villages in a matter of minutes.

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39 SRDI and Bangladesh Government 2009. Soil Salinity Report
40 Onneshan, U. 2009. Cyclone Aila Initial Assessment Report with focus on Khulna District. Forest Peoples Program
41 Red Cross and Red Crescent Operations update Cyclone Aila November 9th 2009
Khulna – the shrimp district

The district of Khulna lies in the far south-west of Bangladesh, a low-lying area of densely populated fertile lands, and interweaving river channels that border the great forest of Sunderban. But in recent years this farming district has changed beyond recognition. What were once lush paddy fields and grazing areas capable of sustaining countless families have become muddy deserts, watery wastelands devoted to the pursuit of export-orientated prawn production.

For over a decade now, Khulna has been at the center of Bangladesh’s prawn industry; it is estimated that 73,000 hectares of land are devoted to shrimp farming outstripping in size even the farms built on the forested lands of Chokoria around Cox’s Bazaar. In the districts around Khulna however, the farms have been built not on forests, but on farmland, and according to civil rights organizations, the wide-ranging consequences of this have been catastrophic.

What were once lush paddy fields and grazing areas capable of sustaining countless families have become muddy deserts, watery wastelands.

In 2004, the Environmental Justice Foundation (EJF) published a report which described the shrimp-producing regions of Khulna in South-Western Bangladesh as an area that was besieged by violence, intimidation and corruption and where shrimp industry rode roughshod over the lands and in some cases, even the lives of communities caught up in the cross-fire. Since then, there has been little if any information released on the situation in the region.

For the purpose of this report, the investigation team visited communities in the areas around Khulna, to record the testimonies and experiences of those who live there. The area known as Polder 20 in Upazila Paikgacha district, close to Khulna is home to around 1,220 people on 2,400 hectares of land. Polder 20 is at the epicenter of a struggle in the region for farming communities to regain their lands and their livelihoods from shrimp farmers. As farmers risk having their land flooded, the flood gates have become flash points for threats, violence and intimidation; and as the team was told during our investigation, it is a scene that allegedly repeats itself in areas like Polder 20.
According to Nijera Kori, landless farmers have been usurped and driven off their land, forced to survive on the margins of once-fertile land; they are cut-off and surrounded by flooded ponds full of shrimp, salty barren wastelands that were once theirs to farm. Despite owning land-holding certificates, families who have lived off the land for generations told the team that they face continued violence, intimidation and hardship if they resist the forcible theft of their land. If they approach local authorities, an allegedly corrupt police administration and judiciary often awaits their complaints. Amnesty International’s reports on Bangladesh from 2008-2011 confirm that cases of arbitrary arrests and detention, excessive use of force, torture and other violations of human rights are commonplace. A common tactic employed by the pro-shrimp administrations, described to the team by various interviewees, is to lay criminal charges, not against the shrimp farmers or the thugs who terrorise the communities and steal their land,

45 Interviewees in Bangladesh repeatedly presented allegations of police corruption to the investigators
46 According to Transparency International’s 2010 Corruption Perceptions Index, Bangladesh scores 2.4 on a scale from 10 (highly clean) to 0 (highly corrupt). The country is currently ranked 134 out of 178 countries reviewed by Transparency International

People have gathered in Polder 20 to talk about the impacts of the shrimp industry.
but rather on those who complain about being thrown off their land in the first place, effectively silencing the victims into submission. The sheer strength of the claims of the villagers, echoed in the words of every community member spoken to by the team during this investigation, strongly suggests that the violent patterns documented by EJF in 2004 still remain. The abuses documented 2011 by the team in places such as Polder 20 are related to the mass cultivation of shrimp; products that once harvested, are frozen, packaged and sold for export to our supermarkets and dinner tables in Europe.

**People who are poor, and powerless do not have the ability to hold onto their land.**

48 In September 2011 Gautam Mondol has not yet been convicted on any of the charges against him.
The negative patterns of land grabbing and intimidation recorded by the team in shrimp farming areas around Khulna, clearly affect entire families whose lands and livelihoods have been destroyed. According to Nijera Kori and experts in the field of women’s rights however, there is allegedly a particularly negative impact towards women, arising from the spread of shrimp aquaculture ponds.49 50 51 These factors may arise for a variety of reasons; in areas of shrimp farms around Khulna it is alleged that women for example have become more vulnerable; they are forced to walk further to gather water, firewood and food, and they are more likely to be alone, with the husbands frequently working in cities far away due to loss of their farmland. Furthermore shrimp farm owners often employ men from outside of the local communities, whose job it is to farm and police the shrimp ponds themselves, creating a local demographic imbalance and provoking unease in a tightly-knit and traditionally conservative, rural village society. According to Nijera Kori, allegations of rape and even kidnap of women are relatively commonplace, but are often hard to prove. In the event of an attack or harassment, if a woman should complain, it is also alleged that the judiciary is much more likely to side with the male-dominated and pro-shrimp farming elite than the female victim; creating both a feeling of hopelessness on the part of women, and a sense of impunity on the part of shrimp farm employees, who are thus potentially able to carry out harassment and or violent crimes with a degree of impunity. Violence towards women in Bangladesh is sadly widespread, but nonetheless Nijera Kori, working in various coastal areas of Bangladesh, claims that the host of factors described above, has created a situation where women are more likely to be victims of sexual violence when industrial shrimp farming is taking place in their area.52

Allegations of rape are obviously the most extreme abuses towards women documented in this research, but like Nigera Kori, Sadika Halim, Right to Information Commissioner for Bangladesh and an expert on the rights of women across the country, claims that such testimonies are not isolated, but form part of a broader pattern of abuse across the shrimp sector.53

Proponents of the shrimp industry frequently suggest that employment in fry catching, pond clearance and processing-plant production lines provide women with a degree of empowerment through wage-earning potential. But experts and interviewees that the team spoke to dispute this. They maintain that the shrimp industry in Bangladesh frequently undermines the rights and security of women at all stages of the shrimp production process. Sadika Halim is one of them: “Several studies on shrimp farming have unearthed evidence that clearly suggests that it is the women and children of shrimp farming communities who suffer the most, socially and economically, as well as through the violation of their human rights, being subjected to various forms of physical violence, including rape and torture.”54

Dhaka, April 2011
Sadika Halim, Right to Information Commissioner for Bangladesh

Women are facing different kinds of harassment and violence; a very miniscule number of women are going and reporting it to the police; the law enforcement agencies are partisan and corrupt. Those who perpetrate the violence are always powerful. They will use their political power and will bribe their way through and will keep the law enforcing agencies under their grip. When these women go to the police, they do not get any justice and they lose all hope and the rest do not bother to go and report such cases.

Shrimp farming from a women’s rights perspective

Murky waters

49 Interview with Sadika Halim, Right to Information Commissioner for Bangladesh. April 2011
50 Murtaza, G. 2004. Women in Shrimp Cultivation and their Insecurity in the Southwest Coastal Belt of Bangladesh. In Participatory Planning and Environmental Management or Salinity Affected Coastal Regions of Bangladesh, p. 78,


52 Nijera Kori’s claims are supported by e.g. Murtaza, G. 2004. Women in Shrimp Cultivation and their Insecurity in the Southwest Coastal Belt of Bangladesh. In Participatory Planning and Environmental Management or Salinity Affected Coastal Regions of Bangladesh, p. 78,

53 Interview with Sadika Halim, Right to Information Commissioner for Bangladesh. April 2011
54 Bangladesh Centre for Advanced Studies (BCAS) 2001. Fry Collector’s Livelihood Study

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Women fry collectors, for example, frequently work for little or no income, often in a relationship of bonded labour with fry traders or ‘dhadon’ who they are frequently indebted to. Even if they are not employed, it is female members of the household who often have to work harder because of the damaging impacts of shrimp farms; forced to look for fuel, non-salinated water and food from far away.

Numerous shrimp processing plants surround the river on the outskirts of Khulna. Heavily guarded and suspicious of foreign observers, access to these plants was impossible for the team. According to the research carried out by Sadika Halim, women in processing plants face further intimidation, financial insecurity and health risks, as they prepare shrimp for export to the EU and USA. Processing plants frequently employ women with casual labour contracts, promoting financial insecurity and preventing them from forming unions or other platforms from which they might fight for better standards in the workplace. Women often fall victim to harassment and prostitution with factory supervisors to help guarantee their jobs in the absence of formal contracts.

According to Sadika Halim it appears that women see employment in shrimp, whether catching fry, cleaning ponds or working in factories, as the only resort in a ‘no-choice situation’ where opportunities for productive engagements are scarce. “Shrimp production has not only led to economic deprivation and ecological degradation of the coastal areas but has also marginalized the poorest of the poor who are mostly women”, concludes Halim.

Roskok, Khulna District, April 2011
Rafiza

This boy proposed to me to have a relationship but I did not respond to him. Then he started threatening to kill me. He forced me to have sex with him. It happened around my home, in the shrimp farm. This kind of violence and rape often takes place in this area. There are a lot of workers who come from other parts of the country. The shrimp farm owners do not say anything, to keep the cheap workers happy. A few months ago another girl was raped by a worker. But the farm owners help and protect their workers. For a poor girl like me, it is not possible to run a case against the rapist. So these people never get punished and we cannot fight against this violence.

Unlike many, Rafiza did go to the police, and her entire family now lives in fear of retaliation by the shrimp farmers.

Before I could go to the police these people went to the police before me. They had filed a case against me, my parents and another uncle of mine. They kept pressurising my father and brother. They told us that “you people are like flies and we can just blow you people away anytime. We will kill you and cut your body in pieces and throw your body into the river. Just drop the case” They are still threatening us.
Is shrimp farming development?

Advocates of shrimp farming claim that the development of an export-orientated shrimp industry in remote rural regions of coastal Bangladesh is a fundamentally good decision, one that brings in much-needed foreign revenue and will automatically help to improve local livelihoods, lifting local economies from self-sufficiency into cash economies, that are shared by much of the rest of the world. The World Bank and Asian Development Bank helped to kick-start export-led aquaculture in Bangladesh through this free-trade and export-oriented ideology; and both USAID, and the UK’s Department for International Development, amongst other foreign donor agencies, have over the last decade continued to invest in, subsidise and encourage the growth of the shrimp export sector in Bangladesh with the same kind of rationale. But beyond the stories of mangrove destruction, rape and intimidation outlined above, it is clear that aquaculture in areas such as Khulna has fundamentally transformed and degraded the once-fertile lands, capable of sustaining communities, into saline, infertile shrimp monocultures. The shrimp-export model of production has both directly and indirectly eroded the livelihoods and basic foundations of survival for many communities; not seldom forcing them to the margins of survival.

For Khushi Kabir, co-ordinator of Nijera Kori, the testimonies recorded by the team in and around Polder 20, are stories that she hears all too often replicated in households across the region where shrimp cultivation has ridden roughshod over people’s farms, homes and livelihoods. For Kabir it is an important lesson for those who still seek to promote the development of export-led aquaculture as a blanket-solution solution to rural poverty in countries like Bangladesh.

Dhaka, April 2011
Khushi Kabir, co-ordinator Nijera Kori

In Bangladesh everything is interlinked, you live off the land, your school is in the village, your family. It’s an interlinked and inter-related system, living off the land or the water if you’re a fisherman. But with shrimp farming you lose all that. So everything has been completely destroyed, the very system that sustains the family. Today they [the affected communities] are just trying to forage for some kind of survival. Export-led shrimp aquaculture is anti-development. People who are living in areas where shrimp is being cultivated, are being completely deprived of their livelihoods, of their lives often, because there’s so much violence. It’s a system that is completely non-sustainable, and just to provide some food for people to be able to eat cheaply in the northern countries. How can that be development?

People who are living in areas where shrimp is being cultivated, are being completely deprived of their livelihoods, of their lives often, because there’s so much violence.
It takes just a few minutes by passenger boat to travel from Polder 20 on one side of the river, to the area known as Polder 22 on the other, but the differences between the two areas are striking. Those who promote and defend the commercial shrimp industry often argue that shrimp farming provides a better source of livelihood for the local communities, than does agriculture or fishing, but the images from Polder 22 tell a different story. In Polder 22 there are no shrimp ponds, and instead there are trees, fruits and vegetables growing in every home. Children attend schools and people can be seen labouring in the fields all around, harvesting food crops to eat and sell.

Polder 22 is an exception in this region, because the communities have successfully managed to rid themselves of shrimp farms. It is a battle that was hard-fought. Walking along the river path in Polder 22, one passes a memorial to those who fell, including Korunamoi Sardar, murdered and maimed by hired thugs and security forces who tried to force communities to accept shrimp farms on their land. The people of polder 22 held out however, and against all the odds, today the place is one of the only non-shrimp farming areas in the region, provides striking evidence that there are indeed viable alternatives to prawn farming for coastal communities in Bangladesh.

Is there an alternative to shrimp farming?
A visit to Polder 22

Polder 20

Modhukhali, April 2011
Noorjahan Begum, farmer

Our life, it is very hard to survive. It is hard to fathom if you are alive or not. We live hand to mouth, often we go hungry. We are living in a very difficult situation with our family now. Poor people of this area are living in severe situation. If we do not have these bare minimums then how can we survive?

Parmodhukhali, April 2011
Shantilata Biswas, farmer

We fought and managed to get saline water out of this village for two years only, but now they have fought with us have got saline water back in again. If we go near the ponds they beat us up, they attack cattle if the animals go there to drink the water. What are they [the cattle] going to eat? Can you see any grass anywhere? We used to be able to grow our own vegetables but now we have to buy everything. Because of saline water. We just cannot grow anything. There are days when we do not have anything to eat, we starve the whole day. They are all outsiders doing it, increasing their wealth. We are poor people, what can we do? They are grabbing land and getting rich, we are the ones to suffer and we are suffering.

99 Korunamoi Sardar was murdered by private security forces on November 7th 1990 whilst she formed part of a peaceful protest, at the orders of a businessman Wajed Ali, who was intent on forcing aquaculture into Polder 22. Ali died before he could be brought to justice. Over a decade later 12 others were subsequently convicted of her murder, but still evade jail to this day. In Nilufar, A. 1997. Innocent victims: The women of Bangladesh are paying a heavy price for resisting the powerful interests in the shrimp farming industry, Samudra 17:19-21
Sayedkhali Village, April 2011
Taiub-Ur Rahman, farmer

In my village (Polder 22) you can see agricultural lands all around you. People get to cultivate their land according to their own wish. We have sesame, lentils; we are growing watermelon, pumpkin. After a few days we will also get bitter gourd, okra, eggplant and other vegetables. Besides these we also get rice, we get to harvest rice twice a year. Beside lobster, we also raise different types of carp and other fishes. We did not have too many cattle, but now almost all the houses have cows, goats. We also have poultry, goats, and lambs here. We also have ducks. Just look around you, we have lots of fruits, mostly seasonal fruit trees, lychees, mangos, jackfruit etc. We also have coconut.

Horinkhola, April 2011
Urmila Sardar, farmer

Where there are no shrimp farms, the environment is better in every way. It is better for children, better for the adults. It is better for the trees, cattle, better for everyone. After our movement against the shrimp farms and we closed down the farms, the trees that were almost dead they started to live again, we could grow vegetables and rice, we could also get milk and fodder for our cows. Our kids are going to school and we have basic things to live now. The overall atmosphere got better. We have peace.
In a further twist to the allegations of ecological destruction and human rights abuses gathered during the course of this investigation, the team also recorded disturbing evidence to suggest that some prawns from Bangladesh pose a health risk, not just for the life in the mangrove ecosystem and the farming communities that are impacted in their making, but also for those who eat them.

‘Salim’, as we shall call him, is a prawn farmer who claims to both use and sell illegal pesticides in his shrimp ponds; prawns which will go onto supply the shrimp processing factories of Khulna. One pesticide presented by Salim goes by the brand name of Hildan, one of dozens of commonly-used household names to describe the powerful insecticide endosulfan. Outlawed under the Stockholm Convention60 and banned in over 80 countries around the world including the EU, endosulfans are acutely toxic reaping havoc with marine ecosystems, workers and communities who are exposed to it, and potentially consumers, who may inadvertently eat products contaminated with it.

The Intergovernmental Forum on Chemical Safety has classified endosulfan as an acutely toxic pesticide.61 The European Union’s risk statements for endosulfan62 state that it is:

- Harmful in contact with skin
- Very toxic by inhalation
- Very toxic if swallowed
- Harmful to the environment
- May cause long-term adverse effects in the aquatic ecosystem

In the long term, endosulfan also poses serious health risks for human beings; it is an endocrine disruptor, causing

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60 The Stockholm Convention on Persistent Organic Pollutants was adopted 22 May 2001; http://chm.pops.int/default.aspx
61 GFEA-U 2007 cited in Endosulfan briefing PAN
62 Ibid
breast cancer cells to grow; it interferes with male hormones, suppresses the immune system, promotes allergic responses; it is also linked to neurological effects such as epilepsy and may cause Parkinson disease. Birth defects have also been seen in laboratory studies and in human populations exposed to endosulfan.63

Given the severe impacts of endosulfans on workers, the environment and potentially consumers as well, allegations that this substance may be in regular use are potentially very serious for the Bangladeshi shrimp export industry and for retailers who continue to sell Bangladeshi prawns. It is however important to note that during this investigation, the team interviewed only one person, who willingly showed us a bottle of endosulfan and described its common availability and use, which of course is not necessarily a representative. But in 2010, a UK film crew producing a documentary on the seafood industry64, also found further evidence of alleged endosulfan use, again from an interview with another shrimp pond farmer in the region around Khulna, which supplies EU markets. At a national level, consignments of Bangladeshi shrimp destined for Europe have also been found to contain excessive levels of potentially harmful chemicals, including phosphates and nitrofuran antibiotics.65

In a further twist, it is also alleged that unscrupulous traders are able to adulterate prawns destined for Europe. In 2010 a UK television crew filmed a shrimp trader as he demonstrated the adulteration of shrimp in the Khulna area: injecting each prawn collected from ponds with dirty water to increase weight and thus profit. The trader claimed that 70 percent of all prawns supplied from the principle shrimp farming areas in the Khulna region are subject to a similar kind of adulteration treatment by local traders.66

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63 Ibid
64 'Fish Unwrapped' Dispatches Channel 4 2011
65 Swiss Federal Department of Economic Affairs DEA Federal Veterinary Office FVO International
66 'Fish Unwrapped' Dispatches Channel 4 2011
Dozens of prawn factories operate in the vicinity of the cities of Khulna and Cox's Bazaar in Bangladesh. This multitude of companies, often trading numerous brands of shrimp under one roof, derive the bulk of their income through the processing and export of farm-raised shrimp to shellfish brokers, retailers and ultimately consumers in industrialized countries. Around 55 percent of shrimp raised for export from Bangladesh make their way to the European Union, and 35 percent to the USA. The rest are largely sold to Japan. According to export statistics, Belgium and the UK are by far the largest markets in EU for Bangladeshi shrimp. This statistic is however misleading, as prawns destined for Belgium and the UK are re-sold to other EU countries, including Sweden.

The investigators contacted buyers of shrimp from Bangladesh around Europe. Several buyers claim that they can trace the precise origin of the shrimp they buy. An investigation carried out in late 2010 however, demonstrated that claims of traceability for prawns cultivated in individually owned ponds in the region around Khulna are frequently false; with prawns changing hands three of four times before finally ending up at the factory gates. The investigators observed that the sales receipts exchanged between shrimp traders and factories supplying the EU, typically confirm the quantity and quality of shrimp that are sold, but not the farm names or even regions from where they originate from.

Disturbing allegations of adulteration and lack of traceability cast a question mark over European importers in Sweden who continue to source shrimp from Bangladesh.

As part of this investigation, the team chose to focus on the supply chains of two prominent shrimp companies based in Khulna. In common with most shrimp factories, Sobi Fish Processing Industry and Jalalabad Frozen Foods, hereafter known as Sobi and Jalalabad respectively, source their shrimp through a complex network of traders at varying levels around Khulna. In 2010 investigators from the UK followed prawns from the local markets around Polder 20, and through a combination of interviews with traders, witnessing sales and observing trading receipts, they found that prawns from Polder 20 make their way to the gates of various processing plants on the outskirts of Khulna, including the two companies described above. Sobi and Jalalabad in turn supply many traders around Europe; prawns from these companies may for example enter the Swedish market via the Netherlands.

Some shrimp export companies claim to source 100 percent from their own ponds, in order to guarantee transparency. Yet, in order to meet the continual demands of European consumers during low periods of production, the investigators discovered that companies will also revert back to the traders described above, in order to boost their production and meet the targets demanded by importers. Both Sobi and Jalalabad for example told our researchers that they also supply Seamark, a vast company with headquarters in the UK, a $250 million turnover, nine brands of shrimp and processing facilities and ponds in the Cox's Bazaar area. Incredibly Seamark claims on its website that it has a “total traceability control system”. If Seamark does source prawns from Sobi and Jalalabad however, the traders who in turn supply these factories in Khulna, have no idea of the precise origin of each batch of prawns that they sell; in apparent contradiction to the claims of this company.
Following the trail from Bangladesh to Sweden

Daglivs
Daglivs supermarket is part of the Swedish Cooperative Union, a utility co-operative with 60 member organizations and 2.9 million members. Daglivs sources some of its prawns from Galana seafood company in Belgium, who in turn told the team that they source from Modern Seafoods in Khulna, an area that processes many prawns from the conflict areas described above. Galana presented the team with an ethical trading certificate boasting that the products they sell “shall not be produced in a way where there is cruel damage to the environment” and that “human rights as declared by the United Nations, shall not be violated”. Another brand found at Daglivs is Epic Select. Epic Select’s shrimp are farmed in Khulna and Cox’s Bazaar, and processed by Meenhar fisheries via Hotlett Frozen Foods in Belgium.

Ica Group
The Ica Group is one of the Northern Europe’s leading retail companies, with around 2 200 of its own and retailer-owned stores in Sweden, Norway, Estonia, Latvia and Lithuania. And Ica also sells shrimp from Bangladesh. Though Ica Sweden has removed tropical shrimp from their central stock, following advice from SSNC, tropical shrimp are regularly found in the retailer-owned Ica stores across the country. Among them prawns of the brands Epic Select, Seaboy and prawns from Nordic Seafood which are farmed and processed in Khulna supplied via Nordic Seafood Denmark to Sweden. Also shrimp from the Swedish importer Pandalus are of Bangladeshi origin, though no information about the region where they are farmed could be obtained.

Vi-butikerna
At the Swedish supermarket chain Vi-butikerna, the investigators found prawns of the brand Tiger, which are farmed in Cox’s Bazar, processed at plant Seamark BD in Chittagong and supplied via Seamark UK to Sweden. As outlined above, both Sobi and Jalalabad, who have been found to source prawns from the disputed area of Polder 20 in the past told the investigators that they supply Seamark. Ocean King and Ocean Pride prawns were also found on the shelves of Vi, produced in Khulna, traded by Southern Foods Limited and Modern Seafood via Setraco in Belgium, respectively.
Ecuador

Surface: 283,560 km² (approx. half of Sweden)
Population: 14 million inhabitants
Capital: Quito
Government: republic, with strong presidential power
Natural resources: petroleum, fish, timber, hydropower
Life expectancy: 75 years
Median age: 26 years
Under-5 mortality: 26 per 1,000
Adult literacy: 84 percent
Unemployment: 7.6 percent
HDI-ranking: 72: 77/169
CPI-ranking: 73: 127/178 (CPI for Ecuador is 2.5, CPI for e.g. Sweden is 9.2)

Shrimp export: In 2010, Ecuadorian companies exported 146,200 metric tons of shrimp, worth $10 million euro. Shrimp exports were included in the 6.1 percent that the agricultural sector contributed to the GDP in 2010.

Mangrove ecosystem: 70 percent deforested, 85 percent loss of salt flats
Fisheries: 30 percent of the people in Ecuador live adjacent to mangrove areas. Coastal communities are historically dependent on mangrove ecosystems. About 50,000 Ecuadorians rely on artisanal fisheries and collection of mollusks and crustaceans to fulfill their subsistence needs.74 75

72 Human Development Index (HDI) is used to measure the prosperity. It is a comparative measure of life expectancy, literacy, education and standards of living for countries worldwide. To compare, Sweden’s position is 9/169
73 Corruption Perceptions Index (CPI) measures the level of corruption in the public sector. CPI is an aggregate indicator that complexes aspects of corruption such as bribery of public officials, kickbacks in public procurement, embezzlement of public funds, and effectiveness of public sector anti-corruption efforts.
74 http://www.redmanglar.org/paginas/paises/laresca.htm
As far back as 1977, Ecuadorian entrepreneurs began venturing into the shrimp farming industry. Ecuador is the world’s second largest producer of farmed shrimps\(^{76}\), and over the last decade Ecuadorian shrimp exports have increased by 15 percent per year on average.\(^{77}\) The EU has been a key driver of this growth, recently overtaking the US as the main importer of Ecuadorian shrimps.\(^{78}\) In 2010, 51 percent of Ecuador’s shrimp exports went to the EU\(^{79}\) making Ecuador the number one shrimp exporter to EU member states, accounting for 26% of the total volume and 22 percent of the total value of shrimps imported by the block.\(^{80}\)

With ever-increasing popularity and consumption of tropical shrimps in developed countries, Ecuadorian shrimp companies have had to allocate larger areas of mangrove ecosystems to expand their production. The chronic environmental destruction resulting from the clear-felling of mangroves as a result of Ecuador’s investment in shrimp farming is nothing new; the severity of it has been described by both researchers and NGOs.\(^{81,82,83,84}\) Though conflicting estimates of Ecuador’s mangrove cover and the rate of deforestation exist, it is beyond dispute that the majority of the country’s mangrove forests have disappeared. Various sources suggest that as much as 70% of the country’s mangrove forests have been destroyed, mostly to free space for the construction of shrimp ponds.\(^{85,86}\)
Many of Ecuador’s poorest families depend on mangroves to sustain their livelihoods, making shrimp farming a potential cause of increased poverty.

This alarming loss of such a diverse and productive ecosystem has contributed to a significant reduction of species such as fish, mollusks and crustaceans.

Deforestation does not only lead to environmental destruction. Many of Ecuador’s poorest families depend on mangroves to sustain their livelihoods, making shrimp farming a potential cause of increased poverty. As large areas of mangroves have been taken and clear-felled into private shrimp ponds, communities of artisanal fish workers, crab and shellfish collectors end up losing both the resources they depend upon and access to areas, where they have traditionally fished and collected mollusks and crustaceans for generations to meet their subsistence needs.

As much as 70 percent of Ecuadorian mangroves have been destroyed, mostly by the construction of shrimp ponds.

The boom in shrimp farming, peaking in 1985, brought as a consequence the progressive conversion of the mangroves of the Gulf of Guayaquil to shrimp-raising lagoons, carried out illegally on some occasions. Between 1984 and 2006, 33 927 ha of mangrove forest were destroyed, and 86 380 ha of lagoons for shrimp farming were established. In the 2007 satellite image, the increase in shrimp aquaculture is evident (blue squares located in the green areas of the image), in areas formerly covered by mangroves.

The supply of organic goods has dramatically increased in recent years, fuelled by consumers in high-income countries who are anxious to ‘do the right thing’, and prevent their consumption habits contributing to environmental or social damage. Set against the backdrop of ecological devastation arising from the expansion of the prawn industry, supermarkets in Europe are promoting for the seemingly eco-friendly shrimp. First to develop standards with organic shrimp for the European market was the German non-profit organization Naturland. The first organic producers were approved in Ecuador in 2002. Currently, Naturland certifies shrimp production as organic in Ecuador, Peru, Brazil, Vietnam, Thailand and Indonesia. Along with Naturland, various other certification bodies have also created standards that include ‘organic’, ‘sustainable’, ‘responsible’ or ‘best practice’ prawn farming. Sweden, together with Germany, Switzerland, Austria and France, constitutes a key market for Ecuadorian shrimps certified as organic. In Sweden, Naturland’s certified shrimps can be found in supermarkets, including Ica and Coop.

The core of Naturland Standards for Organic Aquaculture is “a holistic approach, sustainable management, nature conservation and climate protection in actual practice, preserving and maintaining the soil, air and water”; the main principles of Naturland organic aquaculture are presented as follows on the organisation’s website:

1. Careful selection of sites for aquaculture farms
2. Protection of adjacent ecosystems
3. Active avoidance of conflicts with other users of the aquatic resources
4. Prohibition of chemicals
5. Natural remedies and treatments in the case of disease
6. Feedstuff from organic agriculture
7. Fishmeal and -oil in feed derived from by-products of fish processed for human consumption (“no dedicated feed fishery”)
8. Prohibition of genetically modified organisms (GMOs), neither in feedstuff, nor in the stock itself
9. Processing according to organic standards

There is no doubt that the above listed principles of organic shrimp farming contribute to production methods that are less damaging to the environment than conventional shrimp farming. But despite third party certification, is it actually feasible that these principles are being met by an industry that is infamous for creating widespread ecological and local socio-economic destruction?

These prawns were produced in Ecuador, certified by Naturland and EuroLeaf and sold by Coop in Sweden.
Organic shrimp farms with a history of illegal deforestation

In 2002, Naturland started certifying Ecuadorian shrimp producers as organic. Naturland now certifies four shrimp producers in Ecuador: Expalsa, Langosmar, Biocentinela and Omarsa. These companies hold around 4,520 hectares of certified production, spread across around 20 different farms and the two biggest suppliers, Omarsa and Expalsa, are amongst Ecuador’s top five shrimp exporters.

All four of Naturland’s organically certified producers of shrimp in Ecuador make use of historical mangrove ecosystems, where their shrimp ponds are now based. Even though Naturland does not allow further deforestation, it does allow production in previously destroyed “mangrove areas”, if certain criteria are observed. One criterion is that shrimp producers who have destroyed mangrove areas or use areas where mangrove has been destroyed for production, must have done so prior to being organically certified and also before mangroves were declared protected in the country where they are based. Omarsa is one of the producers that are using areas of destroyed mangroves.

Omarsa is Ecuador’s fifth biggest shrimp exporter with annual exports of 11,140 metric tons totaling US$74 million. Omarsa currently holds organic certifications issued by Naturland, Eco-Cert (French government), EuroLeaf (European Union) and Quality Certification Systems (QCS – USA). Omarsa is also certified by other organizations that claim to promote sustainable aquaculture: Business Alliance for Secure Commerce (BASC), Global GAP and Best Aquaculture Practices (ACC). Omarsa’s main market for its organic shrimp is currently Europe, with France, Germany, Sweden and the Netherlands leading the way.

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91 http://www.naturland.de/naturland_partners.html?tx_bladdress_pi1%5Bcode%5D=46ex_haaddr- nes_pi1%5Bproduct%5D=fisch
92 Calculations based on www.expalsa.com; Lenin Vera, Omarsa’s biologist and http://www.agriseek.com/market/plWhite-Shrimp-Fresh-Frozen.htm . Expalsa, around 2,300 hectares; Omarsa around 1,100 hectares, Biocentinela around 320 hectares and Langosmar around 800 hectares.
94 Naturland Standards for Organic Aquaculture 2011. V. Supplementary regulations for the pond culture of shrimps. Paragraph 1.2
95 http://www.omarsa.com.ec
Lenin Vera, Omarsa’s leading biologist for organic certifications, told the team that the ponds it uses for production nowadays were built in 1987 and some of them are indeed based in destroyed mangrove ecosystems. Though Naturland claims that according to Ecuadorian law, mangrove ecosystems were only declared protected in 1994, when the Ecuadorian state prohibited the expansion of shrimp farms in mangrove ecosystems⁹⁷, the Ecuadorian government actually prohibited the construction of shrimp farms in any mangrove ecosystems 16 years earlier – in 1978.⁹⁸ This ban was subsequently ratified in laws passed in 1981⁹⁹ and 1985¹⁰⁰.

One criterion is that shrimp producers who have destroyed mangrove areas or use areas where mangrove has been destroyed for production, must have done so prior to being organically certified and also before mangroves were declared protected in the country where they are based.

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**Naturland Standards for Organic Aquaculture**

V. Supplementary regulations for the pond culture of shrimps (e.g. Litopenaeus vannamei, Penaeus monodon, Macrobrachium rosenbergii)

1. Site selection, protection of mangroves

1.1 Mangrove plant communities have to be protected. Mangroves are considered as extremely important ecosystems that, at the same time, are endangered world-wide by human activities. Therefore, it is not permitted to remove or damage mangrove forest for purposes of construction or expansion of shrimp farms. Any measure carried out by the farm or on the farm’s demand likely to influence adjacent mangrove forest (e.g. construction of pathways and channels to the farm area) shall be announced to and approved by Naturland.

1.2 Farms (here: independent, coherent production units), which in parts occupy former mangrove area, can be converted to organic aquaculture according to Naturland standards if the former mangrove area does not exceed 50 percent of total farm area*. A pre-condition, however, is that in any case the relevant legal requirements for land use, reforestation etc. have been observed.** The former mangrove area in property of the farm shall be reforested to at least 50 percent during a period of maximum 5 years. The harvest of this area is not permitted to be labelled and marketed as an organic product according to Naturland standards, until Naturlands certification committee has confirmed the successful completion of reforestation. Furthermore, the yearly progress in reforestation activities as laid down in the conversion plan shall be confirmed by the certification committee.

*Under specific geographical or historical conditions exceptions can be made for extensive “mangrove aquaculture systems”

**Ecuador: protection of mangrove since 1994 (D.G. 1907/94)
Since 1990, mangrove ecosystems – also legally denominated areas of river bays and banks – can only be legally exploited in Ecuador under government concessions, as they are considered ‘state assets’. Despite this, the expansion of the shrimp industry continued beyond 1990, and, as a consequence, a large number of shrimp farms operating in mangrove ecosystems did not have the legal permits to do so.

In October 2008, the Ecuadorian government issued the 1391 decree stating that around 44,642 thousand hectares of shrimp farms – around 25 percent of the total – were illegally based in mangrove ecosystems, as they did not have concessions to do so. Decree 1391 granted amnesty to the operators and ‘regularized’ the farms with the condition that they reforest up to 30 percent of the mangrove ecosystem areas they have occupied without concessions, if mangroves have been deforested in such areas.

Among those that until 2008 operated without legal concessions were three of the four Naturland’s certified shrimp producers in Ecuador – Expalsa, Omarsa and Biocentinela. Meanwhile they had been granted organic certifications. In fact, seven out of 14 shrimp farms belonging to Expalsa had illegally occupied nearly 200 hectares of mangrove ecosystem according to Ecuadorian government lists. For the illegal occupation of these areas before 2008, Expalsa had to pay a fine of US$ 88,331.20 to the Ecuadorian government. Similarly, Biocentinela had illegally occupied around 136 hectares of mangrove ecosystem without concessions previous to 2008, which resulted in a fine of US$ 37,761.00.

Lenin Vera told the team that Omarsa is still in the process of being ‘regularized’. This is in spite of the fact that the Ecuadorian authorities ordered shrimp farms to start the regularization process over two years ago. According to Vera, the main pressure on the company to come clean with Ecuadorian authorities comes from the European Union’s organic standards.

Organic certifications granted to illegal mangrove occupiers

Water pump system at one of Expalsa’s certified farms based in the mangrove ecosystem. The world’s biggest producer of organic shrimps has illegally occupied around 200 hectares of mangrove in Ecuador.
Exploitation of destroyed mangrove ecosystem

Naturland allows farms to produce shrimps in destroyed mangroves if the former mangrove area does not exceed 50 percent of total production area.¹⁰⁸ Naturland also states that “under specific geographical or historical conditions”, exceptions can be made to this rule. Evidence gathered in Ecuadorian certified farms suggest that Naturland’s conception of “mangrove areas” fail to recognize the importance of landscapes such as salt flats, which are crucial to the current existence and future survival of mangrove ecosystems under the threat of climate change.

In July 2011, the team visited Biocentinela, Ecuador’s oldest producer of organically certified shrimps. Today Biocentinela boasts three more European organic certifications: BioSuisse (Switzerland), Ecocert (French government) and the UK Soil Association. The company also holds a fair-trade certification: Fair for Life.¹⁰⁹

Unexpectedly, Hermes Lopez, the leading biologist in charge of organic standards at Biocentinela, said that all Biocentinela farms currently are located in lowlands of river bays and banks at Puna Island, meaning its whole production area consists of historical mangrove ecosystems that have been destroyed to construct shrimp ponds. UNEP presents Puna Island as the clearest example of mangrove destruction and alteration of coastal waterways.¹¹⁰

To clarify why Naturland allows Biocentinela to make use of 100 percent destroyed mangrove ecosystems, investigators contacted Andres Fajardo, Biocentinela’s marketing manager. Fajardo confirmed that Biocentinela’s whole production is placed in mangrove ecosystems of lowlands of river bays and banks in the Puna Island. He confirmed that according to Naturland’s standards, mangrove areas are defined as areas where mangrove trees

¹⁰⁸ Naturland Standards for Organic Aquaculture 2011. V. Supplementary regulations for the pond culture of shrimps. Paragraph 1.2
¹⁰⁹ http://biocentinela.com/about_us/view.php5?page=certifications&id=1
¹¹⁰ Based on data from CLIRSEN – Centro de Levantamientos Integrados de Recursos Naturales por Censores Remotos
and vegetation grow and do not include areas of salt flats and lowland shrubs. That is why Biocentinela’s production in lowlands of mangrove ecosystems has been entitled to be certified by Naturland.

Ecuadorian mangroves consist of two main zones: zones bordering the rivers where most mangrove trees grow and zones of deposits of salt and mud.111 Mangrove ecosystems in Ecuador can also include inter-tidal high salinity areas where black mangrove trees (Avicennia germinans) develop in the form of shrubs112 and eventually blend into upland vegetation113.

The investigation team obtained historical maps114 that show that the whole area occupied by Biocentinela in lowlands fit exactly into the broader understanding of Ecuadorian mangrove ecosystems: a combination of salt flats, shrubs and mangrove trees in inter-tidal zones.

Similarly to Naturland’s standards, the UK Soil Association standards state that an existing shrimp farm that was previously an area of natural vegetation such as mangrove forest can only be certified as organic if no more than 50% of the farm was natural vegetation before construction115. The Soil Association confirmed to the investigators that Biocentinela is not an exception to this rule.116 Naturland refused to comment.

It is a concern that certifiers such as Naturland and the Soil Association do not consider mangrove ecosystems as a whole; instead they seem to exclude areas of salt flats and shrubs from their respective concepts of ‘mangrove area’ and ‘mangrove vegetation’.

Port Angeles, US, September 2011
Alfredo Quarto,
Executive Director Mangrove Action Project113

Ecuador has lost around 90 percent of its salt flats mainly to the shrimp industry. These farms are saying they are not in the mangroves. But they are. Mangroves are more than just the actual trees. Mangrove ecosystems include salt marshes, salt flats and mudflats. These whole inter-tidal ecosystems are really connected. To separate them, as Naturland is doing, is a fallacy.

The misconception is that they are saying they are saving the mangroves by using the salt flats. They are not saving the mangroves by using the salt flats. These shrimp farms are a hindrance to the mangroves because they may be blocking the waterways that feed the mangroves and they also may be blocking the sediments and nutrients coming into the mangroves. It is not okay. Salt Flats are not wasteland.

Also as the sea levels are rising right now, this is the worst time to convert the buffers such as salt flats behind the mangroves into shrimp farms, because the shrimp farms are in the way of the mangroves’ colonization when they need to go upland. If there are no salt flats, mangroves will have nowhere to go.
Failed reforestation targets

Naturland clearly states that former mangrove areas shall be reforested to at least 50 percent during a period of maximum five years after certification.\textsuperscript{118} According to Stefan Bergleiter, responsible for Naturland’s certification of shrimp aquaculture, the reforestation progress is monitored annually through the regular farm inspections and is an integral part of Naturland’s certification criteria. But contradictorily to such affirmation, investigators found that certified producers in Ecuador are failing to meet reforestation targets.

At Omarsa, 300 hectares out of around 1 100 hectares of ponds at its certified farm are historical mangrove ecosystems, according to Lenin Vera, Omarsa’s biologist. Vera, however, also revealed that now, after four years of certification, Omarsa should have reforested 40 percent of the 300 hectares of destroyed mangroves – equivalent to 120 hectares or a 10 percent reforestation rate per year. But in reality, the company has only reforested 15 to 18 hectares, about 7 to 8 times less than the 120 hectares required.

Omarsa’s biologist claimed that Omarsa is not the only shrimp producer not meeting reforestation targets in Ecuador. He further revealed that organic certifiers are allowing the company to work under the reforestation targets because costs are too high for “their reality”. Yet Omarsa recently announced that its organic production is so profitable, that it is planning to convert its remaining conventional shrimp production into organic to benefit from premium prices. Under the newly expanded systems, Omarsa will then have 3 000 hectares of organic shrimp farms and an annual production of 6-7 000 metric tons\textsuperscript{119}

The company plans to bargain for reforestation initiatives that are “economically viable”. The expansion suggests that Omarsa’s aim is to benefit from premium prices that certifiers often pay for organic shrimps, without using the financial benefit to meet organic targets for reforestation.

\textsuperscript{118} Naturland Standards for Organic Aquaculture 2011. V. Supplementary regulations for the pond culture of shrimps. Paragraph 1.2

Maps show that Omarsa’s shrimp ponds (in red) also makes use of large areas of historical mangrove ecosystems – composed of salt flats and scrub forests (brown) and mangrove forests (green).

Omarsa, organic shrimp producer. July 2011
Lenin Vera, biologist

To meet the final targets [after five years], we estimate we have to reforest around 150 to 200 hectares in total. We have eight ponds being afforested. They total around 15 to 18 hectares. According to organic standards we should have reforested 40 percent of the production area [120 hectares in four years]. But this would be a blow to our production.

Reaching the reforestation target is a struggle in Ecuador because stopping using a pond means decreasing production. It is costly.

When they come to audit us they understand the situation. Naturland’s standards, which are the strictest, are too severe. They want us to implement something that is impossible for our reality.
Biocentinela and Omarsa’s biologists described their respective reforestation programs to the investigators. Abandoned shrimp ponds have their water gates open, so natural tides from surrounding waterways can bring water in and out, as well seedlings from the surrounding vegetation. In the case of Biocentinela, seeds from surrounding red mangrove trees are collected, sent to a seedling site and small trees are planted in such areas. The investigator found that Omarsa, which claims that reforestation is too costly, conversely puts no effort into active planting of any species of mangrove vegetation.

The nature of Biocentinela and Omarsa’s mangrove reforestation programs, raises concern that these shrimp producers are far too focused on keeping costs low and avoiding negative impacts on production levels. In fact, Biocentinela’s biologist admitted that the company’s key decision factor when choosing which ponds to reforest is not ecological but rather the maximization of economic productivity.

Dr Robin Lewis, president of Lewis Environmental Services, Inc.,120 is one of the world’s leading experts in mangrove reforestation, having designed and constructed over 30 successful mangrove restoration projects around the world. Lewis described the reforestation programs being carried out by Biocentinela and Omarsa as “strategic breaching”, a method used to reduce costs, which may only work over time with long term-monitoring, very careful design and consideration given to hydrology. He concluded that most of these kinds of reforestation projects are not sustainable in the long term, and pointed out that

120 http://www.royrlewis3.com/
better reforestation methods, with higher expectation of effective restoration, are available, but rarely adopted by shrimp farmers.

Dr Mark Huxham, a researcher from Edinburgh Napier University who has worked as a leading investigator in various mangrove reforestation projects, also raised concerns over Biocentinela’s reforestation programs.

Alfredo Quarto, Executive Director of Mangrove Action Project which specializes in mangrove restoration initiatives worldwide, also pointed out that Biocentinela’s strategy to only plant red mangrove trees is insufficient. Studies conducted in Biocentinela’s neighboring shrimp farms show that the area is populated by five different types of mangrove trees: two species of red mangroves (*Rhizophora mangle* and *Rhizophora harrisonii*), white mangroves (*Laguncularia racemosa*), black mangroves (*Avicennia germinans*) and button mangroves (‘mangle jeli’). Quarto points out that as in the case of Biocentinela’s area, mangrove forests usually have various species of mangrove trees and only choosing one species for active planting is rather creating a monoculture instead of effectively restoring mangrove ecosystems.

The environmental organisation C-Condem runs a reforestation program in abandoned shrimp ponds along the coast.

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Edinburgh Napier University, August 2011
Dr Mark Huxham, mangrove restoration expert

These photos seem to show very limited natural growth after two years. It looks as if recruitment [of vegetation] is very slow. The long-term sustainability of these shrimp operations depends crucially on the scale of such operations and on how scrupulous they are in ensuring reforestation of abandoned shrimp ponds. From descriptions and photos provided by the investigators of abandoned ponds under reforestation initiatives, it seems unlikely that these ponds will be properly recolonised.

Port Angeles, US, September 2011
Alfredo Quarto, Executive Director Mangrove Action Project

The majority of reforestation attempts we have been seeing are a failure. One of the most typical mistakes is to plant only one species of mangrove trees, usually the red mangrove species, *Rhizophora*. They are creating a monoculture. They are not doing a restoration, they are doing an afforestation. Also, a lot of the failed attempts use areas of salt or mud flats to plant the trees. When this happens most of these trees will die within few years.

Lewis Environmental Services Inc., USA, August 2011, Dr Robin Lewis, mangrove restoration expert

The reason farms and farm managers might not use the state-of-the-art methods, is because they don’t know about them – they are after all shrimp farmers, not restoration ecologists and they get just as many miles out of a failed project as a successful one since routine longer term monitoring does not take place. It is typically a one shot inspection and approval and a check written to most certifying organizations, who are themselves ignorant of the state of the science. It is so to speak the blind leading the blind...
The Naturland standards for carp, trout, salmon, shrimps, mussels and tropical sweet water fish stand for environmental protection and transparency.” Yet the intention of the investigation team to assess the performance of all Naturland’s certified farms in Ecuador, including their reforestation achievements proved to be impossible, mainly due to lack of transparency from two of the four producers.

The investigators contacted Langosmar, a company with 800 hectares of shrimp production in Ecuador organically certified by the European Union (EuroLeaf), the French government (Ecocert), Naturland, Bio-Suisse and QCS (USA). Peculiarly, Langosmar was reluctant to receive a visit from the team and never replied to phone calls before and emails sent after the field investigation. While in the region, the team also passed by one of Langosmar’s certified farms only to be denied access to the facilities.

A similar opaqueness was experienced when approaching Expalsa, Ecuador’s largest exporter of shrimps who claims to be the world’s biggest producer of organic shrimps with over 2 300 hectares of shrimp ponds organically certified. Expalsa is certified by Naturland, The UK Organic Soil Association, EuroLeaf (European Union), Bio-Suisse, QCS (USA), National Organic Program (USDA), the British Retail Consortium (BRC) and Global GAP.

The investigators contacted Expalsa via phone and email before their arrival in Ecuador. The company’s managing director, Ricardo Menendez, said Expalsa did not have free time to provide a tour of its farms. The investigators then requested a phone interview about Expalsa’s reforestation initiatives, but the company again refused stating “internal security policy” as the reason – especially related to the organic production.

Lack of transparency

We would like to thank you in advance for your interest in an interview with Expalsa. Unfortunately, given internal security policies, we are not allowed to share this type of information, especially information related to our organic production“
The level of protein in feed has consequences for water quality and nitrogen discharge. Therefore most certification schemes limit the amount of protein allowed in shrimp feed. Biocentinela’s employees showed to investigators a shrimp feed called Brine Shrimp Flake, Flake Negro Floco Preto, produced by Mackay Marine. They explained that this feed is used for the initial development of nauplius (baby shrimps) when they are transferred from hatcheries to shrimp farms. As pictures taken at Biocentinela’s farm show, the minimum level of crude protein in this feed is 50 to 52 percent. This is an infringement to Naturlands’ standards that state that shrimp feeds should have no more of 30 percent for total protein.

Naturland Standards for Organic Aquaculture. 2011. V. Supplementary regulations for the pond culture of shrimps

8.1 (...) Additionally, the fishmeal content as well as the total protein content of compound feed shall be reduced as far as possible. As provisional maximum levels shall be set: 20 percent for fishmeal/-oil content* and 30 percent for total protein.

* For shrimp companies who were certified after the enforcement of the EU regulation 710/2009 on 1.7.2010 fish meal is allowed in the feed only up to an amount of 10 percent.
The EU regulation for organic aquaculture states that organic and non-organic production units shall be separated adequately. Though the investigators commissioned by SSNC had no means to investigate hydrology and water quality, concern was raised because of the closeness between certified farms and conventional farms; satellite images suggest they share the same waterways for pumping water to their ponds and disposing used water back after harvests.

One very clear case is Omarsa, where 2 700 hectares of organic shrimp production on one side of a river, borders 3 000 hectares of conventional shrimp ponds on the other. Omarsa pumps water from the adjacent river to supply its shrimp ponds.

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**COMMISSION REGULATION (EC) No 710/2009 (Organic Aquaculture)**

**Article 6b. Suitability of aquatic medium and sustainable management plan**

1. Operations shall be situated in locations that are not subject to contamination by products or substances not authorised for organic production, or pollutants that would compromise the organic nature of the products.

2. Organic and non-organic production units shall be separated adequately. Such separation measures shall be based on the natural situation, separate water distribution systems, distances, the tidal flow, the upstream and the downstream location of the organic production unit.

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Omarsa, outlined in white, share a waterway with more than 3000 hectares of conventional shrimp farms.

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132 Omarsa has a total of 2 700 hectares, out of which around 1 100 hectares are shrimp ponds
133 www.dspace.espol.edu.ec/bitstream/123456789/4611/1/7132.pdf
As hormonal systems are based on shrimps’ eyestalks, unilateral eyestalk ablation – removing one eye of mother shrimps – is widely used in conventional shrimp maturation and reproduction facilities around the world to manipulate hormonal production. Mother shrimps are partially blinded mainly because highly unnatural captive conditions cause inhibitions in females, not allowing them to develop mature ovaries. Or, if females are able to develop ovaries in captivity, blinding them increases total egg production and the percentage of females in a given population that will participate in reproduction.134

Although Naturland standards states that “physical manipulations of the animals for obtaining eggs and larvae are principally prohibited”135, they do allow it when “dealing with species that, at present, provably cannot be reproduced without such manipulations (principally Black Tiger shrimp/ Penaeus monodon)” in which case “the hatchery must run a program dedicated to achieve natural reproduction”.

According to Carlos Tomala, Commercial Manager at Faraeco/Omarsa Hatcheries, Omarsa still blinds 70 percent of its mother shrimps to avoid higher costs and extra investments, as well as to be able to supply nauplii at competitive prices to conventional shrimp farms. Now, the company is under pressure from the European Union, to fully abolish the use of such unnatural method, as also EU regulations clearly state: “eyestalk ablation is prohibited.”136

Similarly Biocentinela is blinding 75 percent of its mother shrimps after 10 years of certification. Like Omarsa, Biocentinela admitted that blinding shrimps is aimed at maximizing productivity levels and allowing sales of nauplii at competitive prices to conventional shrimp farms. Now, Biocentinela also claims that because of EU regulations, it will start the process of fully eradicating blinding techniques. Though Omarsa claims that they their production of larvae from non-manipulated mother shrimps is big enough to supply their organic production, there is reason for concern as long as Naturland and other certifiers allow this method to dominate among its producers’ hatcheries, particularly since the reasons appears to be related to the cost of production rather than lack of techniques to raise prawns in a natural way.137 138 In addition Biocentinela and Omarsa produce white-legged shrimp/ Litopenaeus vannamei, not black tiger shrimp.

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137 Carlos Tomala, Commercial Manager, Faraeco/Omarsa Hatcheries. July 2011
We cut one eye of the mother shrimps off. We have been doing that for a long time so the female shrimps can mature and lay eggs in a shorter time. In this way, the company can produce and sell higher amounts of nauplii (baby shrimps). We sell some of our production of nauplii to other shrimp farms. These shrimp farms are not organic. They do not mind if we blind shrimps or not. But now the European Union and the organic certifiers are telling us we have to have 100 percent of non-blinded shrimps. We have a project that will be implemented to reach this goal. But at the moment, we only have 25 percent of mother shrimps that are not blinded.
Lack of social responsibility and respect for human rights

Naturland’s elementary principles say that certified organic producers should work under the principles of “tolerance, the respectful treatment of one’s fellow human beings and the acceptance of social responsibility”. Standards go into more detail to mention human rights, violation of social justice and farmers’ obligation to ensure that coastal communities have free access to waterways.¹³⁹

In July 2011, the team of investigators visited four different communities living in the surroundings of Naturland’s certified shrimp farms in Ecuador. Their findings reveal that Ecuadorian shrimp producers certified by Naturland are violating basic human rights by denying the right of way for the communities through the mangroves and their rivers via the use of intimidation and armed private security.

¹³⁹ Naturland Standards for Organic Aquaculture 2011

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Naturland Standards for Organic Aquaculture
Part A. General regulations
III. Social responsibility
1. Human rights
A product created under conditions violating basic human rights or under gross violation of social justice cannot be traded as a product certified by Naturland.

Part B. Regulations governing organic aquaculture
1. Principles of Management
1. Selection of site, interaction with surrounding ecosystems
1.2. The farmer shall reach an agreement with the representatives of neighbouring local and regional authorities to ensure free access to the natural water courses surrounding the farm for fishermen and other interested parties. Recommended examples are fenced-in paths or the issue of permits. Whatever the case, the legal regulations have to be complied with.

The collection of shells and crabs is hard work. Today shell and crab collectors only find a fraction of what they used to before the expansion of prawn farms.
Sabana Grande is situated close to Langosmar. As mentioned previously in this report, Langosmar refused a visit from the research team. On its website, Langosmar boasts about being a socially responsible company. But the reality unveiled by the residents of its closest neighboring community suggests otherwise.

According to various artisanal fishers interviewed at Sabana Grande, Langosmar has been, for over two years, one of the most prohibitive and abusive of the many shrimp farms that surround them. The right of way through waterways surrounding Langosmar’s shrimp farm is now only being given to those who can present several different types of fishing, engine and boat licenses. Many fishers are being left out, as they do not have the means to acquire all licenses being asked by Langosmar and therefore can no longer access what is legally considered to be a public river.

In July 2010, a group of 12 fishers formally registered a complaint with the marine authorities reporting that Langosmar’s private security had chased them with gunfire and taken their boat. According to the local fishers, Langosmar’s security guard was changed as a response to their complaint and following an inspection by the Marine Authority. But the intimidation via the use of gunfire is still ongoing, the fishers told the investigators.

140 http://langosmar.com/english/quienessomos.htm
Victor Borbon, lawyer and legal representative of the Association of Fishermen of Puerto Sabana Grande

The shrimp farms that are closing the rivers and sidearms are doing so illegally. Our constitution clearly states that our rivers should be accessible to all as they are public. There is nothing in the law that says that shrimp farmers can block the access to the rivers.

Langosmar, organic shrimp producer, 30th of July 2011

Security guard: The day before yesterday I found two men who don’t have the licenses by a pond. They were close to the pre-breeding site. They were fishing. My colleague and myself had to shoot up in the air and down in the water to chase them away.

Sabana Grande, July 2011

Victor Borbon, lawyer and legal representative of the Association of Fishermen of Puerto Sabana Grande

The shrimp farms that are closing the rivers and sidearms are doing so illegally. Our constitution clearly states that our rivers should be accessible to all as they are public. There is nothing in the law that says that shrimp farmers can block the access to the rivers.

We guarantee the maximum satisfaction of our clients by producing with social responsibility a product with the highest quality and with total respect of the environment, preserving our planet for the future generations.

Crab and shellfish collector

There are other shrimp farms that allow us to pass. But Langosmar is not letting us pass close to its pumping system. They shoot targeting the boat and they don’t let us fish there. They chase us away and say the area belongs to them. But I don’t think the area belongs to them. The mangrove belongs to us, the crab and shellfish collectors.
Shrimp farms have invaded this town of Sabana Grande, in Guayas province. They have created their own law.\textsuperscript{142}

\begin{quote}
Langosmar’s illegal appropriation of public waterways goes even further. Around Langosmar’s farms, the investigators witnessed fences that effectively close the river side arms. Ecuadorian law\textsuperscript{142} 143 also clearly shows that Langosmar’s appropriation of the river is illegal, as all Ecuadorian waterways are considered a national asset of public use.

On the 30th of July 2011, the investigation team boarded a boat of local artisanal fishers and paid a visit to Langosmar. The company’s security guard who was armed with a rifle, immediately stopped the boat. He also confirmed the claims from crab and shellfish collectors by describing how he chases fishermen with gunfire if they are too close to shrimp ponds or violate the company’s rules.

Langosmar’s security guard told the investigating team that he works jointly with the Ecuadorian police and all the rules he presented correspond with police rules. To verify this information, the team visited Sabana Grande’s local police station where the chief officer denied both that they work jointly with Langosmar’s private security and that they authorize their intimidating actions.

The fact that Langosmar is not recognizing the licenses issued by the local association of fishers is also inconceivable to the eyes of Ecuadorian lawyers. The investigators also contacted Orlando Crespo, Ecuador’s
\end{quote}

\textsuperscript{142} \url{http://www.derechoecuador.com/index2.php?option=com_content&task=view&id=4077&pop=1&page=0}
\textsuperscript{143} \url{http://html.rincondelvago.com/constitucion-de-ecuador.html}
\textsuperscript{144} Interview with Victor Rohor, lawyer in Puerto Sabana Grande, Puerto Sabana Grande, April 2011
Director of Management and Sustainable Development of Aquaculture at the Aquaculture Secretary of the Agriculture Ministry. When they presented verbal reports of Langosmar’s use of gunfire to chase fishers and shellfish collectors and to demand of various different types of licenses to fish in a public river, Crespo claimed that this was illegal according to Ecuadorian law.

After witnessing such grave violations of legislation and abuse of power, the investigators once again contacted Langosmar to request an interview about the company’s security policies and procedures. Employees at Langosmar’s Ecuadorian office told one of the investigators to contact Maria Jose Aguayo via email, as she could not be available over the phone. Two emails were sent but were never replied. When the investigator contacted Andrea Vargas, responsible for the company’s US office, Vargas confirmed that the company’s policy is to ask for identification to pass through the river for “security reasons”. But when asked for more details, Vargas requested an email. The email message sent to her remains unanswered.


Orlando Crespo, Director of Management and Sustainable Development of Aquaculture, Agriculture, Livestock, Aquaculture and Fisheries Ministry, July 2011

The only people allowed by law to inspect boats and the artisanal fishermen are the Marine and the Sub-Secretary of Fishing Resources. In some special cases, the police may do it. But some shrimp farms take this initiative, but doing so is illegal.

Here in this country no one is allowed to shoot. You cannot have private security telling you cannot pass. For this we have authorities especially the marine force. This man [Langosmar’s security guard] does not have the right to use his gun to kill or to shoot.
Like Langosmar, Omarsa claims to be a socially responsible shrimp producer and makes use of such statement to attract clients. Contrary to Langosmar, Omarsa opened its doors to the investigation team which visited its organically certified farm “Langua-Chongon”, in Chongon municipality. Omarsa has eight watchtowers around its organically certified farm. Armed security guards are employed and one guard armed with a rifle followed the investigators during their tour around the farm.

Nevertheless, Omarsa’s biologist in charge of organic certifications, Lenin Vera, assured the team that the company has a free-right of way policy so local residents can fish in the rivers surrounding their farms and cross their farms to access important fishing spots. However, Vera highlighted that the company is under constant risks of robberies, making it mandatory for fishermen to have credentials issued by the company and regularly have their bags checked. However, Omarsa’s description of a free-right of way policy with credentials and supervision did not match the reality of communities that the team spoke to when visiting the towns of Chongon and Chongonzito, the communities closest to Omarsa’s Chongon-Langua certified farm.

In Chongon, fishermen told us they had to abandon artisanal fisheries around five years ago because Omarsa’s security personnel would not let them go down the Chongon river. A similar scenario of illegal refutation of right of way by Omarsa was documented in the neighboring community of Chongonzito. Omarsa’s headquarters was subsequently contacted and asked about their interaction with these two communities. Their reply confirms that due to the risk of thefts they control the access to the river and use private security guards to do so.

The investigators also asked Omarsa to directly comment on the testimonials of former fishermen from Chongon and Chongonzito who say that a great number of former fishermen who are now forced to work with something else have never had access to credentials or had their credentials taken away by Omarsa. Omarsa was also requested to specifically describe what types of credentials they request.

It is possible to have organic onions of tomatoes produced in Ecuador. But something produced in the mangroves is a different thing. Mangroves account for only 1% of the world’s forests. It is a crucial ecosystem for the planet. Moreover, it produces a very high amount of resources that allow local communities to maintain their food sovereignty; they can choose what they are going to eat today and tomorrow. Mangroves also allow our communities to be able to afford health services, education and clean water to bathe and have fun. But this ecosystem has been changed, contaminated and deforested. That is why it is impossible to have shrimps produced here labeled as organic.
and how many fishermen actually have access to these credentials at present. The company never replied to these questions.

Despite having to comply with strict standards of social responsibility, fishing communities in Chongon, Chongonzito and Puerto Sabana Grande say organic certifiers have never visited their communities to ask about their interaction with certified farms. This strongly suggests that Naturland and other actors sourcing certified prawns from Omarsa and Langosmar do not carry out proper social assessments on the impacts that shrimp farms have in their closest local communities.

The testimonies and evidence documented above are scandalous and clearly shows that not enough effort is being put into the enforcement of standards relating to social responsibility and human rights standards. The vast majority of shrimp farms certified by Naturland and other European labels are based in the province of Guayas in Ecuador. It is estimated that 70 percent of the population in this province have their income directly related to fishing, extractive and agricultural activities in mangrove ecosystems.146 Poverty indicators are also alarming and should be reason for concern for shrimp producers, which are often competing with local communities for natural resources. Naturland prawns sell for a premium on supermarket shelves across Europe, but in Guayas, around 80% of the population lack the resources to even meet their subsistence needs.147

Fishing communities in Chongon, Chongonzito and Sabana Grande say organic certifiers have never visited their communities to ask about their interaction with certified farms.

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146 http://www.galeon.com/salvemosalmanglar/docs/archive/data.htm#pobla
It is also crucial to highlight that shrimp farms do not need the use of armed security forces and can have a peaceful relationship with local communities. One current example is Biocentinela. In 2007, C-Condem, an Ecuadorian mangrove-protection organisation, found evidence that Biocentinela was employing armed guards and denying the right of way to fishermen living in the community of Rio Hondo. In 2011, local communities said that their right of way is being respected. Biocentinela’s biologists ensured that the security guards are not armed anymore and to their credit, the company today considers the use of guns to be illegal.

Conclusion

This report has shown that the multi-billion dollar shrimp industry has been built on the foundations of ecosystem destruction and human rights abuses. These problems are occurring as we speak.

The investigations focused solely on the shrimp industries of Bangladesh and Ecuador, but worldwide precious mangroves have been cut down, land for farming has been destroyed and the livelihoods of millions of coastal people have been degraded in the process. Rarely has one industry been responsible for so much destruction in some of the most biodiverse ecosystems on earth. Shrimp farming is indeed an ecological and social disaster.

Facing up to the criticisms of researchers and community networks some sections of the industry have actively tried to encourage the prawn aquaculture industry to improve practices around the world, in the belief that this will resolve the problems of prawns production. A number of labelling schemes now exist on the prawn market where conscious consumers can chose prawns that are supposedly farmed in a more responsible manner. As this investigation has found however, well-known certification schemes are today unable to effectively police and prevent ongoing problems in the tropical prawn industry.

Far from sight and mind, it is easy to blame corrupt officials and weak enforcement in countries such as Bangladesh or Ecuador, for the problems described in this report. But in reality the tropical shrimp industry, with all its multitude of problems, is ultimately driven and fuelled by consumer demand and by the marketing of restaurants, retailers and others; this includes those who promote and sell certified prawns.

If consumers continue to buy tropical prawns, they put money into the pockets of the prawn industry, helping to inadvertently fund and encourage unsustainable practices that undermine ecosystems and further erode the livelihoods of vulnerable coastal communities around the world. Likewise, retailers that market shrimps, even those from certified farms, stimulate an ongoing destruction, whilst also deceiving customers and violating the various responsibility policies they have in place.

For those who want to stop funding mangrove destruction and livelihood degradation around the world, the answer is simple: Stop buying, stop marketing, stop selling and stop eating tropical prawns.

This is our earnest request to everyone: don’t eat prawns. Only that will keep us alive. If these farms are closed down forever, then we will have peace in our life.149
Table 1. Organic and eco labels, a sample of criteria and compliance amongst the Ecuadorian shrimp producers.

<table>
<thead>
<tr>
<th>Certifications/Companies granted certification in Ecuador</th>
<th>Mangrove protection standards</th>
<th>Eyestalk ablation</th>
<th>Social standards</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Principles</strong></td>
<td><strong>Reality</strong></td>
<td><strong>Principles</strong></td>
<td><strong>Reality</strong></td>
</tr>
<tr>
<td>Naturland, Germany, organic</td>
<td>Farms must have legal rights over land use.</td>
<td>Biocentinela, Expalsa and Omarsa were granted certifications while illegally occupying mangrove areas.</td>
<td>Prohibited if species can breed without manipulation.</td>
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<tr>
<td>Omarsa and Expalsa</td>
<td>Area of previously destroyed mangrove areas cannot exceed 50% of total. Exceptions can be given.</td>
<td>Biocentinela’s production makes use of 100% destroyed mangrove ecosystems. The company explained that Naturland does not consider salt marshes and scrub forests as mangrove area. Experts claim that this is a misconception which will have negative consequences for the mangrove ecosystems.</td>
<td></td>
</tr>
<tr>
<td>AND</td>
<td>Farms have to reforest destroyed areas within 5 years of certification.</td>
<td>Omarsa only reforests 6% after four years.</td>
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<tr>
<td>Bio-Suisse有机, Swiss, organic</td>
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<tr>
<td>Sold in Switzerland. Adopts Naturland’s standards. Companies certified: Biocentinela, Langosmar and Expalsa</td>
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<td>AND</td>
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<tr>
<td>EuroLeaf, European Union, organic</td>
<td>No reforestation targets.</td>
<td>Poor reforestation rate at Omarsa.</td>
<td>Prohibited.</td>
</tr>
<tr>
<td>Companies certified: Expalsa, Langosmar and Omarsa</td>
<td>No clear mention of land use rights and respect of national environmental laws.</td>
<td>Illegal mangrove occupiers (i.e: Biocentinela, Expalsa and Omarsa) have been granted certification.</td>
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</tr>
<tr>
<td>Certifications/Companies granted certification in Ecuador</td>
<td>Mangrove protection standards</td>
<td>Eyestalk ablation</td>
<td>Social standards</td>
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<tr>
<td>Principals Reality Principles Reality Principles Reality</td>
<td>Shrimp farm that was previously an area of natural vegetation such as mangrove forest can be converted into organic, if no more than 50% of the farm was natural vegetation before construction</td>
<td>Biocentinela’s production makes use of 100% destroyed mangrove ecosystems. Standards do not to consider salt flats and shrubs to be areas of “natural vegetation”. Experts say this is a misconception which will have negative impacts on both the well-being of the existing mangrove ecosystems as well as on the success of future restoration.</td>
<td>Forbidden. Biocentinela still blinds 75% of mother shrimps to maximize productivity and sell nauplii at competitive prices to conventional shrimp farms.</td>
</tr>
<tr>
<td>Completion of reforestation and habitat renewal program within three years of starting organic conversion</td>
<td>Experts suspect that reforestation programs carried out by Biocentinela might not be effective in restoring mangrove ecosystems. Company admits that reforestation is driven by principles of productivity.</td>
<td>Farm should actively participate in, and contribute towards, the society and culture of the local and wider community.</td>
<td>Biocentinela plans to provide a GP to provide health services to the local community.</td>
</tr>
<tr>
<td>Farm has to confirm ownership and management control of the land to start organic conversion</td>
<td>Biocentinela granted certification while illegally occupying mangrove areas.</td>
<td>Farm has to facilitate farm access to the public.</td>
<td>Biocentinela was open to receive the investigating team. This suggests this specification in standards is a good practice, as it effectively induces transparency.</td>
</tr>
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<td>Principles Reality Principles Reality Principles Reality</td>
<td>Farms established between May 1999 and April 2008 within mangroves must show evidence that they are in the process of rehabilitating the area and if necessary compensating surrounding communities.</td>
<td>Omarsa’s ponds were built in around 1987. This suggests that according to Global GAP’s standards, Omarsa has no obligation to restore destroyed mangroves or provide compensation to local communities.</td>
<td>Animal welfare is “essential”. No clear mention of eyestalk ablation.</td>
</tr>
<tr>
<td>Farms operated in accordance with applicable environmental legislation. Legislation overrides GLOBAL GAP where relevant legislation is more demanding.</td>
<td>Omarsa still remains to become regularized by the Ecuadorian government to legally operate in mangrove areas. The company has to reforest 30% of the areas where mangrove have been cleared. At the moment its reforestation efforts are insufficient to reach this legal demand.</td>
<td>Omarsa’s certified hatchery still blinds 70% of mother shrimps to maximize production.</td>
<td>Omarsa: neighboring communities say their right of way through the river has been denied for many years and they were forced out of artisanal fisheries, an activity that was crucial to their subsistence needs.</td>
</tr>
<tr>
<td>Farms are operated in accordance with applicable legislation in relation to land ownership and use.</td>
<td>Omarsa and Expalsa were granted certifications while illegally occupying mangrove land.</td>
<td>Farms are to be built and managed in such a way that recognizes that other land uses, people and species depend upon these same ecosystems.</td>
<td>Omarsa: neighboring communities say their right of way through the river has been denied for many years and they were forced out of artisanal fisheries, an activity that was crucial to their subsistence needs.</td>
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<td>Quality Certification Systems (QCS)**, American, organic Sold in the US Companies certified: Expalsa, Langosmar and Omarsa</td>
<td>Location of organic aquaculture facilities shall take into consideration the maintenance of the aquatic environment and surrounding aquatic and terrestrial ecosystem.</td>
<td>Most of Omarsa's ponds are located in destroyed areas of historical mangrove forests and salt flats. Expalsa and Langosmar also make use of historical mangrove ecosystems for production.</td>
<td>No clear mention of eyestalk ablation.</td>
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<td>No reforestation targets.</td>
<td>Allows the destruction of mangrove ecosystems.</td>
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161 QCS Private Aquaculture Standards. Email, 30th September 2011
In recent years the production of tropical prawns, or shrimp, as they are also known, has rocketed, fuelled by consumer demand. This report concludes that shrimp farming in both Bangladesh and Ecuador is evidently unsustainable with negative impacts on the environment and on marginalised coastal communities around the world. It is also obvious that compliance of the production with the requirements for organic certification cannot be taken for granted. Naturland is but one of the actors that certify producers who do not fulfill the criteria for organic aquaculture production. For those who want to stop funding mangrove destruction and livelihood degradation around the world, the answer is simple: Stop buying, stop marketing, stop selling and stop eating tropical prawns.

SSNC’s Global Marine Programme is engaged in the work towards a new EU Fisheries Policy that is both sustainable and fair. SSNC supports capacity building and regional and national co-ordination of the organisations that represent African fish workers. Together with other environmental organisations in the Global South, SSNC pursues marine and coastal issues. Moreover, SSNC cooperates with organisations that deal with agriculture, forestry, climate change, chemicals, trade and food security. In total, SSNC collaborates with around 60 organisations in more than 20 countries. Much of this work is financed by the Swedish International Development Cooperation Agency, Sida.