




Casestudy: *AN OIL STAINED LEGACY*

Greenpeace do Brasil versus Petrobras S.A.




Oil spills always have been part and parcel of the production and distribution of oil – more so in emergent economies than in developed countries. The largest Brazilian company, oil producer Petrobras, is witness of this practical lesson. It has indeed had a history of oil spills and accidents. But in the 1990s, a series of accidents triggered the growing attention of the media. One of those accidents happened in 1997 at Petrobras' Reduc refinery along the Guanabara Bay in Rio de Janeiro. A report into the causes of the accident found that the pipelines at the Reduc refinery were badly in need of repair. When in 2000, another accident took place at the same refinery causing irreparable damage to the environment and threatening the livelihood of local fishermen, it caused a public outrage. Why had Petrobras not learnt from its past mistakes? A contingent of national and international NGOs, spearheaded by Greenpeace do Brasil, called on Petrobras to literally 'clean up its act'.

Societal Interface Management Challenges

PUBLIC  PRIVATE	PROFIT  NON-PROFIT	EFFICIENCY 	ETHICS/EQUITY
Trade-off between public (majority state-owned) and private (stock) interests	ISO 14001 and BS 8800 certification: enough?	Cutting cost in maintenance of pipelines	Good working conditions for employees
Refineries had no operating licence	Taking warnings by NGOs seriously	Declining staff numbers	Care of the bay and the environment
Trade-off between federal and state governments	Location of refineries is not always place that accidents happen	Precautions are expensive	Do not take away livelihood of local fishermen
Trade-off between state and local governments	Petrobras is 'pride' of Rio	Technological progress in deep-water exploration and clean	Responsibility also for what distributors (freight carriers) are doing?
Oil is a strategic sector			

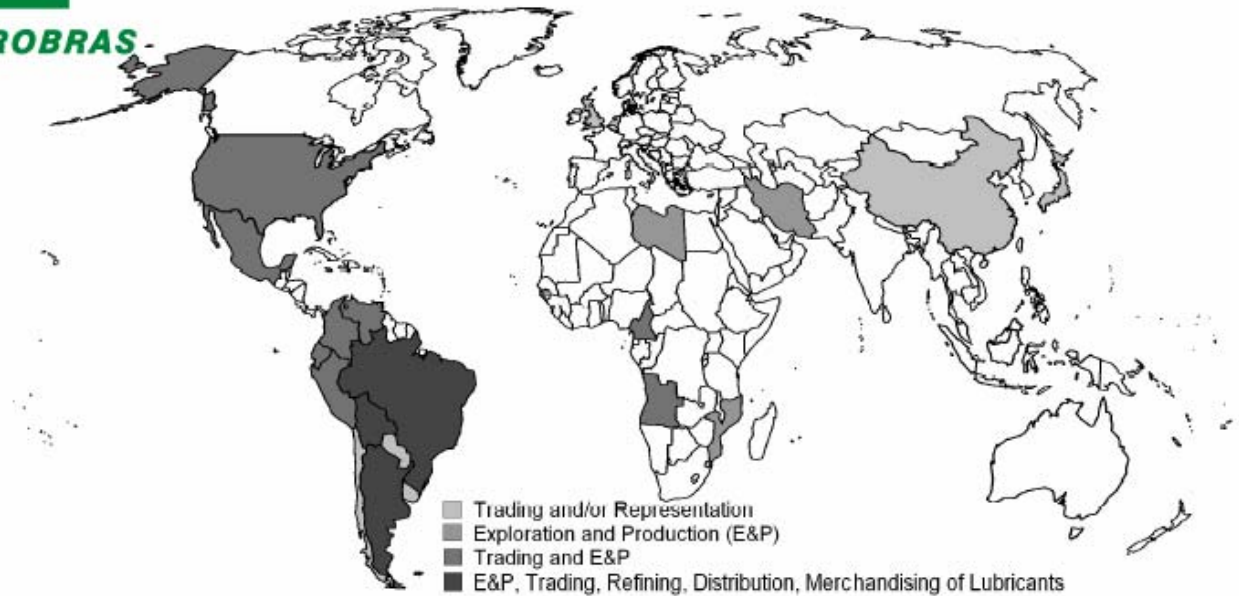
This case has been written by Lewis van Leeuwen and Rob van Tulder (RSM Erasmus University). Thanks go to the Fundacao Dom Cabral (Minas Gerais) for supporting the first author. The responsibility of the text rests fully with the authors. This case applies the methods and theories as used in the book "International business-society management: linking corporate responsibility and globalization" (2006, Routledge), www.ib-sm.org. The headers of the original Brazilian newspaper articles were translated into English.



<p>Petrobras earns valued currencies</p> <p>Definition of issue: Accident or environmental crime?</p> <p>Legal requirements for environmental policies are relatively modest</p>	<p>Poor employer: blamed accident on own employees</p> <p>Local fishermen lost their livelihood</p> <p>Effect on tourism</p> <p>Trade-off between Brazilian and international shareholders</p> <p>Defensive or more active approach to society?</p> <p>Independent or dependent monitoring?</p> <p>Monopoly position lowers perceptiveness to civil society?</p> <p>Trade-off between industrial and tourism interests</p>	<p>production techniques could reap a future competitive advantage</p> <p>Reaching strategic goals (energy independence of Brazil) at lowest possible cost</p> <p>Using cheap freight carriers</p> <p>Take warnings of employees seriously</p>	<p>Go beyond what is legally required?</p> <p>Oil spills in developing countries are 'part of life'</p> <p>Trade-off between short term strategic goals and longer term environmental goals</p> <p>Conflict of interest between technicians and managers</p>
<p>PUBLIC  PRIVATE</p>	<p>PROFIT  NON-PROFIT</p>	<p>EFFICIENCY </p>	<p>ETHICS/EQUITY</p>

Profile Petrobras S/A

Petróleo Brasileiro S/A, or Petrobras, was founded in 1953, to manage the Brazilian government's monopoly in the oil sector. The company is listed on the stock exchanges of São Paulo and New York, but the Federal Government of Brazil still holds 56 percent of voting capital. In 1997, the market for exploration and production of oil in Brazil was partly liberalised marking the end of Petrobras' monopoly. Petrobras is the world's 15th largest oil company according to the periodical Petroleum Intelligence Weekly and among a select group of companies producing over 2 million barrels of oil equivalent a day (boed). Celebrating its 50th anniversary in 2003, it is the biggest company of Brazil, and even the largest in the Southern Hemisphere, with a gross turnover of US\$ 51,9 billion in 2004, and a net profit of US\$ 6,2 billion. It has a fleet of 97 oil tankers, proved reserves of 11,8 billion barrels and 7.000 kilometres of pipeline throughout Brazil. It is represented in 22 countries across five continents and is leading in deepwater and ultra-deep-water oil exploitation-technology development. Since the mid-1990s, its degree of internationalisation rapidly grew in particular regarding sales. Petrobras has become an important actor in the international trade position and policy of Brazil. Its Transnationality Index (TNI), representing the relative importance of foreign to total in three areas: assets (FATA), sales (FSTS), employment (FETE), rapidly increased since the end of the 1990s. The internationalisation of exploration and production, however, contained sizable risks witnessing the nationalisation of Petrobras oil and gas facilities in neighbouring Bolivia in May 2006. The figure on the next page shows the activities of Petrobras around the world.



Transnationality Index for 2000-2004

Year	FA/TA	FS/TS	TNI
2000	3.92%	2.95%	3.43%
2001	4.65%	3.17%	3.91%
2002	8.94%	4.36%	6.65%
2003	12.45%	7.46%	9.96%
2004	10.99%	8.24%	9.61%

Note: Information is current as of 1 January 2005

Source: SCOPE Database

History of oil spills

Oils spills in developed countries have historically received more attention than oil spills in emergent economies.¹ Highly published oil spills such as the Exxon Valdez disaster in 1989 in front of the coast of Alaska triggered the foundation of a strong ecological movement, which later also proliferated to emergent economies. Since its foundation in 1953, oil spills, explosions and other accidents, some with fatal consequences, have haunted Petrobras. Since the 1970s, Petrobras has been involved in at least twelve oil spills over 100.000 litres and various fatal accidents (See Box 1, next page).

¹ Cf. Rob van Tulder with Alex van der Zwart (2006), *International Business-Society Management*, London: Routledge: p. 165.



Before 1997, Petrobras was involved in at least five major oil accidents²:

- ❖ In 1975, 6 million litres of crude oil spilt into Guanabara Bay when the Iranian oil tanker Tarik, freighted by Petrobras, sprang a leak. It is the biggest environmental disaster in Brazil to date; the damage caused to the environment was immense.
- ❖ In 1984, a leak in a pipeline caused an explosion in a slum in São Paulo. The slum was built on swamp-like terrain, under which lay a pipeline of Petrobras transporting petrol. The explosion killed 93 people and caused 700.000 litres of petrol to spill into the swamp.
- ❖ In 1984, 37 people died as the result of an explosion caused by a gas leak on Petrobras' Enchova oil platform.
- ❖ In May of 1994, 2,7 million litres of oil spilt from a terminal in São Sebastião, on the coast of the state of São Paulo, damaging 18 beaches. This area would be hit by more big and small oil spills in the years to come.
- ❖ In 1997, a leak in a pipeline at the Reduc refinery caused 600.000 litres of oil to spill into the Guanabara Bay of Rio de Janeiro.

Box 1

BIGGEST OIL SPILLS & ACCIDENTS PETROBRAS 1975 – 2001

Date	Damage	Location
March 1975	6 million litres	Guanabara Bay (RJ)
October 1983	1,5 ^{a,b} – 3 ^c million litres	Bertioga (SP)
February 1984	700.000 litres, 93 dead	Cubatão (SP)
August 1984	37 people dead	Enchova submarine
August 1989	690.000 litres	São Sebastião (SP)
January 1994	350.000 ^a – 400.000 ^b litres	Campos Basin (RJ)
May 1994	2,7 ^{a,c,d} – 3,1 ^b million litres	São Sebastião (SP)
March 1997	600.000 ^{a,b} - 2,8 million litres	Guanabara Bay (RJ)
October 1998	1 ^c - 1,5 ^d million litres	São José dos Campos (SP)
January 2000	1,3 million litres	Guanabara Bay (RJ)
March 2000	18.000 litres	Tramandaí (RS)
March 2000	7250 litres	São Sebastião (SP)
July 2000	4 million litres	Barigui Iguazu Rivers (PA)
August 2000	1800 litres	Rio Grande de Norte
August 2000	4000 litres	Angra dos Reis (RJ)
November 2000	86.000 litres	São Sebastião (SP)
March 2001	1,4 million litres, P-36 sinks	Campos Basin (RJ)
December 2001	392.000 litres	Paranaguá Bay (PR)

Sources:

- a) Folha de São Paulo (23-07-2000)
- b) Folha de São Paulo, (03-10-2003)
- c) Estado de São Paulo, (16-03-2001)
- d) Ambiente Brasil
- e) Folha de São Paulo (06-11-2000)

²<http://www.ambientebrasil.com.br/composer.php3?base=./agua/salgada/index.html&conteudo=./agua/salgada/vazamentos.html>. Consulted: 11 January 2005



During the 1980s and beginning of the 1990s, public awareness about environmental issues in Brazil started to grow, and Petrobras faced increasing pressure to reduce the number of accidents. Petrobras tried to minimise the occurrence of accidents as much as possible, but did not do so in a structured and coordinated manner. There was no company-wide environmental safety strategy; each unit, each refinery drew up its own plan. This stance was re-enforced, because Petrobras' accident rate compared to other oil companies before 2000 was considered average, according to its own managers.³



Guanabara Bay, Rio de Janeiro (RJ)



In 1997, an accident happened at the Reduc refinery along the Guanabara Bay in Rio de Janeiro. This bay is one of the icons of the city, and a main tourist attraction because of its beauty. It is essential to local fishermen who depend on the bay for their livelihood, and it is also an environmental protection area that is home to over 167 species of birds.⁴ During the accident, 600.000 litres of oil, according to Petrobras, and two million litres, according to Sindipetro, the petroleum industry's union, spilt into the bay causing a lot of damage to the environment and destroying the livelihood of the local fishermen, who could no longer catch fish in the bay. Technicians of Petrobras had informed the company about problems with the pipelines, and said that they badly in need of repair. An investigation into the causes of the accident came to the same conclusion.⁵

At this stage, the issue was still in its infancy. There was societal discontent about the number of accidents, but the pressure on Petrobras was not very great. In Petrobras' own words, the accident rate was 'average', so there was no need for immediate action. Petrobras reacted to each accident individually but did not take serious company-wide measures to improve safety and environmental excellence.

The conflict

Just three years later, on 18 January 2000, another big accident happened at the same refinery, and with the same pipes as in 1997. This time however, the damage to the environment was far greater. The pipes connected the Reduc refinery to an offshore tanking terminal on D'Agua Island in the bay.

³ Interview Jaime de Seta Filho 8 March 2005

⁴ <http://www.ambicenter.com.br/petrobras01.htm>. Consulted: 25 February 2005

⁵ 'Five years after the accident in the Guanabara Bay', *Surgente* (original source in Portuguese), Year 11, number 1018 – 13, 19-01-2005



Petrobras took nine hours to initiate its emergency plan, which allowed 1,3 million litres of oil to leak into the bay.⁶ It caused an oil slick measuring 50 square kilometres, and was dubbed the city's worst environmental disaster since 1975, when an oil tanker – with close links to Petrobras - spilt 6 million litres of oil into the bay.⁷



Guanabara Bay in January 2000

The oil spill caused irreparable damage to the environment, and threatened the livelihood of the fishing communities in the region. Oil washed up on two small beaches, a mangrove swamp, and on part of Paquetá Island, a popular resort for tourists. Thousands of birds and sea creatures died. A report, published by the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA), said the bay could take ten years to recover. The report said the whole food chain had been damaged; seabirds lost heat insulation, crabs were poisoned and dangerous to eat, fish died due to lack of oxygen, and larvae and fish eggs were affected.⁸

Environmental groups, especially Greenpeace, were furious with Petrobras, pointing at the accident of 1997 and saying Petrobras had not learnt from its previous mistakes. The pipelines at the refinery had long passed their 'expiration date' and were badly in need of maintenance.⁹ Furthermore, Petrobras was completely unprepared to deal with a disaster of this kind. The pipes did not have leak detection technology in place, which would have enabled a quick response to the accident, and Petrobras did not have an emergency plan ready to deal with the situation.¹⁰



Greenpeace do Brasil

Greenpeace is a non-governmental organisation dedicated to the protection of the environment. It established itself in Brazil in 1990. Its main areas of action are: Energy, the Amazon, Oceans, Toxics, Climate, Nuclear Waste and GM Crops. In Brazil, Greenpeace has 3 million members (sócios). Greenpeace is well known for its protests against large oil companies and other polluters, and has become one of the most visible and international environmental NGOs in the world. It has a strong central coordination of its strategies around the world.

⁶ 'Petrobras 1953 – 2003; Environment: Accidents and oil spills stain the image of the company', *Folha de São Paulo* (original source in Portuguese), 3 October 2003.

⁷ <http://news.bbc.co.uk/1/hi/world/americas/611231.stm>, Consulted 14 January 2005.

⁸ <http://news.bbc.co.uk/1/hi/world/americas/621397.stm>, Consulted 14 January 2005.

⁹ 'Petrobras 1953 – 2003; Environment: Accidents and oil spills stain the image of the company', *Folha de São Paulo* (original source in Portuguese), 3 October 2003.

¹⁰ <http://news.bbc.co.uk/1/hi/world/americas/616132.stm>, Consulted 14 January 2005



Furthermore, none of Petrobras' units in the Guanabara Bay area had environmental licences at the time. The Reduc refinery had been operating without a license since 1996.¹¹ Between 1997 and 2000, twelve separate accidents had taken place with oil pipelines at the REDUC refinery, six of which at the terminal on D'Agua Island.¹²

Twenty Greenpeace activists chained themselves to Petrobras' Rio de Janeiro headquarters in protest, hung up banners saying "Enough Pollution", and placed dead birds, blackened by the oil, on the pavement in front of the building's entrance.¹³ Local fishermen also protested outside the Petrobras building blaming the company for destroying their means of income. They demanded from Petrobras that they buy their fish because they could no longer sell it.¹⁴

Petrobras immediately formed an internal committee, without representation of for instance trade unions, to determine the causes of the accident. The committee concluded that 'human error' and a software problem were the cause of the accident. The culpable operator was suspended for 29 days, and his supervisor and a manager were relieved from their management responsibilities.¹⁵ A second committee, consisting of Rio de Janeiro's Regional Council for Engineering, Architecture, and Agriculture (CREA-RJ) and representatives from the trade unions, however, dismissed the claims that human error was to blame and instead accused Petrobras of not heeding the warnings that its own employees had given after the accident in 1997.¹⁶



This accident was the 'triggering event' that spurred the issue into the growth phase of the issue life cycle. It acted as a trigger for various reasons: 1) it affected Guanabara Bay, one of Rio de Janeiro's most beautiful areas and an area that had suffered badly due to oil spills in the past; 2) it was the worst environmental disaster in Brazil since 1975, caused irreparable damage to the environment and threatened the livelihood of the local fishermen; 3) it demonstrated clearly Petrobras had failed to address the issue adequately and had not heeded earlier warnings from the accident in 1997; 4) NGOs started to get involved demanding Petrobras make radical improvements.

The accident in Paraná

To make matters worse for Petrobras, another disaster took place only six months after the spill in Guanabara Bay. This time a pipeline of the Repar refinery in Brazil's southern state of Paraná sprang a leak, and 4 million litres of oil spilt into the Barigüi and Iguazu rivers, turning them black of a length of 10 kilometres. The damage to the environment was not as extensive as the January accident, but in terms of volume, it was the biggest accident since 1975.¹⁷

¹¹ 'Five years after the accident in the Guanabara Bay', *Surgente* (original source in Portuguese), Year 11, number 1018 – 13, 19-01-2005.

¹² <http://www.ambicenter.com.br/petrobras01.htm> . Consulted: 25 February 2005

¹³ <http://www.amazonia.net/Articles/379.htm> , Consulted 18 August 2005

¹⁴ 'Five years after the accident in the Guanabara Bay', *Surgente* (original source in Portuguese), Year 11, number 1018 – 13, 19-01-2005

¹⁵ 'Five years after the accident in the Guanabara Bay', *Surgente* (original source in Portuguese), Year 11, number 1018 – 13, 19-01-2005

¹⁶ 'Five years after the accident in the Guanabara Bay', *Surgente* (original source in Portuguese), Year 11, number 1018 – 13, 19-01-2005

¹⁷ 'Petrobras admits not having acted quickly on first day of spill', *Folha de São Paulo* (original source in Portuguese), 18 July 2000



Petrobras faced the same accusations as it had six months earlier: no leak detection technology in place, poor equipment maintenance, low staff levels, and no emergency plan.¹⁸ This time, the minister of the environment, José Sarney Filho, was also among the critics. To demonstrate Petrobras' lack of readiness for an accident of this type Petrobras deployed the wrong type of floating barrier to prevent the oil from spreading.¹⁹ Ironically, the Repar refinery had received ISO14001 and BS8800 certification just three weeks before the accident took place.²⁰



The Barigüi river in July 2000, Petrobras used floating barriers to stop the oil from spreading

Greenpeace was again outraged by the disaster, which was the sixth accident in six months involving Petrobras, and the second “mega disaster”.²¹ It accused Petrobras of serious neglect and contempt for the environment in which it operated, and said profound changes within the company were needed. Greenpeace’s campaign director said the long years of monopoly had created a closed and arrogant culture within the organisation, favouring increase of production rather than investing in operational and environmental safety.²² In a letter to Petrobras, the NGO demanded “legally binding commitments with Brazilian society” to seriously invest in analysis, planning and training of personnel to stop the succession of accidents and to be totally prepared for any accident in its daily operations. It also demanded Petrobras an independent investigation into the disaster, full payment of all costs of cleaning and compensation, and the creation of emergency and contingency plans for all its large operations.²³

With this accident, and the subsequent response of Petrobras’ most important environmental stakeholder, Greenpeace, the issue entered the development stage of the issue life cycle. The accident received attention nationally and abroad, putting Petrobras in the spotlight. Greenpeace demanded dramatic changes to corporate policies.

¹⁸ ‘Attacked and Violated’, *Cidades do Brasil* (original source in Portuguese), Year 1, Ed. 10, June 2000, Curitiba.

¹⁹ ‘Petrobras admits not having acted quickly on first day of spill’, *Folha de São Paulo* (original source in Portuguese), 18 July 2000.

²⁰ ‘Attacked and Violated’, *Cidades do Brasil* (original source in Portuguese), Year 1, Ed. 10, June 2000, Curitiba.

²¹ http://www.greenpeace.org.br/toxicos/?conteudo_id=368&content=1, Consulted 20 January 2005.

²² ‘Interview with Délcio Rodrigues, Campaign Director of Greenpeace Brazil’, *Integração* (original source in Portuguese), Year 4, No. 2, May 2001.

²³ http://www.greenpeace.org.br/toxicos/?conteudo_id=368&content=1, Consulted 20 January 2005.



The response

Immediately after the accident in January 2000, Petrobras, through its president Henri Philippe Reichstul (picture), said it would not hide behind excuses but would take full responsibility for the accident and compensate the damages.²⁴ Reichstul said the company would learn its lessons from the accident in 2000, and promised that an “environmental revolution” within the company. However, at the same time President Reichstul also said Petrobras had not been neglectful and denied that lessons from the 1997 accident had not been learnt. Petrobras had merely not finished implementing the changes.²⁵

Petrobras spent over R\$ 100 million until the end 2000 on recovering the spilt oil, cleaning up the effected areas, and compensation, including a US\$ 10 million (R\$ 35 million) fine, and a US\$ 5 million (R\$ 15 million) contribution to a Federal Government Fund to protect the Guanabara Bay.

In May 2000, Petrobras launched what was to be the answer to all its critics and the solution to its safety problem; a new programme for excellence in environmental and operational safety management, called Pegaso. It took four months, nine senior managers, and 80 technicians do develop, and outlined a uniform corporate strategy for environmental and operational safety. Petrobras invested more than US\$ 2 billion (R\$ 6,2 billion) in Pegaso in four years, more than any petroleum company has ever invested in an environmental and operational safety programme in such a short time.²⁶ As part of the programme, all Petrobras’ installations now have the ISO 14001 (environment), and the BS 8800, or the OHSAS 18001 (safety and health) certification. Nine Environmental Defence Centres have been established, with trained personnel on duty 24 hours a day, and equipped with ships, absorbing devices, rafts, and tens of kilometres of absorbing floating barriers.



Since its implementation, Pegaso has rendered positive results. The following graph demonstrates the decline in the number of accidents involving Petrobras staff during work hours.

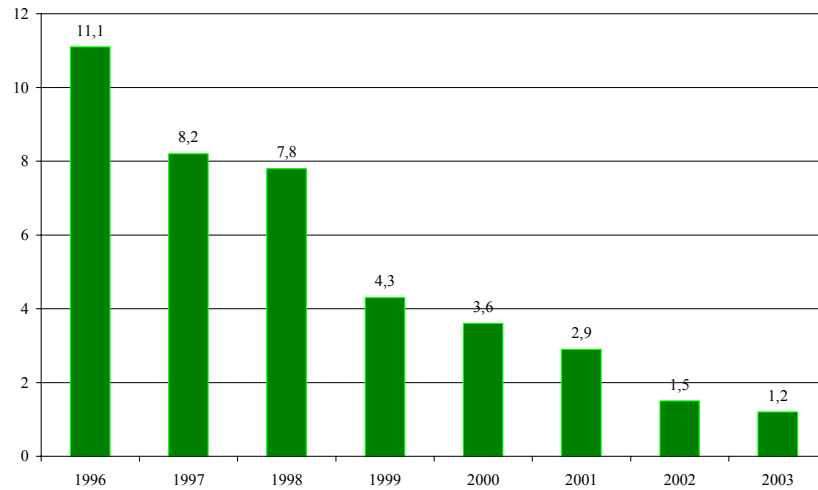
²⁴ ‘Some Lessons from the spill in the Bay’, *Ambiente* (original source in Portuguese), Year 5, No. 49, p. 2, January 2000.

²⁵ ‘A Tragic Lesson;’, *Isto É* (V) No. 1548, 09-02-2000.

²⁶ Petrobras Annual Report 2004.



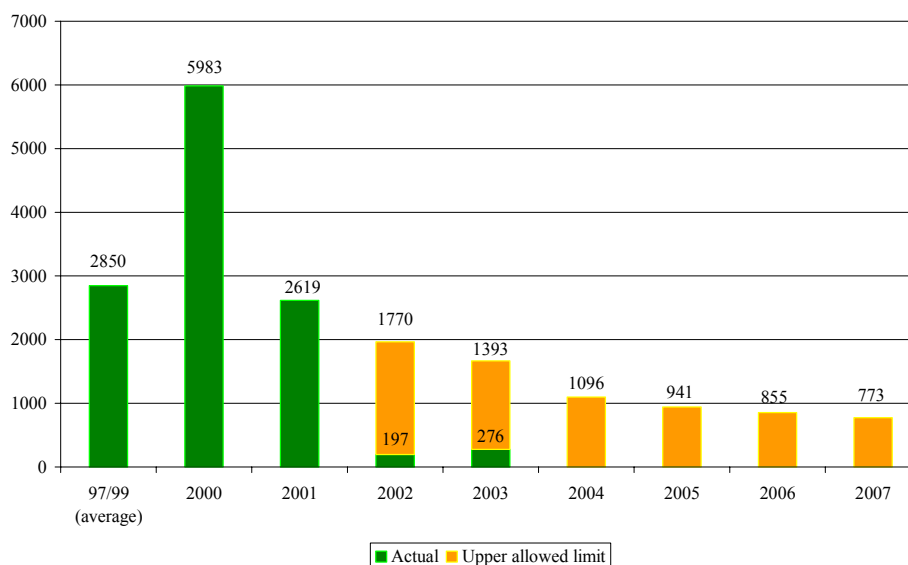
Figure 1
Number of accidents involving Petrobras 1996 – 2003
 (Per million man-hours of exposure to risk resulting in time off work consolidated for all Petrobras' activities (including third parties) in Brazil and abroad)



As the graph shows, the number of accidents was already coming down before Pegaso was implemented, but only in the last two years has it really reached significantly low levels. The goal for the coming years, as defined in Pegaso, is to bring the number of accidents steadily down to 0,5 per million man-hours of exposure to risk by 2010.

In July of 2001, Petrobras launched a US\$ 500 million (R\$ 1,7 billion) project to bring the quality and safety of the pipelines up to standard and install automated supervision systems along Petrobras' pipeline network, totalling 7.000 kilometres. This system has contributed to a reduction of 90 percent in oil spilt between 2000 and 2003 (Figure 2)..

Figure 2
Leakage volume per year and maximum allowed upper limit (Volumes in cubic metres)



Source: Petrobras Annual Report 2004



The year 2002 saw a record low of 197.000 litres of oil spilt, a reduction of 97 percent compared to two years earlier. In 2003, the amount of oil spilt rose again to 276.000 litres, which is still within the upper bounds defined in Pegaso.

Greenpeace and environmental groups alike have welcomed the measures Petrobras has taken, but said the company should have done this years ago because the damage caused to the environment cannot be undone. Greenpeace said its position with respect to oil companies and the use of non-renewable fossil fuels was unchanged: The issue of preventing accidents is not limited to good maintenance and control of pipelines and oil tankers; there will always be a certain degree of risk. Therefore, Greenpeace supports the gradual substitution and elimination of fossil fuels in favour of alternative, renewable sources of energy like solar and hydropower.²⁷

With the implementation of the new environmental and operational safety programme, Pegaso, Greenpeace got what it wanted and the issue entered the maturity phase. Petrobras made changes to its policy and the improvements in performance were noticeable. Although the degree of risk will never be zero and accidents can be completely prevented, Pegaso did a lot to close the expectancy gap between Petrobras and society.

Petrobras' stance in this case can be characterised as active because it dealt with the issue in the growth phase. It accepted all responsibility for the accident and promised it would learn from its mistakes. This clearly shows a bridging attitude. Before January 2000, Petrobras was mainly reactive towards accidents and oil spills, and did not consider them important issues. The Guanabara Bay accident and the subsequent introduction of Pegaso changed that.

Demonstrable indicators of reputational damage

The two accidents in 2000 were a huge blow to Petrobras and to its reputation. The question is if the accidents caused any measurable damage to reputation indicators. Damage to reputation is felt mostly in relation to three primary stakeholders: customers, shareholders, and employees. These three types of stakeholders operate on three 'markets': consumer markets, capital markets and labour market. The indicators of reputational damage that belong to the three stakeholders are: market share/revenues, share price, and desirability as an employer.²⁸

Consumer market

There have been no reports of consumer boycotts against Petrobras because of the 2000 oil spills. The company managed to increase its revenues and profit markedly in 2000 compared to the year before, largely due to sharply rising oil prices worldwide.²⁹ Petrobras' net operating revenue grew 65 percent to almost US\$ 27 billion, while profits increased six fold to over US\$ 5 billion. Other large oil companies saw sales and profits rise substantially over the same period. Shell's revenues and profits grew 42 and 48 percent respectively³⁰, and ExxonMobil increased earnings by 25 percent while profits doubled compared to 1999³¹.

²⁷ 'Petroleum and the aggression towards the environment', *Com Ciência: Petróleo* (original source in Portuguese), No. 38, December '02 – January '03

²⁸ Van Tulder with Van der Zwart (2006) , *International business-society management: linking corporate responsibility and globalization*, London: Routledge, chapter 11.

²⁹ Average of US\$ 34,61 per barrel in 2000 compared to US\$ 21,58 in 1999 (Petrobras, 2000).

³⁰ Shell Annual Report 2001.

³¹ ExxonMobil Annual Report 2001.



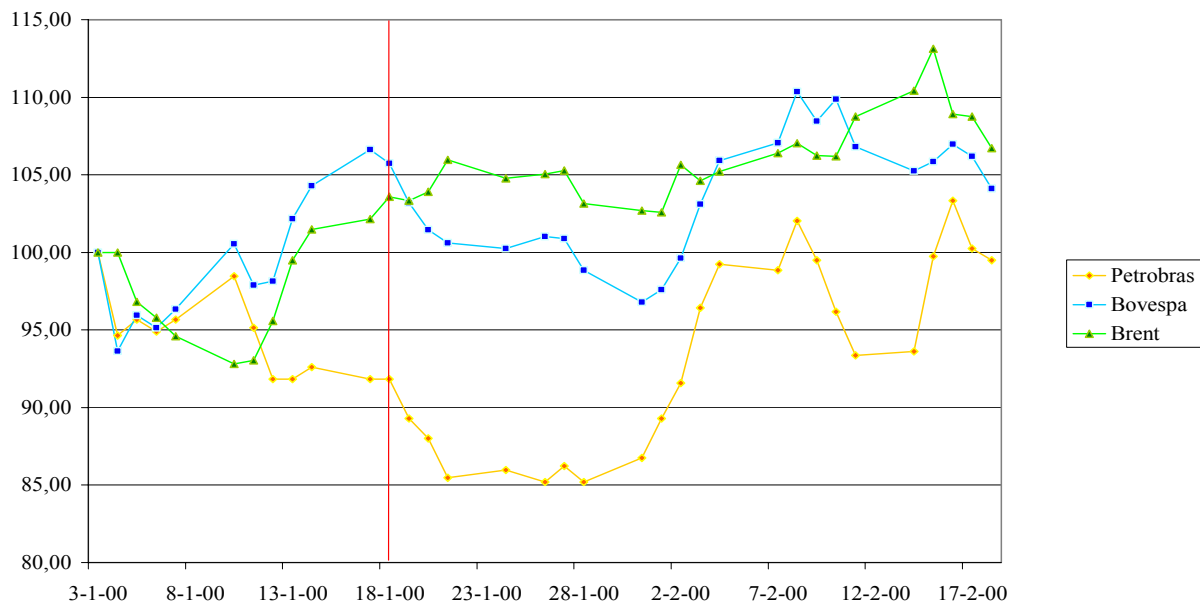
However, downstream distribution company Petrobras Distribuidora, which manages Petrobras' 7000 petrol stations, saw its market share drop by 6 percent in 2000 after having been stable the previous three years. This decline in market share could quite well reflect the tarnished reputation of Petrobras in the eyes of consumers. Petrobras' petrol stations are the company's only business to consumer (b2c) activities and therefore the only way for consumers to directly 'punish' Petrobras. Therefore, the decline in market share is a plausible indication of reputation damage. In 2001, Petrobras Distribuidora regained 2,5 percent of its market share.

Capital Market

Petrobras is a majority state-owned company, as the Federal Government of Brazil owns 55,7 percent of its shares. However, its shares are also publicly traded on the stock market. Reputation effects primarily materialise in the national capital market. In order to assess the effect of the oil spills on Petrobras' capital market performance, the share price of Petrobras' normal stock on the São Paulo Stock Market (Bovespa) during two separate intervals of two weeks before and four weeks after each accident were considered. Petrobras also trades preferential stock on the Bovespa, but performance of the two is practically identical so it suffices to consider just the normal stock.

Petrobras' share price evolution was compared to the performance of the Ibovespa, Bovespa's main index, and to the price of Brent oil. In order to make for easy comparison the values of the three variables on the first trading day of the month were indexed.

Figure 3
Petrobras Share Price – Ibovespa Index – Brent Oil
3 January – 18 February 2000
(Indexed: 3 February = 100)



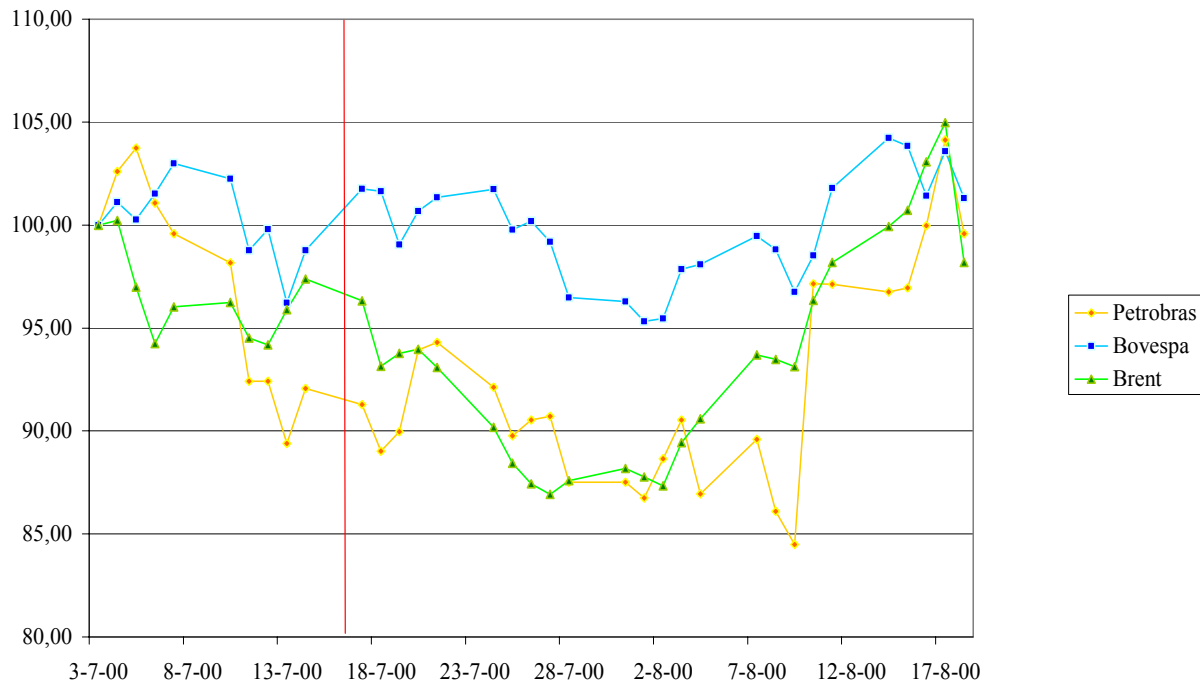
Source: Based on data from: www.petrobras.com.br

Figure 3 shows that Petrobras' stock price began to drop in the second week of January, at a time when both the stock market and the price of oil were going up. When the accident happens on 18 January, indicated by the red line, Petrobras' share price falls sharply, as does the Bovespa Index. Petrobras' combined share in the Ibovespa is 10,9 percent, making it the largest company in the index. It is quite likely that the drop in share price after 18 January was a reaction to the accident, which pulls the Ibovespa down too. It is interesting to see that Petrobras' share price did not seem to follow the rise in the price of oil.



The effect of the second accident on the capital market is far less clear, despite the fact that it happened only six months after the previous accident (Figure 4).

Figure 4
Petrobras Share Price – Ibovespa Index – Brent Oil
3 July – 18 August 2000
(Indexed: 3 July = 100)



Source: Based on data from: www.petrobras.com.br

This time Petrobras' share price seems to mirror the price of oil. On the second day after the accident Petrobras shares fall sharply, but it seems more likely that it is a reaction to the fall in oil prices the same day rather than to the accident. Apart from that, there is no visible indication that Petrobras' share price suffered as a result of the accident in Paraná. An explanation is that the main damage to Petrobras' reputation was already done with the first accident. The sharp rise that took place on 10 August was caused by intense speculative movement in Petrobras shares, due to the sale of 180 million Petrobras shares by the Federal Government.^{32, 33}

Labour market

Useful statistics on the position of Petrobras in labour markets are hard to find. It is a fact that Petrobras has not been in the top 50 of 'best companies to work for', as compiled annually by leading business magazine Exame, since at least 1998. Data before this year could not be accessed. In August 2005, Exame published a top 150 of employers, and Petrobras was not among them either. This can be considered telling for Petrobras' poor position on the labour market, considering that it is Brazil's largest company and considered a national symbol by the government who refuses to privatise the oil giant.

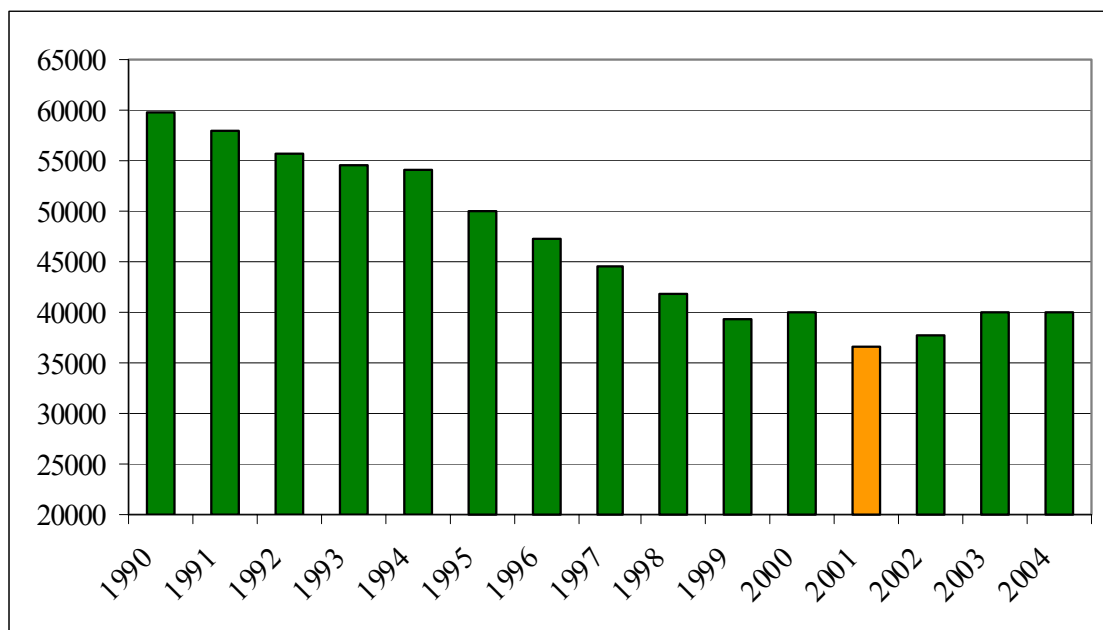
³² Petrobras Annual Report 2001.

³³ 'Market speculation gives small investors 50% profit', *Folha de São Paulo* (original source in Portuguese), 11 August 2000.



Employment statistics from 1990 to 2004 show a steadily declining trend (Figure 5). In 1990, Petrobras employed around 60.000 people, in 2004 this figure had declined to just under 40.000 of which an increasing number work abroad in the international activities of the company. This most likely has to do with the downsizing of the company, the selling-off of business units by the Federal Government as part of the national privatisation programme and Petrobras internationalisation. Interesting detail is that in 2001, the year after the two oil disasters took place Petrobras reached a record low in employment figures; 36506. It is not likely that this decline is the direct result of damage to Petrobras' image, or merely part of a 'natural' outflow of staff, but considering the demonstrable damage done to Petrobras' reputation on the two previous fronts, it is at least a plausible indirect effect (certainly for the higher ranked positions in the company that require highly trained workers; with them the oil industry represents more of a 'smoke stack industry' than the more interesting IT or Aerospace industry).

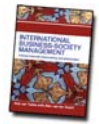
Figure 5
Number of Petrobras employees 1990 – 2004



Source: www.petrobras.com.br

Outcome

Overall, Petrobras experienced damage to its reputation on two fronts: the consumer market and the capital market (for the January 2000 accident), and plausible indirect damage on the labour market. Petrobras disciplined itself with the implementation of Pegaso, investing a record amount of money in prevention of accidents and maintaining pipelines. The results show that Petrobras has improved its performance significantly indicating the company has (finally) learnt its lesson. However, the petrochemical sector remains a high-risk business and accidents can always happen. Furthermore, the strategic and political interests are high, which makes it a prime candidate for 'cover up' operations at the Federal and state level. When they happen in the future, it is the manner they are dealt with that will show whether the company has implemented the appropriate management system and adopted the right mentality.



Who's interests were met?

With the implementation of Pegasus, Greenpeace's interests were met. The NGO had demanded changes in corporate policy and reduction in accidents and oil spills, and that is what Pegasus has accomplished. Despite this, Greenpeace remains critical of the large oil company and remains in favour of the use of renewable non-fossil fuels.

In 2002, a syndicate of fishermen from Rio de Janeiro who were affected by the 2000 disaster won an important court battle and received US\$ 160 million (R\$ 524 million) in compensation for material damage to boats, nets and equipment and for loss of income for four years. Petrobras had already made payments to fishermen in the first month after the accident, but that was only for material damage.³⁴

Issue resolved, case closed?

Oil spills will always be an issue for oil companies. As long as Petrobras keeps drilling for oil and transporting it through pipelines and by ship, there will be a risk involved, no matter how much money it invests in prevention and maintenance. This is the core of Greenpeace's argument and the main reason it will remain opposed to the use of fossil fuels.

Indeed, Petrobras has not managed to prevent accidents completely, despite all the investment put into Pegasus. According to the company's own data, it was involved in 95 separate incidents between January 2000 and March 2001.³⁵ The worst accident was probably the sinking of the world's largest oil platform, P-36, in March 2001. An explosion caused the platform to sink, 10 people died and two were seriously injured.³⁶ As a result, 1,4 million litres of oil spilt into the Campos Basin in Rio de Janeiro³⁷. At the end of 2004, another accident happened in the Campos Basin, this time the spill went on for two weeks spilling 600 litres of oil into the basin per day.³⁸

The aftermath

In January 2005, exactly five years after the Guanabara accident, a report, published by the environmental group Os Verdes and the petroleum workers' trade union, Sindipetro, disposed once again of Petrobras' version of the truth claiming the 2000 Guanabara Bay accident was caused by human error. Instead, the report points at Petrobras' omission in relation to the warnings given after the accident with the same pipeline in 1997³⁹. The report went on to say that the estimate of 1,3 million litres of oil spilt during the accident might not be accurate because it only accounted for the amount of oil that leaked out of the pipe, not the oil that was still in the pipe. Researchers from the São Paulo State Government Institute for Environmental Sanitation Technology, Cetesb, calculated that the total amount of oil spilt in 2000 was 3,4 million litres.⁴⁰

³⁴ http://www.mercadodapesca.com.br/noticias.php?mes_not=2&id=30, Consulted 25 August 2005.

³⁵ <http://www.wwf.org.br/informa/noticias.asp?item=58&action=detail>, Consulted on 20 January 2005.

³⁶ Oil Watch Network, 'Resistance Bulletin No. 15', April 2001.

³⁷ 'Petrobras 1953 – 2003; Environment: Accidents and oil spills stain the image of the company', *Folha de São Paulo* (original source in Portuguese), 3 October 2003.

³⁸ 'Five years after the accident in the Guanabara Bay', *Surgente* (original source in Portuguese), Year 11, number 1018 – 13, 19-01-2005.

³⁹ 'Study shows what has been done five years after the spill', *Surgente*, (original source in Portuguese) Year 11, number 1019, 27-01 – 02-02-2005, pp. 3.

⁴⁰ 'Study shows what has been done five years after the spill', *Surgente*, (original source in Portuguese) Year 11, number 1019, 27-01 – 02-02-2005, pp. 3.