

Old Story, New Threat: Fracking and the global land grab

Fracking Research Team

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In recent years, land and water grabbing— the capturing of control of large areas of land and other associated resources like water and underground materials *and most significantly of the power* to decide on their use¹ — has gained additional momentum. As vast tracts of land and water are converted into industrial food and non-food production and used for extracting mineral resources, their quality is being degraded en masse. Today a new type of land and water grab is underway, this time from unconventional gas extraction that puts communities at great risk especially of serious water diversion, depletion, and contamination.

This new threat is called ‘fracking’, the common term for hydraulic fracturing, a relatively new method for extracting unconventional gas. This trend, besides impeding the full advance of cleaner and sustainable energy solutions, is expanding corporate driven and profit-led control over natural resources. Fracking is increasingly being pushed as a key solution on national energy security agendas. This latest attempt (after agrofuels) to postpone ‘peak oil’ is likewise accompanied by a reckless corporate pursuit of profits through ever-more environmentally and socially harmful techniques.

This paper explains what is fracking, why and where it is happening today, who is promoting it and how; providing a map of the global boom of fracking, its web of actors as well as the state of popular resistance. Promoted as a more sustainable energy source than other fossil fuels, fracking is spreading worldwide through a state-capital alliance that is capturing control of huge land and water resources at the expense of ordinary people. Fracking is an expression of the water and land grabbing agenda already underpinning expanding corporate takeover of natural resources. In addition to further intensifying and spreading fossil fuel extraction-related environmental destruction, fracking is breathing new life into the corporate oil industry, which is already a serious impediment to democratic control of resources and resource management and a key actor behind accelerating climate change. For all these reasons, fracking must be stopped.

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What is “fracking”?

‘Fracking’ is the short-hand expression for ‘hydraulic fracturing’ or ‘hydrofracking’, a newly applied and fast spreading technology to extract unconventional natural gas trapped below shale and coal bed rock formations. It consists of a multi-stage process of drilling deep below the surface of the earth, blasting deep rock formations and creating fissures to release natural gas trapped there, and then bringing these deposits up to the Earth’s surface through the injection of water into the drilling well.

A typical unconventional gas frac involves drilling down three to six kilometres into the earth, beneath underground fresh water sources. When the shale or coal bed geological formations are reached, the drilling then proceeds horizontally for up to two kilometres in order to capture more gas. This horizontal borehole is filled with small packages of ball-bearing-like shrapnel and light explosives. The packages are detonated, and the shrapnel pierces the borehole opening up small perforations in the rock. A series of fractures, between 10 to 20, are created at set intervals about every 100 meters along the horizontal borehole. Furthermore, each drilling site, or pad, can host several horizontal wells – known as multi-well pads.

Then, a high-pressure injection of frac fluid is pumped into the borehole, a cocktail mix of one to eight million gallons of water, sand, and toxic chemicals that further fractures the rock formations and allows the gas embedded in it to rise under its own pressure and escape. Besides these chemicals there are other particles of solid components such as fibers, etc. that help keep the rock fractures open.² This is “Fracking”.

The fracking industry portrays the practice as safe after having undergone decades of development. This is a very partial truth, at best. Although some of the technical processes and technological components involved in fracking have been developed and tested since the late 1940s, the combination of directional or horizontal drilling, high frac fluid volumes, slickwater, and multi-well pads—into a whole encompassing procedure known as ‘hydraulic fracturing’—is less than a decade old.

Up until the late 1990s, the majority of gas production came from conventional reservoirs—which are pressurised pools of free-flowing gas trapped beneath porous limestone or sandstone rock⁵. While conventional gas extraction required a vertical well and less than a hundred thousand gallons of frac fluid, unconventional gas development needs horizontal drilling in order to get longer exposure to pocket of gas which are dispersed in the thin layers of shale and coal bed formations. Much higher volumes of frac fluid are also needed to open up the fractures and joints where the gas is stored as it does not flow easily through the rock. Fracking, in this form, was first undertaken in the Barnett Shale of east Texas, US in 2002. Fracking is hence a relatively recent technology, not as tried and tested as the industry would like us to believe, with growing evidence of hazardous impacts.

Why is unconventional gas being promoted now?

Rising oil prices, concerns about ‘peak oil’, and growing public awareness of environmental depletion have made diversification of energy sources in a ‘sustainable’ manner an urgent matter for governments and corporations. This diversification

BOX 1 UNCONVENTIONAL NATURAL GAS IN A NUTSHELL

Unconventional gas refers to methane (CH₄) gas deposits that until now have been either technically unrecoverable or economically unviable. It is typically found trapped within hard shale rock and coal bed formations. Given the tight or low permeability of these geological formations—which limits the flow of gas—the rock must be fractured to allow conduits for gas to migrate to the production well bore. This requires the use of new technologies, in combination: horizontal drilling, in multi-well pads, frac fluid relying on slickwater (lubricating water). Since gas sources are more diffuse and difficult to extract in these rock formations, the scale of the industrial operation required is much larger—more invasive and involving a larger environmental footprint—than for conventional production.² The natural gas extracted through the fracking process provides key inputs for the petrochemical industry and underpins the production of nitrogen-based fertilizers, which are responsible for the so-called “Green Revolution” in agriculture. It is also for industrial use, residential and commercial heating applications, and electricity generation.³

BOX 2 DIFFERENCE BETWEEN CONVENTIONAL AND UNCONVENTIONAL GAS DEVELOPMENT

From Conventional Natural Gas...

Porous limestone and sandstone
Vertical drilling
Less than a 100 thousand gallons of frac fluid



...to Unconventional Natural Gas

Hard rock shale or coal bed formation
Horizontal drilling and multi-stage fracking
1 to 8 millions of gallons of frac fluid

is all the more important given corporations' constant search for new avenues for profit, particularly since the 2008 global crisis. In this context, unconventional gas production has become the new *El-Dorado* for a faltering globalised economy whose engines of cheap oil and easy profit accumulation are facing serious challenges.

Fracking has also been hailed as a new panacea for countries lagging economically. Advocates of fracking promise increased jobs or government revenues. Moreover, unconventional gas has emerged in parallel to the fast spread of the bio-economy, deepening the extraction and capitalisation of natural resources such as agrofuels —soybean, African palm oil, sugarcane, corn, and *Jatropha*— which have failed to live up to their claims to be clean and efficient alternative energy sources.⁶

Industry claims that unconventional natural gas is a much cleaner energy source than any other fossil fuel. This is in part due to a perception that natural gas has a lower greenhouse gas (GHG) footprint than coal and oil. Unconventional gas is promoted as a “bridge fuel” or “transition fuel” from high-carbon sources of energy like coal for electricity and

oil for vehicular transport, to an energy future based on renewables.

At the global level, fracking is promoted as an “exit” strategy from the energy crisis and a potential geopolitical “game changer” for some countries. With reserves alleged to provide up to “a century” of supply, some West European countries could gain independence from Russian gas; Argentina could reverse its fortunes and revitalise its economy by exploiting its vast gas endowments; and North America, China and Australia could become prime players in the unconventional gas market.

Where is Fracking happening?

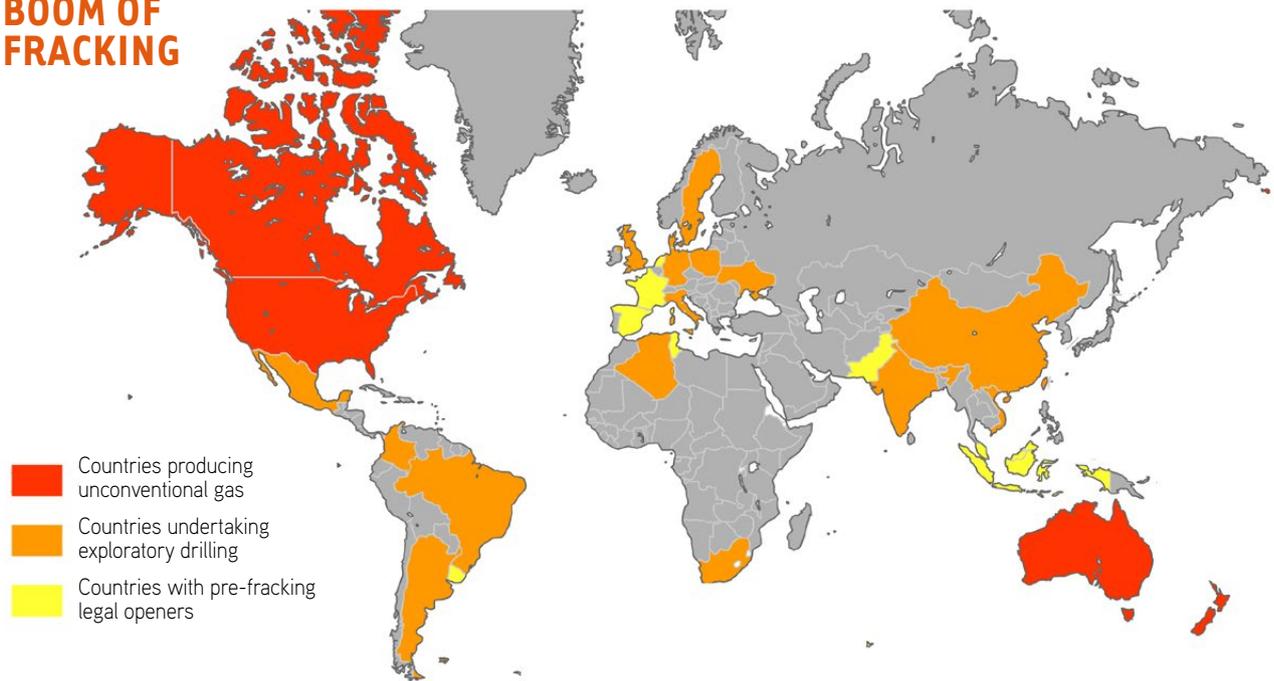
Fracking for unconventional gas is spreading rapidly through the world, promoted with the same discourse of energy self-sufficiency, economic growth and development, and environmental benefits. Although the phenomenon started in North America, since the 2000s it has become a worldwide practice. In addition to the United States, Canada, Australia, and New Zealand have all started industrial production of

BOX 3 POLAND: THE CONVERGENCE OF GRABBING

In Europe, Poland is currently the country most actively involved in shale gas leasing and exploration, prioritised by the government in the name of energy security. As of 2011, around 100 licenses have been issued to international and state oil and gas companies for shale gas exploration and production, mainly targeting three rich shale basins: the Baltic in the North, the Lublin in the South and the Podlasie in the East. Polish Prime Minister Donald Tusk has called unconventional gas the country's “great chance” to reduce Poland's high dependence on Russian gas. “After years of dependence on our large neighbor (Russia), today we can say that my generation will see the day when we will be independent in the area of natural gas and we will be setting terms”⁷ Russia's largest gas extractor, Gazprom, supplies nearly two-thirds of Poland's annual gas consumption of 496 Bcf.⁸ The Polish prime minister also insists that everyone can rest “assured that well conducted exploration and production would not pose a danger to the environment.”⁹

Poland is also the country under the most obvious fracking-induced threat of water and land grabbing. First of all, companies do not pay for water, as it is included in the land concession, not even in areas that are exposed to water shortages, as in the South. Second, Poland's legal framework enables companies to buy the land for gas extraction even if the actual owner does not want to sell it. Shale gas extraction has been specifically included on the official government list that allows for dispossession of farmers or real estate owners.¹⁰ Finally, during the year 2011, when most licenses for exploration were granted, no preliminary environmental assessment was required from the companies. Due to this, companies cannot be held accountable for the state in which they return any leased land. In January 2011, the Warsaw Appeals Prosecutor's Office announced that seven people, including government officials, have been charged with corruption during the granting of licenses for shale gas exploration.¹¹ This illustrates the mechanics of a state-capital alliance that lies behind many global examples of control grabbing.

THE GLOBAL BOOM OF FRACKING



unconventional natural gas. The United States produced 21,577 billion cubic feet (Bcf) in 2010, a level not achieved since a period of high natural gas production between 1970s and 1974—and the Energy Information Administration (EIA) estimates that the country possesses 2,552 trillion cubic feet (Tcf) of potential natural gas resources, enough to supply the US for 110 years (US House of Representatives 2011: 2).

A much larger group of countries are undertaking unconventional gas explorations, which includes early evaluation drilling, pilot project drilling, and pilot production testing. These countries are: Taiwan, Vietnam, India, China, Germany, Poland Sweden, Denmark, UK, The Netherlands, Ukraine, Italy, South Africa, Algeria, Colombia, Brazil, Argentina, and Mexico. Poland has already granted around 100 licenses to international and state oil and gas companies for shale gas exploration (see Box 3). In Argentina the government has instituted a ‘Gas Plus’ program that entitles companies to sell natural gas from unconventional fields at higher prices, and foresees the drilling of 1,000 wells by 2013.¹³

Another group of countries are just beginning to establish pre-fracking legislative frameworks acting as legal openers (or closers in case of bans and moratoriums), and setting up the mechanisms to enable the granting of licenses for exploration. The governments of Indonesia, Pakistan, Malaysia, China, France (despite there being a ban on fracking in place), Spain, Tunisia, and Uruguay have not yet given the green light to exploratory drilling. However, they are enacting policies that will facilitate the entrance of fracking into their territories.

Who is promoting it and how?

Behind the scenes in the worldwide scramble for unconventional gas exploration and extraction are a wide range of public and private transnational, national and institutional actors. Leading the pack are the usual transnational companies, which can be divided into three categories. First, there are the technology suppliers such as Halliburton, Schlumberger, Baker Hughes, GasFrac Energy Services, Frac Tech services,

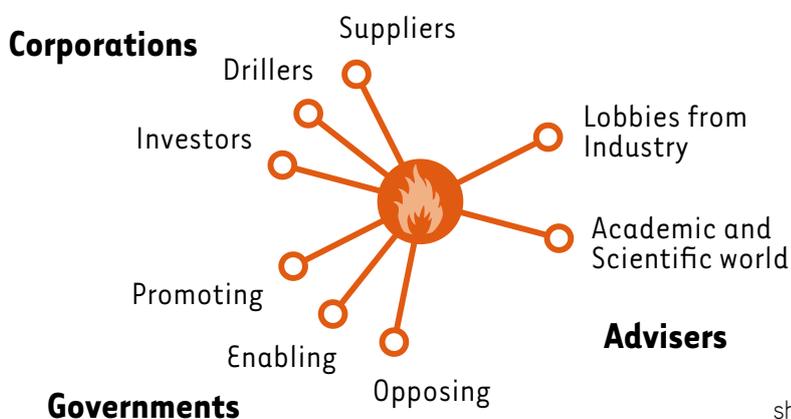
BOX 4 TROUBLED WATERS IN VIETNAM

According to the *Oil and Gas Journal*, Vietnam has 24.7 Tcf of proven natural gas reserves as of January 2012. As a result of Vietnam’s aggressive policy to attract investment and its enthusiastic issuance of exploration contracts for its offshore fields, a lot of foreign companies have flooded in, including major players such as Exxon Mobil, BP, Chevron, Gazprom and Total. Neither Vietnam nor its neighbors currently possess the technology needed to successfully extract oil and gas from these depths, and so are reliant on these corporations.¹² Vietnam’s offshore projects are located in the South China Sea, a highly contentious and politically volatile region between China, Malaysia, Brunei and the Philippines, which makes effective public monitoring of the extractive activity there very difficult.

BOX 6 CHINA'S UNCONVENTIONAL REVOLUTION

China is one of the most enthusiastic Asian supporters of unconventional gas, seeing its development as “a ‘revolution’ to increase domestic gas supply, improve the energy mixture and protect energy security” (Jiang Xinmin, Deputy Director of the Energy Research Institute, July 2012).¹⁴ Although, China’s amount of gas reserves is still undefined, experts agree that it could be one of the largest in the world and 50 percent greater than US reserves. According to a recent report by the Chinese Ministry of Land and Resources, China has around 4, 8000 Tcf of onshore shale gas reserves, which lie mainly in the Sichuan and Tarim Basins in the southern and western regions.¹⁵ Although, studies have already indicated a myriad of challenges gas exploration might face—highlighting the country’s geological complexities, water shortages, insufficient pipeline infrastructure, and the state control over natural gas prices¹⁶—China is determined to support the sector’s development. In its five-year shale gas development plan to 2015, the Chinese government has set a target for the industry to produce 229 Bcf of shale gas a year and by 2020, the nation’s goal is for shale gas to provide 6 percent of its energy needs.¹⁷ To achieve these goals, China is encouraging domestic producers to form partnerships with foreign oil and gas companies. On March 2012, Shell signed China’s first shale gas production sharing contract with China National Petroleum Corporation (CNPC) to produce in the Fushun-Yongchuan block in the Sichuan Basin, covering 3,500 square kilometers. ExxonMobil, BP, Chevron, and Total also have embarked on shale gas partnerships in China.¹⁸

BOX 5 THE FRACKING WEB



etc. which own the technical know-how but do not necessarily engage in the fracking process itself. This operation is undertaken by the drillers, a myriad of gas companies whose leading players are global corporations such as Exxon Mobil, Chesapeake, Chevron, Apache, Encana, Shell, etc. Finally, French Total, Italian ENI and Spanish Repsol among others embody the investors, companies involved in many countries mostly financing projects and always in joint venture with drillers. Even though the unconventional gas field involves big players or industry groups, each fracking site usually involves at least two or three companies, often mixing national ones with foreign players, including in the United States and Australia.

These corporate actors are intimately bound with governmental bodies. Besides the issuing of licenses and permits, governments are responsible for setting the energy policy direction that supports fracking and setting in place the legal gate openers that facilitates exploration and production. The government role varies from enthusiastic promoters of fracking (Argentina, Poland, China, the US), to enablers (Australia, New Zealand) or governments who actually oppose development of fracking (Quebec, Bulgaria, and France). The government as a public sphere is, as ever, a contested arena where politics is played out differently according to each case.

At the global level, the United States is also playing a crucial role in promoting unconventional gas exploitation as a key to economic development. The Global Shale Gas Initiative, launched by the US Department of State in 2010, is actively making the case for worldwide legislation that favours fracking. In the same vein, the US Department of Energy issued in 2011 one of the most extensive publicly accessible gas shale profiles, mapping the state of the resource worldwide.¹⁹ Furthermore, under the umbrella of international cooperation for development, the US is aggressively pressuring governments to open their door to unconventional gas exploitation as Indonesia can attest to (see Box 7).

In addition to natural gas producers’ lobbies, such as the Americas Natural Gas Alliance and American Petroleum Institute, parts of the academic and scientific world have also played a significant role in framing the unconventional gas agenda. For example, the US Department of Energy’s influential report “World Shale Gas Resources: An Initial Assessment of 14 Regions Outside the United States” was prepared by the Advances Resources International Inc., an external group – but not independent from the industry’s standpoint.²³ The green light for fracking comes from this web of opaque connections and blurred interests between those three actors.

Only the strongest of citizens’ campaigning has succeeded in blocking fracking, as illustrated in Box 10 for the case of France.

But even where this has occurred, there is no guarantee of long-term success, as seen in the case of South Africa, where recently, in September 2012, the government yielded to strong industry pressure and the lure of potential profits to lift an existing ban on fracking. This has set the stage for a new round of public protest and citizen action.

BOX 7 INDONESIA SEDUCED BY MADE-IN-THE-US FRACKING PRACTICES

According to the Bandung Technology University (ITB), Indonesia holds 1,000 Tcf of shale gas reserves²⁰ and around 453.3 Tcf of Coalbed Methane (CBM) potential. Shale and CBM gas are found in up to 11 hydrocarbon basins in different locations throughout Sumatra, Java, Kalimantan and Sulawesi. Although, Indonesia has not yet engaged in fracking activities, its government is opening the door for unconventional gas exploitation following technical and political advice from the US government. The US-Indonesia Energy Investment Roundtable (February 2012), in particular, made a strong case in support of unconventional gas exploration in Indonesia:

Indonesia stands poised to benefit from a global market that increasingly looks to natural gas for many uses, including as the bridge-fuel technology to a lower carbon energy future. Through engagement with our private sector, through dialogues such as today's, and programs such as the Unconventional Gas Technical Engagement Program, we look forward to advancing our strategic partnership for energy security into a long and fruitful future (Deputy Assistant Secretary, Bureau of Economic, Energy and Business Affairs in February 2012)²¹.

To increase CBM development, the Indonesian government has passed measures to attract new investors whilst encouraging existing contractors to accelerate production.²² Companies, such as Medco Energy International (MedcoEnergy), Korea Gas Corporation, MEO Australia Ltd., Dart Energy, and VICO Indonesia (the national oil and gas company), have started bidding on land concessions.

BOX 8 FRACKING TO AFFECT ONE-FIFTH OF SOUTH AFRICAN TERRITORY

According to researcher David Fig, in South Africa, "a number of companies have lined up to explore shale gas and have been granted permission by the regulator, the Petroleum Agency of South Africa, to undertake preliminary technical studies in different parts of the country. Four bids cover a total area of 228,000 km², which amounts to almost one-fifth of the territorial surface of South Africa. Three bids are for parts of the Karoo Region— a desert region of South Africa— while the fourth covers an enormous area including most of the Free State, parts of the Northern and Eastern Cape, and a strip of KwaZulu-Natal adjacent to the Drakensberg"

APPLICANTS FOR EXCLUSIVE EXPLORATION RIGHTS FOR SHALE GAS IN SOUTH AFRICA, 2011

Company Nationality Area of exploration Surface area granted (km²)

Royal Dutch Shell	UK/Netherlands	Karoo (W & E Cape)	90,000
Bundu	Australia	Karoo (E Cape)	3,100
Falcon	US	Karoo (E Cape)	30,350
Sasol – Statoil – Chesapeake*	SA – Norway – US	Free State, E Cape and KZN	105,000

*Sasol and associates announced in late November 2011 that they would no longer pursue their right to explore, leaving their territory open to another applicant. Sources: Petroleum Agency of South Africa, www.pasa.co.za (downloaded 11 October 2011); Falcon, www.falconoilandgas.com (downloaded 11 January 2012, equivalent to 7.5 million acres); Challenger, www.challengerenergy.com.au/projects/south-africa-project/cranemere (downloaded 11 October 2010).

On 7 September 2012 the government of South Africa lifted its moratorium on fracking that had been in place for 18 months. The green light was given based on the recommendations of a ministerial task team whose membership included representatives of the Petroleum Agency, Mineral Resources, Energy, Trade & Industry, Science & Technology, Economic Development, while excluding representatives from Agriculture, Environment, Health, Tourism, and water ministries.

See: D. Fig, "Fracking and the Democratic Deficit in South Africa", <http://www.tni.org/paper/fracking-and-democratic-deficit-south-africa>, July 2012).

BOX 9 A FRACKING-INDUCED SEISMIC EVENT: THE CASE OF LANCASHIRE IN THE UK

In April and May 2011, the seaside community of Blackpool, in Lancashire county of Northwest England, witnessed two earthquakes with magnitudes of 2.3 and 1.5 on the Richter scale correspondingly³⁴. The area, which sits on England's most important shale gas basin, had become the operating site for unconventional gas exploration by Cuadrilla Resources Ltd, a UK company. Studies commissioned by the company itself to examine the possible relationship between hydraulic fracturing at the Preese Hall well, near Blackpool, and the earthquakes concluded that in fact, the quakes were caused by direct fluid injection during the fracking process.³⁵ A panel of independent experts appointed by the Department of Energy and Climate Change (DECC) confirmed the causality and stressed the probability of further quakes, while allowing the corporation to resume activities.³⁶ Although, a series of protests have taken place ever since the earthquakes—of community members demanding a ban, or at least a moratorium on fracking for the risks it poses to nature and human well being—the company has the green light to frack. Meanwhile concerned citizens³⁷ are being silenced and criminalised.³⁸ Last September 2012, Lancashire's planning chief, denounced Cuadrilla for breaching fracking conditions.³⁹ The company was found to be drilling beyond an agreed time limit and beyond a cut-off date in a protected region for wintering birds. Despite the controversy and the risks, the British government remains loyal to plans to increase shale gas production.

Why should we be concerned?

The highly and enthusiastically promoted benefits of unconventional natural gas extraction, have managed to conceal the higher stakes: real concerns about drinking water contamination, water depletion, carcinogens threatening public health, air pollution, and instances of fracking-induced seismic activity.

Industries repeatedly claim that there is no risk posed by fracking to aquifers or underground water sources. Statements like this made by a Shell executive are routine: *You have the risk from the chemicals, and the risk of that happening as far as I know is actually very close to zero or zero because it has not been seen in the world yet.*²⁴ This self-serving myth is sustained on two ideas: one, that shale and coal bed rock formations are too deep below water sources for water to get contaminated, and two, that the cement casing technology is too good for it to ever crack or corrode.²⁵ The bad news, as research has demonstrated, are that cement-casing failures may allow methane and other hazardous chemicals to migrate to the water source, hence to somebody's water well.²⁶

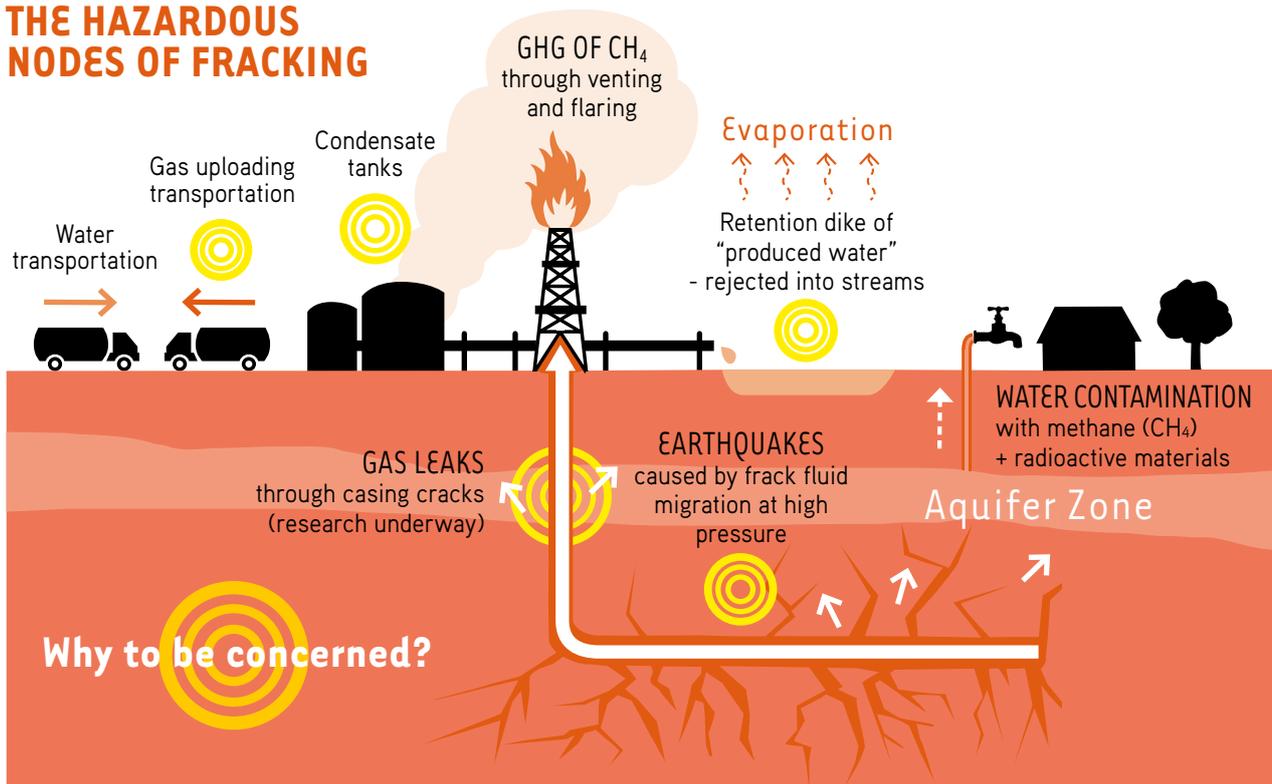
A study undertaken by the US House of Representatives in 2011²⁷ noted that out of 2,500 fracking inputs, 650 are chemicals, several of which are carcinogens and hazardous air pollutants. BTEX compounds such as benzene, toluene, xylene, and ethylbenzene, notorious for having harmful effects on the people's central nervous system, appeared in 60 of the hydraulic fracturing products used between 2005 and

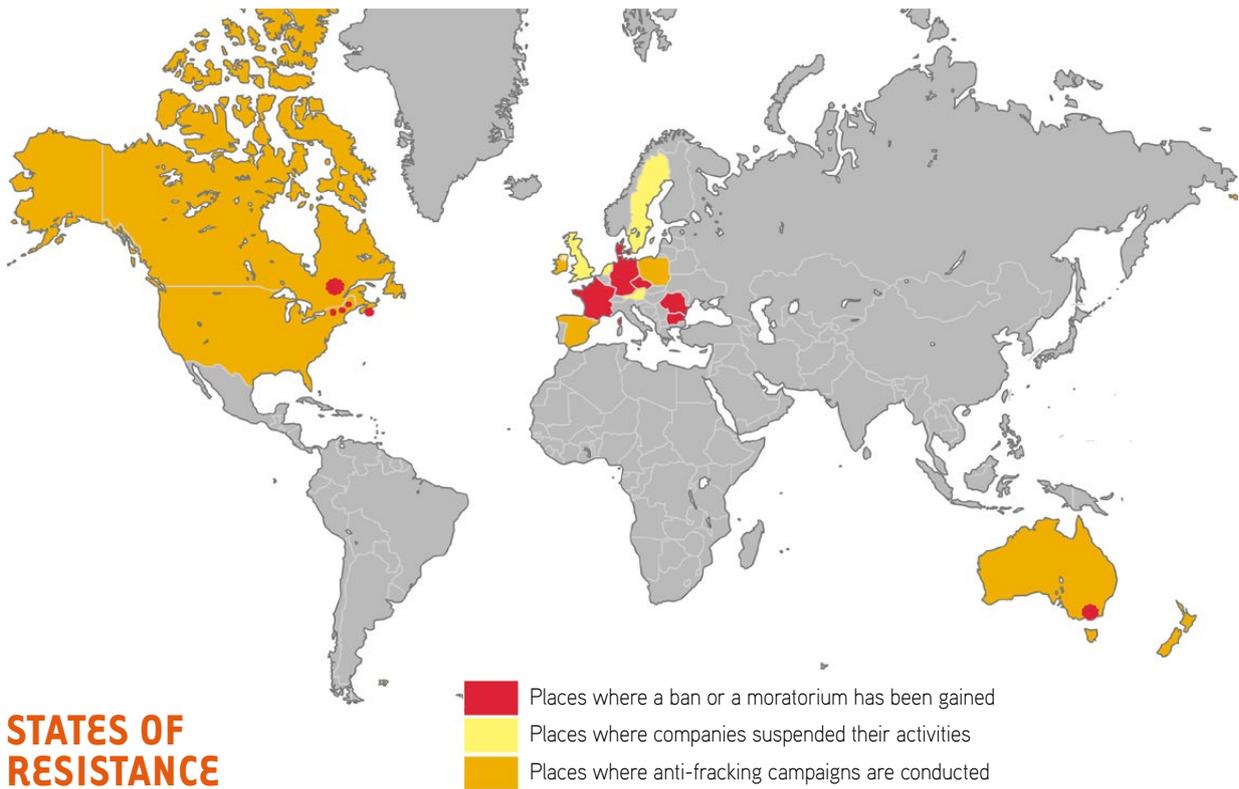
2009.²⁸ The major concern here is that these chemicals can leak into both ground and underground water sources during the fracking process. Water contamination can happen in the form of accidental spills during truck transportation, leakages through cracked or corroded cementing casing of the wells, or as fugitive gas through the rock fractures themselves.

Wastewater, also known as 'produced water', is also a major risk in fracking. Most of the chemical-laced frac fluid injected down the well will stay below ground, but for every million gallons between 20 and 40% will be regurgitated back to the surface, bringing with it: chemicals, traces of oil-laced drilling mud, and all the other toxic substances previously trapped in the rock: iron, chromium, salt, and radioactive materials such as Radium 226.²⁹ Most of the wastewater is produced in the first few months of production and, as it is toxic, must be disposed through recycling (not commonly applied), through re-injection, or via surface treatment through processing at wastewater facilities.³⁰ Today, most water treatment facilities are not designed to handle fracking wastewater. Hence, produced water is often left in large ponds to eventually evaporate. In many cases, the contaminated wastewater ends up in rivers and water streams.³¹

Industry claims that unconventional natural gas is a much cleaner energy source than any other carbon intensive fossil fuel. However, ongoing research has begun to dispel these myths. It has found that over the full life cycle of unconventional gas production—including direct emissions of CO₂ from combustion of the natural gas, indirect emissions from fossil

THE HAZARDOUS NODES OF FRACKING





fuels used for land clearing, extraction and transportation of the gas, and methane emissions at the drilling pads—greenhouse gas (GHG) emissions are higher compared to conventional gas, coal or oil.³²

Last but not least, fracking can cause earthquakes. As in the case of Lancashire in the UK (see Box 9), similar episodes have been experienced in Oklahoma and Arkansas. According to a report by the National Research Council, there is a higher risk of man-made seismic events when wastewater from fracking process is injected back into the ground.³³

Why is fracking a dangerous diversion in the search for a just energy solution for all?

Beyond the immediate environmental concerns, fracking is ultimately a false solution for securing sustainable energy security or sovereignty. Praised as an “exit” strategy from energy insecurity and the crisis in economic growth, unconventional gas exploitation is merely the normal and latest expression of the very process it alleges to cure. It continues the plunder of natural resources carried through the corporate-government nexus bringing huge profits to a small number of people. It acts as an impediment to developing real alternative consumer patterns and renewable technologies. Fracking ends up as a short-term endorphin fix preventing necessary changes to our model of economic development based on uneven patterns of consumption and cheap supplies where some over-consume energy while other do not have sufficient access.

What is the state of resistance to fracking worldwide?

As fracking spreads across the world, attempts of a more unified global resistance are emerging. Last September 22 was declared the Global Frackdown Day⁴⁰ where more than 100 events took place all around the world to protest against fracking. The day showed that citizens are awakening to the threat of this new corporate driven “golden age” of gas.

Due to strong civil society pressure, some governments have already agreed to ban or impose a moratorium on fracking (Bulgaria, Czech Republic, Denmark, France, Germany, Romania, Australian state of Victoria, Canadian provinces of Quebec and Nova Scotia, US states of New York, Pennsylvania and Vermont). In Austria and Sweden this pressure led the companies involved to withdraw while in England and Netherlands fracking has been suspended.⁴¹ And campaigns are undergoing in Poland, Spain, Ireland, US, Canada, Australia and New Zealand. Despite all the challenges, resistance seems to be growing.

In New Zealand, several groups have been campaigning since 2011 to stop the fracking approved by the government on four million hectares of New Zealand land.⁴² This has advanced so far due to gaps in the regulatory framework,⁴³ and has already led to cases of water contamination⁴⁴. Anti-fracking activists have framed the campaign in terms of climate justice and their efforts have influenced local authorities of fracking-affected areas to take a strong stand against it.⁴⁵ Since February

BOX 10 **BEHIND THE FRENCH BAN: SUCCESSSES AND CHALLENGES**

Only the strongest of citizens' campaigning has succeeded in blocking fracking. The French campaign that led to the first ban in Europe started in late 2010.⁶⁰

Following the discovery in March that the government had delivered without any public consultation permits for fracking on three sites, and with news of 64 other licenses pending, local citizens formed groups in affected areas. This quickly led to the mushrooming of informal spontaneous and uncoordinated town-hall meetings in villages gathering unprecedented numbers of people. In early 2011, a massive citizens' movement began to form, with a landmark public demonstration in February and bringing together strong local networks that succeeded quickly in compelling local authorities to take an anti-fracking stance. The national government, unprepared for such an uproar was caught short; initially it issued a moratorium but after further pressure a law banning fracking was approved by Parliament in July 2011.

Two factors have been decisive to ensure this success. First, politically, the anti-fracking movement effectively combined spontaneous and passionate local protests with challenges at a national level on legal grounds pinpointing irregularities based on French land and water legislation. Second the movement benefited from a strong sense of locality and place in rural areas which framed the campaign in terms of democracy and sovereignty over land.

Industry has not surrendered however after the ban and has started to use the law's loopholes, asking for example for permits for "stimulating bedrock" that exploit the fact that the law does not properly define fracking. They have also invested in a far-reaching public relations campaign that promotes fracking with the language of energy independence and job opportunities.

In this new phase of struggle, facing a long-term information war with the unconventional gas industry, the anti-fracking campaign faces several challenges, besides lack of financial means, political power and absence of spokespeople. First, the new proposed sites for fracking are in more urban Northern regions of France where people are less locally rooted and attached to their land. There are also divisions emerging as the movement has broadened around issues such as alternative energy models, with different stances taken, on nuclear power for instance.

2012, seven regional and district councils have called, so far unsuccessfully, on the national government to implement at least a moratorium.⁴⁶

In the US, grassroots organizations across 20 fracking-implicated states have been opposing drilling for unconventional gas in their territories. Concerned citizens, academics⁴⁷, researchers, journalists⁴⁸, artists⁴⁹, and even council members⁵⁰ have questioned the profit driven nature of the national energy policy and have rejected the exemption gas industry has from the Clean Water and Air acts.⁵¹ Campaigns in New York, Vermont and Pennsylvania have so far succeeded in winning a moratorium.

Although, fracking is not yet underway in Spain, licenses have already been given. This year alone, the Canadian corporation BNK Petroleum obtained a total of 1600 km² for exploration of unconventional gas shale gas in Arquetu (Cantabria), Sedano (Burgos), and Urraca (Burgos-Alava).⁵² Different groups around Cantabria, Castilla y León, and País Vasco have joined together to oppose production. Last October 2012, an unprecedented mobilisation against fracking took place in Vitoria, Alaba (País Vasco). United under a common message, "ez hemen, ez inon" (not here, not anywhere), around thirteen thousand citizens took to the streets to protest against fracking.⁵³ 53 out of 63 towns from Vitoria have already declared themselves fracking-free zones.

In January 2012, after continuous protests by anti-fracking groups, the Bulgarian parliament imposed a ban on the exploration of shale oil and gas in the country, in addition

to withdrawing a license granted to Chevron Corporation.⁵⁴ Citizens' main concerns were that fracking will pollute the water and soil in the nation's most fertile farm region of Dobrudja.⁵⁵ Unfortunately, and only five months later, the government eased the ban and already plans to grant concessions to start production of gas in northern Bulgaria.⁵⁶

Meanwhile in Quebec, the provincial government has issued a moratorium on shale gas fracking.⁵⁷ However a ban will not be issued before the Committee on Strategic Environmental Assessment's final report, scheduled for late 2013.⁵⁸

This fragile situation is echoed in other cases, showing, first, that a legal framework is not sufficient to prevent future u-turns in government policy and second, that civil society monitoring and constant mobilisation is essential.

Fracking is being debated at the European Parliament closely monitored by a campaign led by dozens of groups from 17 member countries throughout Europe. Together they are doing their best to provide a popular counter-weight to the strong lobbying efforts by the shale gas industry. In September 2012, a French Green member of the European Parliament drafted and managed to bring to the plenary session an amendment calling for a moratorium on the use of fracking that received one third of votes in its favour. In November 2012, the Parliament backed in a vote the conclusion of two reports prepared by the Parliament's committees on Industry and Energy and Environment and Public Health that recognised negative impacts of shale gas development. The resolution called upon the European Commission to strengthen current

environmental legislation related to shale gas. Other EU institutions are not required to act on their demand, but the call indicates support for regulation in case legislation regulating the shale gas industry arrives at the European Parliament. Although the call for a stronger regulation can be decried

as legitimising fracking instead of engaging on the path of a ban;⁵⁹ complying with higher environmental standards has a cost that can be prohibitive for the energy industry and therefore be a serious brake for the development of fracking and the accompanying land and water grabs.

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Water Defense: <http://www.waterdefense.org/>

Propublica.org: <http://www.propublica.org/series/fracking>

Food and Water Watch: <http://documents.foodandwaterwatch.org/water/fracking/>

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AGRARIAN JUSTICE PROGRAMME

In recent years, various actors, from big foreign and domestic corporate business and finance to governments, have initiated a large-scale worldwide enclosure of agricultural lands, mostly in the Global South but also elsewhere. This is done for large-scale industrial and industrial agriculture ventures and often packaged as large-scale investment for rural development. But rather than being investment that is going to benefit the majority of rural people, especially the poorest and most vulnerable, this process constitutes a new wave of land and water 'grabbing'. It is a global phenomenon whereby the access, use and right to land and other closely associated natural resources is being taken over - on a large-scale and/or by large-scale capital - resulting in a cascade of negative impacts on rural livelihoods and ecologies, human rights, and local food security.

In this context TNI aims to contribute to strengthening the campaigns by agrarian social movements in order to make them more effective in resisting land and water grabbing; and in developing and advancing alternatives such as land/food/water sovereignty and agro-ecological farming systems.

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