

Questions not asked about Prestige spill

DR SIMON CRIPPS

STANDING on the beach near the village of Caion, seeing the heavy black sludge that covers the beaches and headlands and knowing more is on its way, many questions spring to mind. Why was an old single-hulled oil tanker chosen to carry such a dangerous cargo? Did it by-pass routine maintenance checks? Who is responsible for the accident? Who will pay for the damage? What will happen to the 60,000 tonnes of oil that went down with the *Prestige*?

These are all important questions, and need to be answered. But there's another question that has not been so often asked: why was an oil tanker anywhere near the Galician coast in the first place?

The *Prestige* should never have been where it was. It carried a load of heavy industrial fuel - one of the worst possible types of oil to spill - into an area rich in marine and bird species and where over 60 per cent of the local population depend on fishing for their livelihood. Added to this, once the tanker started leaking its cargo, it was towed out to sea where it sank within the Galicia Bank: a sea mount, or underwater mountain, with very high biodiversity that WWF has proposed be designated as a Marine Protected Area.

The effects of the oil already in the water and coating the coastline are serious. Current estimates are



A large oil slick covers a beach on Sisargos island, some 40 kilometres south of La Coruna. Oil from the sunken tanker *Prestige* has wreaked havoc on Spain's northern coast since it went down November 19.

4,000 Galician fishermen and up to 28,000 people in associated industries will be out of work. The area's fisheries are likely to be affected for as many as 10 years, and impacts on the environment may well be evident for the next 20-30 years. And, as bad as it is now, if the

60,000 tonnes of oil still in the tanker are not contained, the effects will be catastrophic.

Media attention has highlighted the dangers of single-hulled oil tankers and the need for stricter maintenance regulations, and is now turning to assigning blame for

the accident. But we need to remember that even with strict ship design and maintenance laws, and even if oil and shipping companies are held accountable for spills, accidents will still happen.

Shipping carries 80 per cent of international trade. There will

always be groundings, collisions, and other accidents that not even the best of rules can prevent. It's not enough to focus solely on reducing the likelihood of future oil spills. Governments also need to ensure that spills don't occur in vulnerable marine areas.

The International Maritime Organisation (IMO) already has the capacity to do this. In 1991, the IMO adopted the concept of Particularly Sensitive Sea Areas - areas vulnerable to damage by international shipping activities that need special protection because of their ecological, economic, cultural, or scientific significance.

Particularly Sensitive Sea Areas are marked on international nautical charts, and mariners are required to take extra care when navigating through them. Coastal states can also adopt additional protective measures for these areas to guard against particular risks associated with international shipping. These include banning single-hull vessels, identifying areas to be avoided and recommended routes, requiring experienced pilots on board when ships pass through these areas, and requiring mandatory reporting as ships transit sensitive areas.

A network of Particularly Sensitive Sea Areas together with strict shipping regulations tailored for each area would help reduce the impact of future oil, and other, spills.

The tragedy is that in the 11 years since Particularly Sensitive Sea

Areas were introduced, only five have been designated worldwide. The Galician coastline is not one of them.

Over 300 ships have sunk off the Galician coast in the past 100 years. A Particularly Sensitive Sea Area designation for this area could not have prevented the *Prestige* oil spill, but could have helped minimise risks to humans and wildlife in this and other sensitive coastal regions.

Previous oil spills have already led to improved shipping practices and regulations. The US introduced a phase-out of single-hulled oil tankers by 2015 after the 1989 *Exxon Valdez* oil spill. The 1999 *Erika* oil spill off the coast of France prompted the IMO to speed up their phase-out deadline to match that of the US, and also led to EU maritime laws being strengthened. While these laws are slow to come into effect and could still be further tightened, they are an essential step towards reducing the likelihood of future oil spills.

Hopefully the *Prestige* oil spill will be the catalyst for the next phase in the process: ensuring that any future spills do not affect vulnerable marine areas. This would help provide both people and wildlife with further protection against future shipping disasters.

- WWF feature

Dr Simon Cripps is Director, WWF's Endangered Seas Programme

ENVIRONMENT WATCH

Cleaning up Prestige spills

AFP, La Coruna, Spain

Authorities in northwest Spain used a break in the weather earlier this week to extend clean-up operations on more than 100 beaches blackened by oil spilled from a sunken tanker.

Hundreds of rubber-clad volunteers wearing masks picked up buckets and shovels to clear sand of the thick, toxic sludge that has washed ashore from the Liberian-registered ship *Prestige*, which sank on November 19 200 kilometres off the stormy Galician coast.

The effort was organised by regional and national authorities after days of rain and high winds gave way to partly sunny, if chilly, conditions that allowed the teams to attack the task unhindered.

"The weather's been that bad that it's been remobilising the oil across the shoreline," said David Oland, a coordinator from a British outfit called Oil Spill Response that helps oil industry and governments tackle such crises.

He was directing 80 students bussed in from nearby Santiago and La Coruna universities to clear contaminated sand on the beach in the town of Seiruga.

Even though bulldozers stood ready, Oland said most of the work had to be carried out by hand to minimise contamination and damage.

"We don't want to remove the beach, we want to remove the oil," he said.

Similar scenes were taking place along the 400 kilometres of affected coastline, with the volunteers taking over in some cases from soldiers, who were taking a weekend break.

Spain's deputy prime minister, Mariano Rajoy, said during a visit to the region Saturday that 900 tonnes of oil have been trucked away since the "black tide", as locals call it, started. A total of 450 people were involved in the clean-up effort, he said.

The deposited oil came from the first slick released by the *Prestige* as it was towed out to sea after getting into trouble in storms last week.

Authorities in Spain, neighbouring Portugal and France fear that at least two other slicks of at least 11,000 tonnes of oil that have been spotted just off the Galician shore may also reach land, further savaging the region's rich wildlife and marine-based economy.

Winds and currents have so far kept them at sea but forecasters have been unable to predict what course they will take.

The 26-year-old ship was carrying 77,000 tonnes of heavy fuel oil when its single hull broke apart.

A French research submarine was also on its way to where the broken tanker is lying on the seabed, at a depth of 3,500 metres.

The three-man submarine, which was famously used to explore the wreck of the *Titanic*, will be used to see whether the 60,000 tonnes of fuel oil remaining in the tanker's opened belly is leaking to the surface.

If the remaining oil makes it to shore, it would provoke a worse environmental catastrophe than that created by the shipwreck of the tanker *Exxon Valdez*, which spilled 37,000 tonnes of oil onto Alaska 10 years ago.

Spanish officials say they believed the oil had solidified because of the near-freezing temperature and pressure at that depth under water, and that it no longer posed a threat.

But environmentalists, including Greenpeace, accuse the government of deliberately under-reporting the amount of oil floating offshore. They say the real amount is closer to 20,000 tonnes.

On November 23, the international lobby group placed 15 bucketfuls of fuel oil in front of government offices in La Coruna with a sign saying "Oil kills" as a protest against what they called the "passivity" of authorities in the face of the catastrophe.

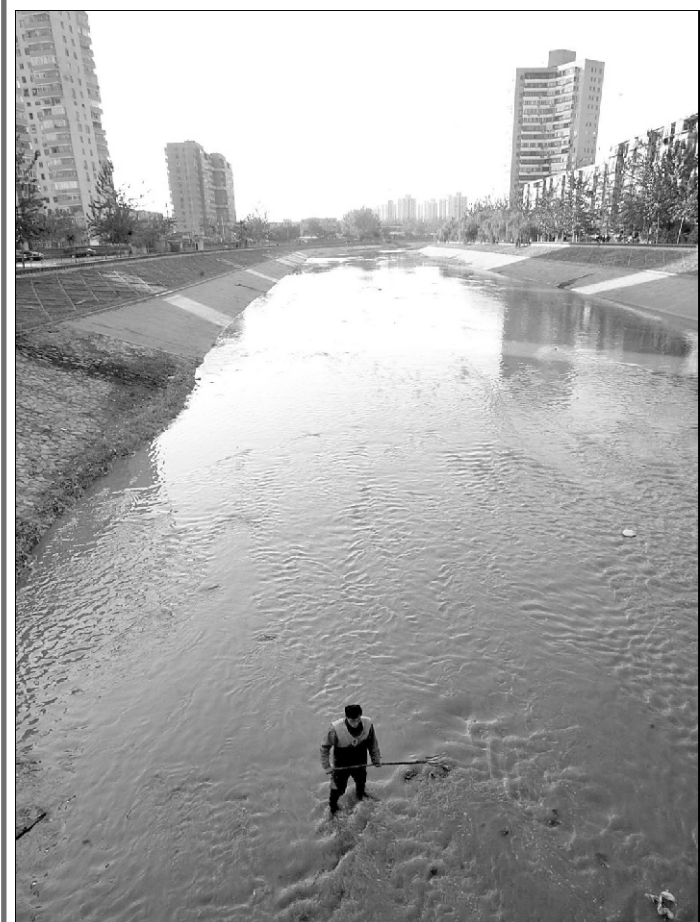
The organisation was notably angered by local authorities' refusal to provide containers for storing the fuel oil recovered from the Barranan beach.

Greenpeace's executive director for Spain, Juan Lopez de Uralde, said his activists were calling for "urgent measures against the pollution of the *Prestige* and demand measures which will prevent oil slicks from occurring."

Spain and Portugal are already moving in that direction. Spanish Foreign Minister Ana Palacio said both countries will call on the European Union at a summit next month to move shipping lanes farther away from their coastlines.

She also said Madrid and Lisbon would look at putting into place "a rapid alert system" for maritime accidents.

Beijing wakes up



A worker collects garbage strewn in a canal that surrounds the city centre of Beijing. China's legislature has launched an investigation into levels of water pollution which state environmental officials have described as "rather serious", and will focus on how to implement a law on the treatment or prevention of industrial pollutants, urban sewage and pollution caused by fertiliser and pesticide discharged from farmland.

Politics of knowledge

VANDANA SHIVA

THE issue of indigenous knowledge in the Convention on Biological Diversity (CBD) forces us to rethink many of the biases that have been built into the characterisation of knowledge.

Inherent in the classification and categorisation of traditional knowledge is the notion that Western knowledge traditions are scientific while non-Western traditions are unscientific and no longer valid.

There is no epistemological basis for characterising non-Western traditional knowledge as unscientific and Western knowledge as scientific. Traditional systems of knowledge have their own epistemological and scientific foundations. They differ from reductionist and Cartesian systems of Western knowledge. However, the mechanistic and reductionist assumptions on which the last few centuries of evolution of dominant Western science were based are being given up by emergent Western sciences themselves.

The idea that modern reductionist science is a description of objective reality, unprejudiced by value judgements, is being rejected increasingly on historical and philo-

sophical grounds. It has been historically established that all knowledge, including modern scientific knowledge, is built on the use of a plurality of methodologies, and reductionism itself is only one of the scientific options available.

There is no 'scientific method'; there is no single procedure, or set of rules that underlies every piece of research and guarantees that it is scientific and, therefore, trustworthy. The idea of a universal and stable method that is an unchanging measure of adequacy and even the idea of a universal and stable rationality is as unrealistic as the idea of a universal and stable measuring instrument that measures any magnitude, no matter what the circumstances. Scientists revise their standards, their procedures, their criteria of rationality as they move along and enter new domains of research just as they revise and perhaps entirely replace their theories and their instruments as they move along and enter new domains of research (Paul Feyerband, 'Science in a Free Society: New Left Books, 1978, p10).

The emergent theories of complexity, dissipative structures and self-organisation that are replacing the reductionist paradigm of biology

have more in common philosophically with traditional systems of knowledge than with Cartesian knowledge. (Fritjof Capra, 'The Web of Life', Anchor Books, 1996).

Ignoring the latest development in the sciences the CBD Secretariat papers replicate the biases that characterise Western reductionist knowledge as scientific and fail to see the scientific basis of traditional knowledge.

Epistemologically flawed

The nomenclature of 'Scientific Knowledge' and 'Traditional Knowledge' is epistemologically flawed. It suggests that traditional knowledge is not scientific. In reality, what we have is different traditions of knowledge and traditional knowledge systems have their own scientific basis. In some cases, modern 'scientific' knowledge is highly unscientific when viewed from the perspective of forest biodiversity. For example 'scientific' forestry views non-commercial species as 'weeds'. Similarly, the introduction of alien species such as eucalyptus guided by 'scientific forestry' principles can lead to the destruction of forest biodiversity. These systems of forestry science lack an ecological perspective, which many systems of traditional knowledge have.

The 'ecological perspective' and 'scientific' status have in the report been dissociated from traditional knowledge, disrespecting diverse knowledge traditions and falsifying their characteristics.

The idea of split and hierarchy between 'scientific' and 'traditional' knowledge should be rejected. Such a division cannot be epistemologically justified.

In the note on 'Traditional Related Knowledge', this false division is reintroduced in the Section on 'The nature of traditional knowledge'. This section identifies 'traditional' as local, in contrast to 'cosmopolitan' and 'Western' knowledge. This suggests all traditional knowledge has only localised relevance and existence.

However, major traditions such as systems of Ayurvedic knowledge which depend on a deep knowledge of medicinal plant biodiversity are also widely practised and are not restricted to small localities. The documents are therefore riddled with a Eurocentric bias in the analysis of knowledge, a bias which is particularly inappropriate in a subject matter dealing with cultural and biological diversity.

The CBD should avoid antiquated and false characterisations of traditional vs modern, unscientific vs scientific, non-Western vs Western, local vs cosmopolitan. The appropriate epistemological framework for the CBD is the recognition of diverse systems of knowledge as a pluralistic array rather than as a hierarchy. The CBD documents however falsely perpetuate a hierarchy.

Pluralism vs hierarchy of knowledge systems

Diversity and pluralism are the characteristics of the Indian environment and Indian society. We have a rich biodiversity of plants for food and medicine. This agricultural diversity and diversity of medicinal plants have in turn given rise to a rich plurality of knowledge systems in agriculture and medicine.

However, under colonial influence our biological and intellectual heritage was devalued. The priorities of scientific development and Research and Development efforts guided by a Western bias transformed the plurality of knowledge systems into a hierarchy of knowledge systems.

With knowledge plurality mutating into knowledge hierarchy, a horizontal ordering of diverse but equally valid and diverse systems is converted into a vertical ordering of unequal systems, with the epistemological foundations of the system being imposed on others to invalidate them.

Western systems of knowledge in agriculture and medicine were defined as the only scientific system. Indigenous systems of knowledge were defined as inferior, and in fact as unscientific. Thus, instead of strengthening research on safe and sustainable plant-based pesticides such as neem and pongamia, we focused exclusively on the development and promotion of hazardous and non-sustainable chemical pesticides such as DDT and Sevin. The use of DDT causes millions of deaths each year and has increased the occurrence of pests 12,000-fold. The manufacture of Sevin at the Union Carbide Plant in Bhopal led to the disaster which killed thousands and has disabled more than 400,000 people.

As the realisation of the ecological failure of the chemical route to pest control grows, the use of plant-

based pesticides is becoming popular in the industrialised world. Corporations that have promoted the use of chemicals are now looking for biological options. In the search for new markets and control over the biodiversity base for the production of biopesticides, chemicals, TNCs like W R Grace are claiming IPRs on neem-based biopesticides.

The experience with agrichemicals is replicated in the field of drugs and medicines. Indigenous systems of medicine and the biodiversity of medicinal plants were totally neglected in our scientific research and health policy which focused exclusively on the Western allopathic system and on technology transfer from the Western pharmaceutical industry. Thus the health and pharmaceutical budget was heavily weighted in favour of the development and dissemination of the Western allopathic system. In spite of lack of official support, indigenous medical systems are based on over 7,000 species of medicinal plants and on 15,000 medicines of herbal formulations in different systems. The Ayurvedic texts refer to 1,400 plants, the Unani texts to 342, the Siddha system to 328. Homeopathy uses 570, of which approximately 100 are Indian plants.

The economic value of medicinal plants to 100 million rural households is immeasurable.

As a result of increasing public awareness of side-effects of hazardous drugs, and the rise of strains resistant to antibiotics, the Western pharmaceutical industry is increasingly turning to the plant-based system of Indian and Chinese medicine. Patenting of drugs derived from indigenous systems of medicine has started to take epidemic proportions. The current value of the world market for medicinal plants from leads given by indigenous and local communities is estimated to be \$43 billion. Using traditional knowledge increased the efficiency of screening plants for medical properties by more than 400 per cent.

The failures and non-sustainability of the chemical route to agriculture and health care provide an opportunity to re-evaluate

knowledge systems, and move from the false hierarchy of these systems to a plurality. Such a pluralistic view of knowledge systems would imply respect for the different systems in their own logic and in their own epistemological foundations. It would also mean that one system (viz. the Western) does not have to serve as the measure of scientific adequacy for all systems, and diverse systems do not need to be reduced to the language and logic of Western knowledge systems.

The integrity of our biological intellectual heritage can be protected only in such a pluralistic perspective. A hierarchical perspective will continue to project the Western paradigm as scientifically superior in spite of its current failures in the context of sustainability of health care and nutrition. The assumption of hierarchy is also the underlying basis for legitimising piracy as invention.

This phenomena of 'biopiracy' and 'intellectual piracy' in which Western commercial interests claim products and innovations derived from and currently used by indigenous knowledge traditions as their 'intellectual property' protected through 'intellectual property rights' like patents have emerged as a result of the devaluation and hence the invisibility of indigenous systems of knowledge and the lack of protection for these systems. This devaluation is linked to the imposition of the reductionist methods of Western science to the non-reductionist approaches of indigenous knowledge systems. Further since Western-style IPRs systems are biased towards Western knowledge systems which reduce biodiversity to its chemical or genetic structures, the indigenous systems get no protection, but piracy of these systems is protected.

In the absence of a protection system for biodiversity and indigenous knowledge systems, and with the universalisation of Western-style IPRs regimes, such intellectual and biological piracy will grow.

-Third World Network feature

Vandana Shiva, a scientist and activist, is a contributing editor for the Third World Resurgence.