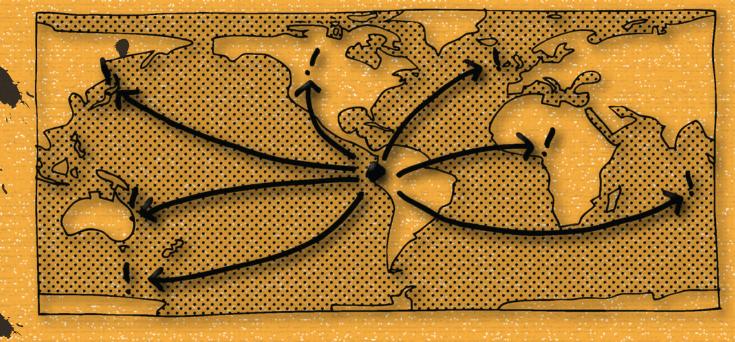
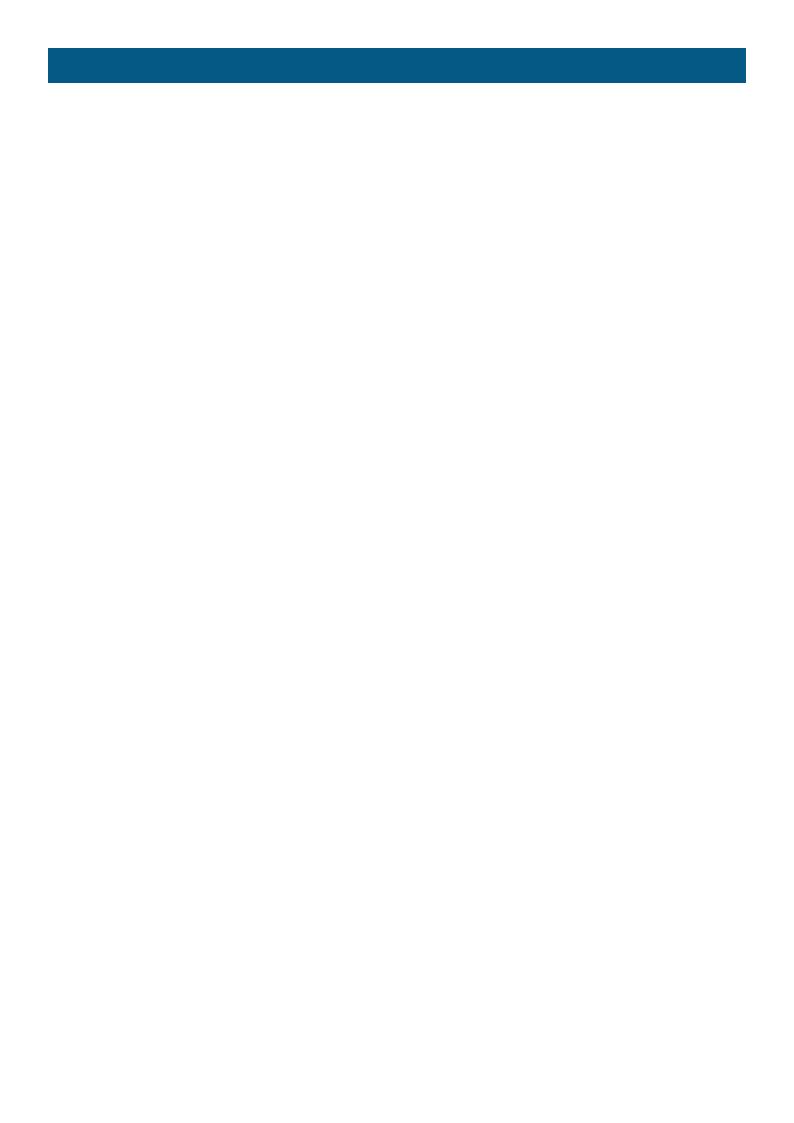
OILWATCH

KEEPOIL UNDERGROUND

the only way to fight climate change

from the last bit







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Publication supported by

IUCN National Committee of the Netherlands

Bali, 2007

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LEAVING CRUDE OIL UNDERGROUND

A new energy and development model that proposes leaving oil underground is here presented as the only sensible way to confront the today's challenges and oppose the emissions market scheme as a way to confront climate change.

It is an ecological model to replace the "eco-illogical" model, imposed under the free market paradigm of unlimited growth.

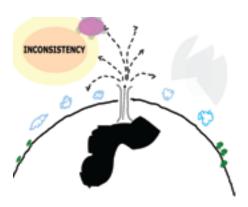
The proposal was presented by Ecuador in 2007, at a time when the race to extract oil from the most distant frontiers the most vulnerable and fragile areas of the planet - threatens us all, because it has caused an unprecedented climate crisis and conditions of extreme impoverishmenting for the majority of the world's developing economies.

It is a new energy model that opposes the decadent model of extracting and burning what nature has taken millions of years to produce.

It is an economic model that seeks not to live from the exportation of non-renewable natural richness because it causes a huge impact on nature.

It is a proposal that questions the perception of the dominant model of unlimited and unsustainable growth based on competition and market forces.

Several countries are interested in developing similar models or, at least, have the same objectives. All of them include



both sides of the common, but different, responsibilities. On the one side is the responsibility of the nations of the South of the planet to conserve their forests and guarantee conditions of survival of their local populations, and on the other is the responsibility of countries that contaminate the atmosphere and which need to avoid the extraction and consumption of more fossil fuels.

The proposal consists of:

- Not extracting the oil.
- Channelling resources from the symbolic sale of oil that will not be extracted.
- A capitalization fund, from which interest will provide permanent income.
- Develop a model of selfsufficiency (zero emissions, zero waste) with these funds for a food production and energy supply in a post oil era.

CONSISTENCY



Expected results are:

- Protection of ecosystems in those areas chosen to be the new frontiers of oil devastation.
- Protection of local and global climates.
- Respect for the rights of local populations.
- Putting to work a new post-oil energy model.

Four types of parties have been identified as potential donors:

- NGO and cooperation agencies.
- Individuals from Ecuador and around the planet.
- Governments.
- Industries.

There are different options under analysis to obtain the necessary funds to implement this proposal including:

- Tax deductible donations from income taxes in different countries.
- Direct donations through the internet.
- National campaigns seeking support.
- Donations from cooperation agencies.
- Government to government agreements to allocate amounts to the proposal or the cancellation of external debt.
- Philanthropic funds.

Esperanza Martínez Oilwatch

NEW FRONTIERS*

WHERE THIS PROPOSAL COULD BE APPLIED

Even though the planet is experiencing a climate crisis, the oil industry is expanding to new frontiers, with the majority of such frontiers being mature forests or very sensitive areas.

Currently the world's oil reserves are 800 billion barrels. If these reserves are burned, more than 320 billion tons of additional co₂ would be produced, reaching a critical point for the planet.

In order to expand these new frontiers public and private enterprises are applying diverse strategies. One characteristic of "de-globalization" that is increasingly apparent is the re-positioning of nation states over transnational corporations. In this process the permanent beneficiaries become the services companies, because they have an advantageous position with transnational corporations and companies owned by the state.

The expected impacts in this new scheme to exhaust oil reserves and then increase them with new exploration, involve opening new vulnerable zones - especially local ones. They also deepen the dependence of those countries whose economies depend on the extraction and exportation of oil.

Because climate change affects food production, it puts populations at risk, especially the coastal ones, and threatens water availability. These aspects should therefore be carefully conserved.

A sustainable model could reduce the vulnerability of climate change, increasing resilience capacity. However, climate change erodes the capacity to adapt to direct and indirect impacts. The burden of these impacts will fall upon the marginal populations, and further widen the gap between north and south, rich and poor.

Some basic criteria to support the proposal of keeping the oil underground, come from recognizing urgent issues such as:

- Maintaining and developing autonomous and self-sufficient models that: produce zero or close to zero emissions, recycling wastes and working at low levels of entropy, as is the case of the indigenous communities or traditional peoples that maintain a harmonious relationship with nature.
- Maintaining zones of mature forest, where the structure and functions of the forests contribute to maintaining a hydrologic equilibrium that in turn helps the planet to cool such as with the tropical forests.
- National economies that have politics favoring food sovereignty

and energy independence based on diverse low impact energy models.

- Fragile zones exposed to climate change, such as mangrove areas or island states.
- Arguments for avoiding new oil exploration frontiers

I. Climate Change

Climate change is now positioned not only on national and international agendas, but also in the everyday lives of people. It is no longer a threat or speculation, but has become a reality that demands concrete and immediate action. The two principal causes of global warming are the burning of fossil fuels and deforestation.

Deforestation of mangroves, for example, could be disastrous for the populations that live in the area because it renders the coasts even more vulnerable. Island forest conservation is one of the few protection guarantees. Forest conservation in general also protects local climates.



2. Destruction of

Biodiversity

The majority of the planet's biodiversity is located in the South.

Oil extraction causes inevitable destruction of biodiversity. However, maybe the most serious and direct impact of this activity are toxic water discharges into the environment as well as other polluting wastes. These substances are bio-accumulative and have a direct relationship with a number of illnesses.

3. Traditional Peoples

Local populations do not only conserve important biodiversity zones, but through agriculture they have increased it. They also retain information and technical knowledge that is priceless. For these populations the health of the ecosystem is indispensable.

For these populations that maintain profound relationships with nature, the conservation of their territory is the only way to guarantee their existence.

4. Non-Oil Dependent

Economies

Non-oil dependent economies have healthier conditions, but those that are dependent on oil quickly present symptoms of the "Dutch sickness", meaning that all the other productive activities decrease. Oil exploitation is the activity that causes the most environmental and social problems. Corruption, invasions and fraud are all part of the oil industry business.

Developing new and diverse energy sources is a necessity that cannot be postponed, as it will diversify the incomes of national economies that are dependent on the exportation of this non-renewable resource.

5. Protection of the Selfsufficient Model

There are communities and economies that maintain a self-sufficient scheme that guarantees their food sovereignty with access and control to the entire food cycle. These models have low entropy, so wastes, emissions and garbage production are less than in oil dependent models.

The oil economy promotes food and energy patterns based on this resource that is not only non-renewable but causes great impact during its extraction and consumption.

6. Destruction of Fresh Water Sources

Fresh water is a basic element for life and it is scarce. The survival of nature depends on its maintenance cycle. However, many oil activities destroy both surface and underground fresh water sources. A basic criterion to determine areas free of oil activities should be water protection.

* Esperanza Martínez, Oilwatch



GHAPTER 1

ECUADOR: YASUNI NATIONAL PARK*

A RACE FOR LIFE, FROM KYOTO TO QUITO

Ecuador is living an important moment of changes. On the one side, the Constitutional Assembly of full powers has been established and on the other side, the decision to leave oil underground in the biggest reserve in the country, the ITT project has been approved. The first constitutes a statement in favour of a change in the economic and political structure of the country and the second, considering that oil has been fundamental for the economy of the country, could mean an economical transformation and a change of paradigm in the country.

The proposal is to leave oil underground and request a 50% compensation of what the state would gain if it exploits the field. The procedure will consist in the emission of bonds for the oil that will remain "in situ" making a double compromise of never extracting that oil and protecting the Yasuni National Park.

The model questions the mechanisms currently promoted by Kyoto, because these mechanisms punish countries like Ecuador twice. First because the biophysical, social and economical impacts worsen when ecosystems are more intervened, and the effects are greater and less money is available to adapt to the changes.

Second, because a lot of the socalled solutions, the projects of environmental services and selling of drains, are causing problems at the local level because the owners are transferring their land rights.

Ecuador has subscribed international agreements of climate change, biodiversity conservation and protection of protected areas; in all of them it has compromised to expand its efforts for conservation.

Ecuador

and Biosphere of the UNESCO. If oil operations start in this area, the impacts will be un-

Reserve, inside the program: Man

avoidable: wastes, deforestation, spills, discharges of toxic waters



Yasuní

the environto ment, colonization, increase of violence, etc.

The

sub-

stances contained in the oil industry wastes are bioaccummulative and have a direct correlation with different sicknesses because they contain carcinogenic, teratogenic and mutagenic substances. The majority of the fresh water organisms do not tolerate the high levels of salinity of the formation waters. In addition, the deforestation of tropical areas causes droughts.

It is clear that Ecuador assumes this policy for its own interest, but it also recognizes the differentiated responsibilities of the actions to confront global warming. This is why it is legitimate to demand a compensation.

A complementary proposal to the one that has been mentioned is to create a permanent capitalization fund in order to avoid the expenditure of all the economic resources in the lifetime

Looking for funds to maintain oil underground, is a mechanism which doesn't mean selling the reserves, neither selling environmental services. It is a payment given as a way to compensate for what the state will not gain from implementing this environmental policy of global importance.

Ecuador chose this proposal for the Yasuni Park located in the Amazon Region, territory of the Huaorani nationality, and which is also a Biosphere World

of the project. The aim of this alternative is to produce 50% of the resources and provide a permanent income.

Whoever pays for maintaining the oil underground will receive a certificate from the government. An estimated price of \$5 has been calculated.

There are different ways to finance the proposal: through direct donations, the Internet, donations from cooperation agencies, agreements between governments or external debt cancellation.

But the proposal would be incomplete if we don't, first of all, look at the effects that it will have on the Ecuadorian society because it will question what has always been the axis of the economic policies and secondly, if we tie the use of the funds to activities directed towards the re-orientation of the economy and consolidate the national efforts to reach food sovereignty.

At the international level, this approach will allow to transform the international logic in relation to global warming. In Kyoto, the evasive and harmful actions such as environmental services schemes and emissions trading could not be avoided. From Quito, light of America, we motivate actions that will confront the cause of the problem, the reduction of the quantity of burned oil in the atmosphere.

The marginal cost of extraction of an oil barrel is between 2 and 7 USD according to British Petroleum

ARGUMENTS FOR THE PROPOSAL IN ECUADOR

. Contribute to stop climate change

rels of crude oil, equivalent to 440 million tons of carbon.

The oil activities to be stopped are located in the heart of the remaining tropical Amazon rainforest. This area produces the majority of the clouds, that by the Albedo effect reflect the solar radiation.

Avoid biodiversity destruction

According to a 2004 scientific report, Yasuni National Park protects the greatest biodiversity of the Planet. Yasuni also conserves one of the greatest portions of the Amazon wildlife identified as one of the 24 priority areas for wildlife in the world. Only one hectare of these forests has almost as many species of trees and bushes as have the United States and Canada together.

2. Protect fresh water

This area is a gigantic wetland, that holds one of the principal underground water reservoirs, the Tiyayacu formation.

Because of the characteristics of oil, a relation of 80-20 toxic water to oil is predicted. Usually the underground injection of this water is proposed, but this represents an underground water contamination risk.



4. Respect Huaorani peoples rights

The ITT Project as well as the block 31 are located in the territories of the Huaorani and people who live in voluntary isolation.

In this area there are groups like the Tagaeri, Taromenane and possibly Oñamenane that decided to avoid every contact with the exterior world and that have rejected all the attempts of contact or occupation of their territory. These people count with precautionary measures given by the Inter-American Commission of Human Rights since May 10th of 2006.

5. Start the way to a post oil economy

Ecuador has based its economy on oil; its dependency on oil reaches up to 60% of the GNP. The proposal is to change this model for one based on production and not exploitation or exportation of natural resources. In today's political situation we try to develop a different model that won't sacrifice nature and its inhabitants for the sake of the economy.

The resources generated by this compensation will be managed with a long term vision, in a capitalization account that will guarantee a permanent flow of money.

^{*} www.sosyasuni.org

TIMOR LESTE*

"The strategy was to survive". That was the answer that the Timor population gave to an Oilwatch delegation that travelled to this country a week after its independence. To be alive during the massacre organized and executed by the Indonesian president was their strategy. Even the current president of Timor Leste, Xamanna Gusmão had to "act as a magician to save his life, he used a hand trick when he was detained in 1992.

Timor Leste was constituted as an independent republic on may 20th 2002 but its birth came along with a big doubt: Was

it an advantage or a disadvantage to be over a huge oil deposit? Could sovereignty grow between the pressures of the multinational companies? Maybe today after the invasion of the USA to Irak these questions are easier to answer.

The small island has 32 thousand square kilometres and 19 thousand belong to Timor Leste. Everything in the island gives a testimony of the long war sustained since Soeharto, the dictator of Indonesia, invaded it in December of 1975. The invasion took place only 10 days after achieving its freedom from the Portuguese rule. With the carnation revolution Portugal renounced to its colonies and Oriental Timor started to dream with its sovereignty.

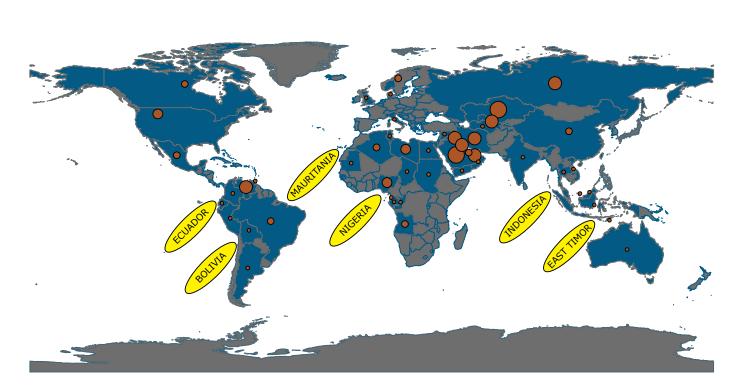
The army of Soeharto, who reached the power as the majority of the tyrant with the

support of the USA, assassinated half of the population of Timor. The intervention was made with the approval of Washington that feared the conversion of Timor to a socialist model as other ex Portuguese colonies did.

After Soeharto fall and with the usually late intervention of the United Nations, a referendum was called. In this referendum 78.5% of the electors voted for its independence. The results weren't higher because of the colonization programs that were impulsed by the government of Indonesia. After this, the killings, instigated by the government of Indonesia and with the usual impotence of the United Nations worsen. Timor Leste conquered its independence by being alive.

Nowadays, although they have reached its territorial

OIL RESERVES IN THE WORLD



sovereignty, Timor should confront serious difficulties and fight a new battle to conquer its patrimonial sovereignty.

The new country is born with degraded forest caused by the military actions. The Indonesian army deforested big extensions, even they defoliated the jungle to fight the guerrilla.

With its few coffee and sandal wood for exportation (that have been harvested since the Portuguese arrived) Timor has difficulties to structure proposals to achieve its food sovereignty.

Its energy sovereignty is even worse. Its energy sources besides wood are kerosene, gasoline and diesel imported from Indonesia. The majority of the population doesn't have access to these products.

But in the other side under the soil there are big reserves of gas and oil, not only off shore oil (3 regions) but there are also 2 areas of natural fields one of gas and another one of oil.

Timor Leste initiated its independent life in the middle of an economic crisis. Therefore, it depended completely on the international assistance, specially from the United Nations. Although as it is usual, the help is an auto-help and more than 80% of the funds invested in rehabilitation programs have been paid to foreign consultants.

The situation gets worse. On July 23rd - 2002 Timor became a new member of the Asiatic Development Bank, which tradition has been to invest in mega projects. Nowadays, this institution, as the IMF and the WB is promoting the reduction of poverty, support-

ing the liberalization processes and privatisation. The decisions inside the ADB, are taken as in the World Bank by votes and the weight of the vote is determined by the investment in the bank. This has allowed Japan to have 13.1 of the decisions compared to 0.3 of Timor. The JPDA (Joint Petroleum Development Area) counts with its big oil deposits.

The plans for Timor aren't to support its sovereignty, instead are to deprive its rights. Timor is making efforts to exert control over their oil reserves in a unequal fight with Indonesia and Australia and under the presurres of big companies such as Shell and Conoco-Phillips. These companies look for the countries were they could have more privileges in order to decide with whom will they negociate, and are worried about Timor's intention to set new taxes. The oil of Timor is a double trap, a permanent thread to its sovereignty and a risk to fall in a rentist model of economy.

The expectatives of incomes for gas and oil are very high. It has been calculated that Timor could receive between 8 and 38 thousand millions of dollars in the next 30 years, depending on the frontier line that would be established. The budget of the government for the next year is 77 millions.

The discussion of its sovereignty has many sides. Timor Leste assumed a big human cost for its the territorial independence process. Now its heritage is at risk, because the huge reserves will destroy the country.

The proposal to maintain the oil underground represents



a big opportunity to advance in a sovereign model.

* Esperanza Martínez, Oilwatch

GHAPTER 1

MAURITANIA: AN ECOLOGICAL CRY*

More than half of Mauritania is desert and the majority of its 2,9 million inhabitants live from shepherding and fishing, with the latter constituting more than 50% of its export income. In Mauritania fishing represents almost 50% of commercial trade, 43% of total exports, 25% of the national budget and more than 14% of its qdp. A total of 40,000 jobs depend directly from this activity. In weighing the importance of fishing against oil, if there was an international fishing organization comparable to OPEC, Mauritania would be like Saudi Arabia.

Oil activities in Mauritania have just begun and are located in one of the richest coastal areas in the world in terms of marine biodiversity.

ı. Climate change

The oil companies operating in Mauritania have stated that its oil reserves amount to 500 million barrels (almost half of what the ITT area of Ecuador contains). Estimates of natural gas reserves are between 1,000 and 3,000 billion cubic feet.

If all the oil from the Mauritanian sea were exploited, 200 million tons of CO₂ would be released into the atmosphere, contributing to global warming and climate change.



Mauritania has already been affected by climate change. After serious climate crises, a consequent drought, the ruin of shepherding activities and the hunger that began in the mid 20th century, a lot of nomad families moved towards the coast. These groups had, in the past, only stayed in the Bane D'Arguin National Park (NPBA) during the fishing seasons.

Destruction of biodiversity

Mauritania has great environmental richness due to its marine and coastal biodiversity and marine ecosystems such as mangroves, estuaries, and vegetation beds. This biodiversity richness is shared with neighbouring countries of Senegal, Gambia, Guinea Bissau, Guinea and Cape Verde. These countries have registered more than 700 species of fish, 23 species of cetaceans (orcas, whales, sperm whales and dolphins) several species of marine turtles and a considerable population of seals.

The most important area in terms of biodiversity is the NPBA. It has the greatest concentration of reproductive colonies of marine birds in West Africa and the greatest population of hibernating birds in the world. In total 43 genus and 273 species of birds and a temporal colony of more than two and a half million birds have also been identified. This ornitho-fauna is an indicator of the great ichtio-fauna diversity (15 registered families), which also explains the richness of the sea.

Terrestrial mammals such as the Cape hare, 10 species of rodents, jackals, foxes, fennec foxes, skunks, hyenas and two species of wild cats can all be found at Banc D'Arguin National Park. There are also 16 species of crocodiles and lizards, 7 species of snakes and 5 species of turtles. In addition, many benthic fauna have been registered: a total of 130 species, most of them bivalves. Among the artiodactyls, the gazelle and cheetah have almost disappeared, (the last individuals were registered in the 1950s when it was still raining). In terms of flora it is important to

mention the mangroves. The last areas of mangrove forest of Mauritania are inside the NPBA. At least 46 plant families and numerous species of algae, fungi and lichen are also present.

The marine richness of Mauritania has already been affected by over-fishing to satisfy the demands of European markets. In the last years, a new decrease in fish has been registered, which coincides with the launch of off-shore oil exploration. The biodiversity described above is in imminent danger because of oil activities outside the NPBA sea area. There will also be social impacts such as the destruction of local economies, inflation, insecurity, violence and deep cultural changes. The Imraguen, with their artisan and industrial activities, would be the most impacted.

Traditional peoples, economies non dependent on oil and self-sufficient models

Today, almost 1,300 Imraguen traditional fishers and their families live inside the NPBA. The Imraguen are internationally known for their symbiotic relationship with dolphins. The dolphins drive schools of mullet towards the nets upon being called to do so by fishers. However, this cooperative fishing has practically disappeared because the dolphins do not swim near the coast anymore. It is believed that this has happened over the last 10 years because of the oil exploration along the coast of Mauritania.

The use of motorboats has been expanded in the NPBA,

but the Imraguen population still use sailboats called "lanches". We can conclude that the Imraguen identity is based upon fishing traditions and the use of capture and navigation techniques. These techniques were discovered by outsiders in the mid 20th century and are still being used by the populations of nine villages that exist within the NPBA.

4. NPBA moratorium

The moratorium is a legal institution of common use at the international and national level. It is a prudent term decided between the national state and local or international non-state actors, in an effort to analyse, evaluate or make a balance of the social, economic or environmental advantages and disadvantages of the past, new or developing production proposals.

This analysis can emphasize the protection of the environment; guarantee the exercise of human rights, or an adequate and fair redistribution of wealth. If there is a negative balance it can help to discover real alternative possibilities, or look for different ways of development.

The people of Mauritania could determine what new development based on hydrocarbon activities mean, and support their arguments with the precaution principle and the innumerable international agreements that the country has signed. Experience in other countries demonstrates that this type of development only brings more impoverishment, environmental destruction and human rights violations with other social, economic and environmental.



tal impacts. The Mauritanian people could ask for compensation to protect the nation's biodiversity and avoid emissions that cause the green house effect.

The inhabitants of the NPBA depend directly on fishing activities and tourism along their coasts, so any oil related accident could mean the destruction of the environment and the fishing economy of this country. The incompatibility between conservation, tourism, fishing and oil activities is evident. In Mauritania, sustainable development and sustainable societies cannot be created if oil exploration activity continues. It is important to grasp this reality in the long term. In some 10 years, oil under the Mauritanian coast will dry up, and with it all related economic benefits. The impact that will remain will last forever.

The proposal has local, national and global benefits. It articulates in a coherent way the global objectives of conservation, protection of the economic, social, cultural, environmental and collective rights, relief of external debt and solutions to climate change, which in turn is positive for all humanity.

* Ivonne Yánez, Oilwatch

BOLIVIA: MADIDI NATIONAL PARK*

underground to promote the development of local communities

Bolivia is considered to be one of the poorest economies in the Americas, but it has nevertheless granted important oil reserves to petroleum companies for free. The value of Bolivia's oil reserves are \$us4 billion, yet through 1997 the state handed over \$us5.14 billion to these companies.

An oil audit made between July 2006 and April 2007, under the coordination of Enrique Mariaca – assigned to the task by President Evo Morales - demonstrated that the oil companies didn't reach their investment or exploration commitments due to limited technological effort and the non-fulfillment of exploration contracts. In addition, they wracked up a list of environmental liabilities that amount to \$us61 million.

Even though the profit that is generated by the oil industry is higher than any other economic sector, and in spite of the manipulated accounting of the oil companies in presenting excessive investment costs, increased overhead, and disproportionate administrative expenses; some companies declared their profits to be below zero. Cutting-edge technology wasn't incorporated into the YPFB plants, so that when the plants passed into transnational hands they didn't modernize them. They were operated in an inefficient way with too much liquid in the treated gas and too much gas being flared.

The equipment given by YPFB at capitalization time only received corrective maintenance and overhaul, instead of a preventive and predictive one. No care was taken of this equipment, which, operated at maximum capacity until it wore out.

Consequently, the structural reforms in the oil sector that led to the capitalization/privatisation of the oil industry damaged the interests and resources of Bolivia. Their quantification came from the audit process (based on information relating to previously established reserves before privatisation), fulfilment of investments, environmental liabilities and gross investments by the companies. The audit results show policy failures in the sector and the acquisition of debt for the country by the companies and the people who executed the process in Bolivia.

Since the promulgation of Law 3058, the Bolivian state has recovered the oil wells, exerting its rights as owner. With Supreme Decree 28701 of 01/05/2006 for the Nationalization of Hydrocarbons, the Bolivian State exerted the rights established in United Nations Resolution 1803: "Permanent Sovereignty over Natural Resources" and ratified the theory and the practice of nationalization. This decision was specifically based on the notion that only the state can use the natural resources of its territory to achieve "social function". The objective is to resolve the current and future necessities of its population, instead of "carrying out indiscriminate and irrational

exploitation causing irreparable damage to oil retrieval and the environment, and disrespect for community rights" (Enrique Mariaca, 2006) - as do private corporations.

2. Protected areas and the proposal to keep the oil underground

Protected areas were created to care for biodiversity - in other words, natural heritage .Because the areas are public, they belong to all Bolivian inhabitants and achieve the social function of protecting and conserving the wild flora and fauna, genetic resources, natural ecosystems, watersheds and their aesthetic historic, economic, scientific and social values - with the objective of conserving and preserving the natural and cultural heritage of the country.

During the years of capitalization, the pressures of the global market pushed governments to sacrifice the protection of public property and goods for the commercial interests of the private sector. In order to offer favourable conditions to "attract investment", governments sought to reduce regulations that protected biodiversity, protected areas and the environment, and secure the activities of transnational corporations and/ or their associates in protected areas.

Currently, sectors that have lost political space generate conflict in protected areas because the interests over these areas are not just reduced to oil and minerals (Petrobrás, Total Final and Repsol in Madidi, Amboró and Tipnis and Comsur in San Matias

have concessions within protected areas). Other sectors are interested in these areas such as the pharmaceutical, food, pesticides and biological weapons industries that gain huge profits from such biodiversity. Moreover, there are other new economic sectors created for the development of biotechnology and technological revolution, with biological richness their main and essential raw material.

These sectors are sometimes associated with major international ngos that manage more economic resources than the income Bolivia receives for its gas exports. In some circumstances these interests are allied to local interest groups that in turn apply pressure for oil exploitation in protected areas such as Madidi Park.

Madidi comprises 18,960 km2, and is located between the Franz Tamayo and Iturralde provinces, north of the state of La Paz. The park is classified as one of the greatest biodiversity reserves in the world. The flora of the area is directly related to its altitudinal variation and steep orography. It has a tropical and humid climate. Although the species have not been counted, it is known that this park contains one of the richest forests of Bolivia. Indigenous communities such as the Tacanas, Ouechua and Araona live inside this park and there is evidence of the presence of uncontacted peoples: the Toromonas.

The conflicts generated in Madidi Park are partially due to the huge resources managed by NGOs such as ci and wes. They do not take the impact over the lives of the local inhabitants into account, which is why they generate expec-

tations of the oil exploitation. The oil industry finances these NGOs.

Currently there are three superimposed concessions in the area: the Rio Hondo blocks, which are in hands of Petrobrás (1,000,000 ha, of which 598,000 are inside the park: ANMI Madidi, the BR-TCO Pilon Lajas and the TIPNIS), Tuichi (805,000 ha, of which 557,193 are inside the park – ANMI Madidi and the BR-TCO Pilon Lajas) and Tequeje. Some prospecting has been done in these last two, with positive results in the southern area.

If the current government is determined to negotiate the biological richness of the country, it must have a comprehensive approach and identify the strategic resources juxtaposed in the area with other characteristics such as oil, minerals, biodiversity, water, the transportation infrastructure created for its exploitation, the absence of the state and the presence of major conservationist ngo's inside the Madidi and other parks.

Bearing in mind that nature and biodiversity could not be built without the social control of collective space, the proposal to leave oil underground is an important alternative for protected areas such as Madidi Park. To leave oil underground does not only imply a contribution to prevent the consequences of climate change. Oil activities have demonstrated not only their deforestation of the Amazon (which in turn causes biodiversity loss), but also generate social impacts over indigenous peoples, imposing upon them other economies and development models. The implementation of this proposal is also important be-



cause it can stop the destruction of fresh water resources and contribute to strengthen the presence of the State in protected areas (these days in the hands of the transnational conservation NGOS).

Above all, this proposal can be incorporated into development plans that are, in turn, the axis of policy changes intended for implementation in the country. The resources obtained will promote the work of the National Development Plan, not only motivating the capacities for self-intervention management, but also allowing the country to retain resources to cover its future energy needs.

In addition, an essential element of the proposal is "participation and agreement". This element is related not only to institutional maturity for development, but with an awakening of the world's conscience about the need to protect areas of the planet that still retian conditions to make them habitable.

* Patricia Molina, FOBOMADE

INDONESIA: LORENTZ NATIONAL PARK*

Lorentz National Park is located in Irian Jaya, which is also known as West Papua. It has more than 24 ecosystems, including the biggest tropical forest of the Asia-Pacific. The Jaya Mountain (with an elevation of 4,884 meters above sea level) is the highest in all South Asia and is covered by glaciers, although it is on the equator. This national park also incorporates a great part of the Warim Papua area in Irian Jaya.

It is here where the greatest concentration of plant species in all Indonesia is located. There are about 16,000 species, hundreds of them with medicinal characteristics. At least 124 genus are endemic to New Guinea and this endemism could reach 90%. Of 2,770 species of orchids that have been registered.

The researcher Wallace in the 19th century discovered a strong bio-geographic division in the Indonesian archipelago, and described a line that separates the world of the marsupial and the placental mammals. Irian Jaya is influenced by the two worlds: with one side inhabited by the tree kangaroo, while the majority of the amphibians are of Asian origin. This is why the biological richness in this area is unique.

In 1991 the area was included in the list of the National Action Plan of Indonesia for Bio-

diversity as a place with a high priority for conservation. In 1999 it was designated a Natural World Heritage Site.

There are about 11,000 inhabitants inside the park, all of them members of 8 (probably 9) indigenous groups: Nduga, Amungme, Damal, Nakai, Asmat Keenok, Sempan, Dani, and Komoro. All of them have lived in these territories for more than 24,000 years and have developed some of the most isolated cultures in the world.

Unfortunately, in this national park there are also minerals for exploitation. The Warim Block has big reserves of natural gas and oil. According to seismic data, there are 13 hydrocarbon prospects

with a total of 21 billion barrels and 4 prospects with significant resources: Cross Catalina (200 mmbo), Lorentz (640 mmbo), Muras Oriental (210 mmbo), and Steenkool (200 mmbo), are all located in the north western part of the Warim Block.



BASES FOR OIL EXPLOITATION IN LORENTZ

Forest Law 41/1999 prohibits mining (including oil exploitation) in protected areas. The Amman Resolution of the iucn calls for the halt of any mining activity in protected areas under the i-iv categories. In addition, the iucn stipulated that all the natural places designated as World Heritage Sites should be "prohibited places".

All the mining contracts signed with the Indonesian Government establish that the companies should obey and implement Indonesian laws, norms and statutes-including those laws decreed

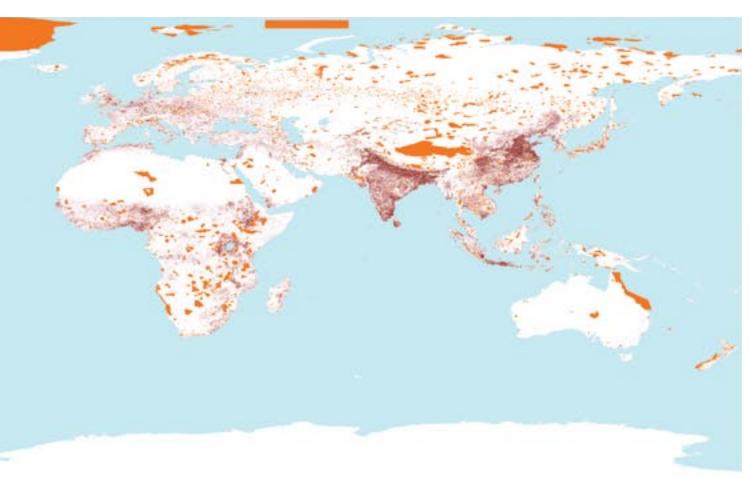
to protect the environment. These laws, norms and statutes could be modified to adjust to new environmental needs and the social conditions, but always to the benefit of the Indonesian people.

Indonesia is committed to the global conservation of protected areas and natural biodiversity through the ratification of the Convention on Biological Diversity, and accepts the Declaration of Forest Principles, that are part of the United Nations Forum on Forests (unff).

In 1999 and at the local level, the Legislative Council of Irian Jaya solicited the us oil company pt Conoco to stop its exploration activities in Lorentz National Park..



Elizabeth Bravo



PROTECTED AREAS IN THE WORLD

NIGERIA: NO MORE OIL BLOCKS*

ı. Niger delta

communities: beaten by all

sides

The path of crude oil development has been strewn with skeletons and soaked in human blood across the world. The ongoing case in Nigeria is a glaring example.

The usual assertion that Nigeria suffers from a resource curse may not be true because the resource that we are endowed with is a blessing rather than a curse. Resource wealth does not necessarily have to subvert development. One would agree however that the scramble for the wealth does subvert our collective ability to resolve the conflicts into which we are immersed. And this is primarily because of the privatisation of public funds generated through the exploitation of these publicly held resources.

The crisis situation can best be seen as a result of interplay of a web of interrelated factors, and not the result of a single determinant. As an analyst put it, "While most of the attention is often placed on local actors: the state/political elites, militia groups/warlords, and weak and inept bureaucracies, very little attention is paid to the role of external and transnational actors and the lack of transparency that shrouds the extent of their involvement in these conflicts."

Obi, Cyril, Oil and Development in Africa: Some Lessons from the Oil Factor in Nigeria for the Sudan (Copenhagen: DISS Report 2008:8: Oil Development in Africa:Lessons for Sudan

The massive transfer of public funds into private and corporations hands is best described as disaster capitalism.

The 'benefits' of disaster capitalism to oil companies include:

- Operating behind military shields as they have always done. This way the state apparatus of coercion does the dirty job and the oil companies involved can claim they were not a party to the assault.
- Refuse to pay adequate taxes unless publicly pressured.
- Make false declaration on the amount of reserves they have in Nigeria, get punished elsewhere and stay happy and quiet in Nigeria with no questions asked. False declaration ultimately is nothing but an exercise in self delusion.
- Be found guilty of bribing Nigerian officials by investigators outside Nigeria, whereas no questions are asked in Nigeria where governments make plenty of noise about fighting corruption.
- Declare that oil spills are caused by sabotage even where there is no evidence to support such claim. And based on these spurious claims, such spills are left unattended to.

2. High tide: the way

forward

Much of the violence experienced in the Niger Delta has been inflicted without any shot being fired. For example, whenever the word restiveness is mentioned images of rampaging Niger Delta

after the Comprehensive Peace Agreement Edited by Luke Patey, 2007) p.14

youths come to mind. A cursory look at the other geopolitical zones in Nigeria will reveal that youths are just as restive in those parts as they are in the Niger Delta. Secondly, whenever there is a pipeline tragedy consequent upon a fire or an explosion, most reports jump to the conclusion that pipeline vandals were responsible. By these ingrained constructs, the region is now known as a volatile region where the unthinkable become the expected.

It is time for us to calmly reexamine ourselves and strive to uncover where the rain began to beat us. It is time for the Niger Delta to show the way in a collective drive to reconstruct our regional as well as national psyche. This will start by our people understanding that the violence in the Delta is a boom for merchants of crisis capitalism. The gun runners, the kidnappers, the ballot thieves and those engaged in illegal bunkering differ very little irrespective of whether some of them are tagged Excellencies or Honorable. In one short phrase, it is time for us to regain our sovereignty and to ensure that our ballots decide who holds the reigns of our government, who makes decisions and how and when we want our resources extracted.

We propose here that as climate change pushes the world towards a cataclysmic brink, a major move is to tackle the trend at the root cause. The cost of doing nothing is simply too high to contemplate. It is estimated that temperatures in West Africa may rise by up to 4 degrees Celsius and that sea level rise is expected to lead to a loss of over half of the land of the

Niger Delta by 2050. There will be an increase in vector-borne diseases as well as severe dislocations. With the downward march of the desert, environmental refugees from the south and from the north will put extreme pressure on the middle belt and raise new levels of crises.

Is there nothing that can be done? We recommend that Nigeria openly discusses with communities in the oil belt on the question of what is to be done about further extraction and their environment. While this consultation is going on, there should be no new oil field prospecting - a moratorium, so to speak. This period will also allow for a thorough auditing of the environmental despoliation visited on the Niger Delta. A programme for a clean up by the polluters should also be agreed to at this time. The example of the demands of Ecuador with regard to oil exploitation in the Yasuni national park is very applicable to Nigeria and needs to be taken on board. Ecuador is demanding that they should be compensated for keeping the oil in the ground. The argument is that by that action the release of Green House Gases are blocked at source since the fossil fuel is not brought up for use. This is true carbon sequestration and deserves to be applauded as a bold step to wean the world from a steep and possibly fatal down-slope slide.

Decades of oil extraction in Nigeria has translated into billions of dollars that have spelt nothing but misery for the masses of the people. It is time for Nigeria to step back and review the situation into which she has been plunged. The preservation of our environ-

ment; the restoration of polluted streams and lands; the recovery of our dignity will only come about when we stand away from the pull of the barrel of crude oil. Oil blocks licensing has become a bazaar in Nigeria. Huge signing fees are exchanged as though the players in the game were soccer or music stars. This signals the fact that there is something fundamentally faulty about the entire enterprise. This is the time for all Nigerians to demand that no more oil block should be given out for exploration or for exploitation. Nigeria was richer through her great agricultural produce before the ascendancy of crude oil as the major foreign exchange earner for the nation. Crude oil brought about crude actions in every realm of national life. Besides, crude oil while oiling the wheels of "development" is damaging the climate of the world and the psyche of her people.

We demand that the world takes the example of Ecuador and join with one voice to demand the revolutionary step of keeping g the oil in the ground in order to rescue the world from the destructive path mapped and propelled by the fossil fuel mode of civilization. This major move makes both moral and economic sense and every nation that takes it should be adequately compensated for the positive contribution.

ERA is making a modest contribution in this regard by teaming up with communities to facilitate the growth of a Host Communities Network. This network erases the dichotomy between communities that have oil resources and those who bear only the impacts of oil extraction.



In a revolutionary manner groups that used to stand at antagonistic ends are now coming together to confront the common challenge of environmental injustices in their land. Wider alliances in this mold will help bring about our dream for true global democracy for human development, social justice and environmental justice. Our life and our future are in our hands.

* Nnimmo Bassey, ERA

THE LEGAL STRUCTURE OF YASUNÍ NATIONAL PARK*

INDIGENOUS TERRITORY, INTANGIBLE ZONE, BIOSPHERE RESERVE... OIL TERRITORY?

Yasuní is one of the most important regions of the Ecuadorian territory. It is the biggest protected area of tropical rainforest in the country. Its size is 982,000 hectares (Yasuní National Park). Its impressive natural richness is acknowledged as one of the 3 greatest of the world. It also is the area with the greatest tree density per hectare in the world.

However, the natural richness is not the only aspect that makes Yasuní so important. It is also the birthplace of development of different cultures throughout history and it's the current home of the Huaorani, Kichwas and several indigenous peoples in isolation. This is why the National Park conects with the Huaorani Territori (HT) and together they make up the Yasuni Biosphere Reserve (YBR). Finally, an area superimposed to the latter, was declared with the name of Intangible Tagaeri-Taromenane Zone (ITTZ). Its purpose is to safeguard the development of the indigenous groups in isolation (indigenous people that are still resisting the occidental contact and live by their traditions), the last ones in the Ecuadorian territory and one of the few that are still alive in the world.

Below, the different management categories are described briefly:

I. Yasuní National Park

Yasuní National Park was created in 1979, it had an area of 1,476,000 hectares between the Napo and the Curaray rivers. As the majority of the protected areas of Latin America, it was thought of as a space without people. However, it houses the ancestral territory of the Huaorani and has been territory of some Kichwa populations for decades. These indigenous groups were never taken into account for the Parks' planning.

In 1990, due to pressures of the oil companies, the Park was reduced to 625,000 hectares. At this time, a part of the YNP is adjudicated to the Huaorani, with the double purpose of vindicating their fight to get back their territory but over all, to leave the way open for the oil companies. The adjudication specifies that the underground is property of the state and the Huaorani could not oppose to its exploitation. Therefore, the entry of the oil companies depended only on a direct negotiation between them and the Huaorani authorities (a completely unequal negotiation and the accomplice absence of the government).

YNP is managed by the Ministry of Environment of Ecuador, an entity that presents a lot of limitations on its budget and personnel that makes its control and management not very effective.

2. Huaorani Territory

(HT)

The Huaorani nationality was forced to contact the occidental civilization by the Summer Institute of Linguistics (SIL) and several oil companies, in 1958. Before this, the Huaorani lived in a wide area of territory approximately 2 million hectares between the Napo and Curaray rivers and from the foothills of the Andes to the borderline between Peru and Ecuador. Currently the HT has an extension of 809,339 hectares in the Napo, Orellana and Pastaza provinces (Lara et al 2002).

After this "pacific contact" period by the SIL, in 1969 the State congregates them in a redoubt of 16,000 hectares known as the "Huaorani Protectorade" (Rival. 1996). Then in the year 1983, the Instituto Ecuatoriano de Reforma Agraria and Colonization (IERAC)¹ adjudicated them an area of 66,570 hectares including the Huaorani Protectorate. However this document was revised and rectified. during the development of the Management Plan of the Huaorani Territory (2002), changing it to 679,230 hectares, that after some additional adjudications (including the one in 2001) totals 809,339 hectares.

It is important to mention that the Huaorani claim all the

The Agrarian and Colonization Reform, that IERAC created, legalized the tenure of the land in favour of the ones who possessed and used the "tierras baldias" or "abandoned" lands or those that did not have a legal owner. This law caused terrible socio-economic and environmental consequences. However, it alowed the recognition of the ancestral possesion of lands of the indigenous and afro-ecuadorian peoples (Lara et.al 2002).

THE YASUNI MODEL

YNP as their territory. They have settled next to the areas occupied by oil companies.

3. Yasuni Biosphere Reserve

The Biosphere Reserves are areas where an equilibrated relationship between the human being and the environment is fomented and shown. The biosphere reserves are recognized at the international level in the framework of the Man and Biosphere program of UNESCO. The Biosphere Reserves try to promote a sustainable development, the biodiversity conservation and investigation as well as its spreading. UNESCO proposes that these reserves should have a Nucleus Zone completely without extractive activities; a buffer zone that protects the nucleus zone and

a transition zone that promotes the cooperation within external actors; all this established in a logic of sustainability. YBR was declared in 1989, however this area has not been organized or managed ever.

4. Intangible Tagaeri – Taromenane Zone (1772)

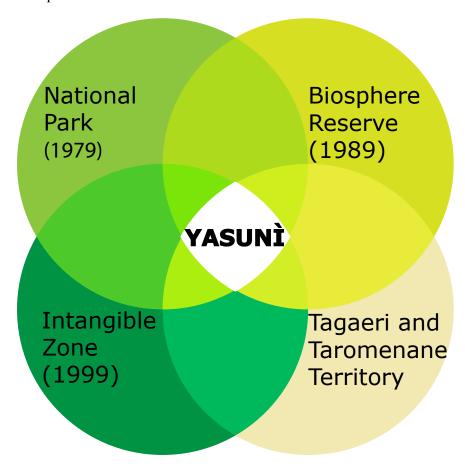
Although the word "intangible" can sound like an absolute prohibition of activities, the ITTZ only pretends to eliminate the possibility of any extractive or industrial activity. It is a protected space of an exceptional cultural and biological importance where extractive activities aren't allowed (oil, logging, mining, etc). The category of Intangible Zone was created as the last resource of the government, in the year 1999, through an Executive Decree.

This has generated some comments because it is considered that this is a nonexistent category of protection or that is not sufficient. In fact, the delimitation of the ITIZ was a very complex process that lasted more than 7 years but it established geographical limits and gave the basis for an effective management. The total area of the ITIZ is approximately 780,000 hectares.

The ITTZ cuts through several oil blocks; this is why it had a strong opposition from the oil companies. The management of the area can't be articulated yet, however its delimitation means the reduction of these oil blocks and the prohibition to the oil companies to enter the conserved forests of the Yasuní. It is also a legal support for the opposition to extractive activities that are prohibited by the Decree.

It is important to make clear that the ITTZ does not protect all the isolated indigenous people of the Yasuní. It only protects minimally the space where they have moved with frequency. There are at least two more groups in isolation in the area besides the Tagaeri and Taromenane. There are strong signs of their presence in the oil blocks of the north part of Yasuni (specially in blocks 16, 31 and 1TT). Some of them can be found crossing the border zone with Peru where they are also victims of the pressure of the extractive companies, especially the oil ones.

All these categories reflect the environmental, social and cultural importance of Yasuní, a heritage of Ecuador and the World. * Eduardo Pichilingue, Ecociencia



THE ISHPINGO-TAMBOCOCHA-TIPUTINI (ITT) PROJECT*

The project is located in the eastern part of the Ecuadorian Amazon, it is constituted by the fields: Ishpingo, Tambococha and Tiputini. It is the biggest heavy oil discovery (14° API), after the Pungarayacu field. The block is inside the Yasuni National Park and partly inside the Intangible Zone assigned to the Huaorani people.

The total volume of original oil in place (OOIP) discovered reaches the 5,586 million barrels (MMBLS), with recoverable reserves (NPRIM) of 920 MMBLS, from which 607 MMBLS (66%) fall under the proven category and 313 MMBLS (34%) are unproven or to be discovered.

Field	Volume
Ishpingo South/ North	3235
Tambococha- Tiputini	2351
Oil in site	5586
Reserves	920

OIL IN SITE AND RESERVES (Million Barrels)

The oil fields are sub-saturated because they have little gas dissolved in the oil. Their main energy source is the constant input of water from the surface, that moves oil from the fields to the wells. The hydraulic pressures are high and decline slowly, so it allows them to be maintained.

The porous substrate has a good quality, and few waterproof barriers such as clay and it is well interconnected so the oil fluids and water move easily. Therefore, these two fluids compete with each other to reach the wells.

However, because water is 100 times less viscous than oil, as time goes by, and sometimes very fast, it leaves oil behind. Then the wells are converted into water producers, so they have to be closed down. In the heavy oil fields and groups of fields at least 30% of the wells have been shut down because of this problem. There have been cases were in less than a month the wells got full of water.

This has happened, not after, but before the proven reserves have been extracted, so oil reserves stayed in the fields. It is foreseen that at least 20% of the reserves of Block 16 and the fields: Eden-Yuturi, Indillama, Laguna and Itaya from Block 15 are not going to be extracted due to the phenomena mentioned above.

Crude oil from the ITT Project is more viscous than the oil from Block 15 and 16, this is why it is expected that water action would be more severe. This constitutes the main thread to extract the reserves of the ITT block.

Theoretically it is possible to have control technology, however the few tries have not been successful. The technology that was applied successfully in

other areas have failed in the Ecuadorian Amazon.

All Petroecuadors proposals suggest that there are going to be several problems, especially from the environmental point of view. Some of the expected problems are the management and destiny of the wastes, the excessive optimism in relation to the reserves, the lack of knowledge of the environmental impacts of the activity and the technology which will be used. Due to the extraction costs, we can conclude that they are going to use similar technologies as the ones that have caused the environmental crisis in the existing oil areas in Ecuador.

There are oil activities that are already affecting the Yasuni National Park, but the ITT Project and block 31 are in the heart of the Park.

In the two cases it is crude oil between 14 and 15° API, highly viscous. It is expected that the two blocks would have a water-to-oil ratio comparable to the one of block 16. In this block that relation is 90 barrels of water to 10 barrels of crude oil in average. This means a great quantity of wastes that would be discharged into the environment.

According to the Environmental Impact Assessment presented by Petrobras for Block 31, the amounts of oil to be extracted would reach its peak maximum at 30,000 barrels a day, but in 18 years it will decline quickly to 3,000 barrels a day.

According to Petroecuador, in the ITT Project, the oil production would stabilize at 108,000 barrels a day during the first 17

THE YASUNI MODEL

years and it will drop to 58 thousand barrels per day 29 years after the project starts.

For both projects, the total production would start with 20 thousand barrels per day, reaching its peak at 122 thousand barrels per day in the fifth year, dropping to 59 thousand barrels per day in the year 29.

Legend

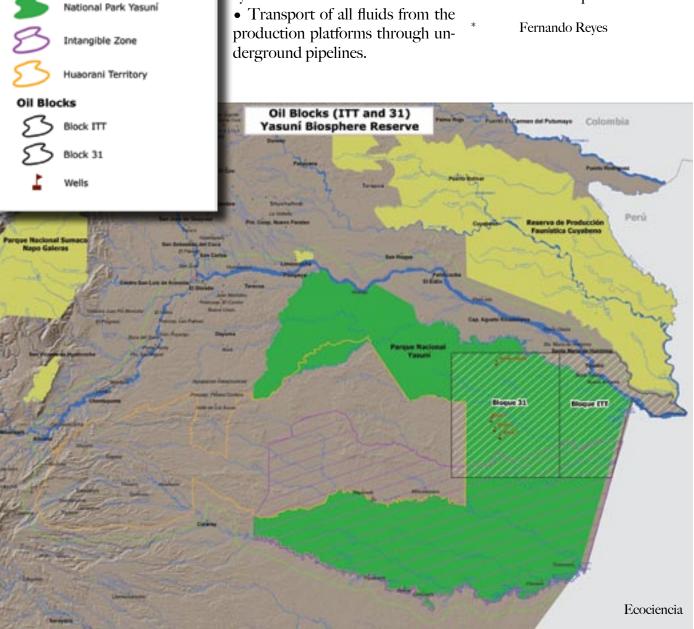
Yasuni Biosphere Reserve Limit

In the Ecuadorian Amazon Region, the extractive offshore technology has been adapted to its sensitive areas (the humid tropical forest). Therefore for the ITT project it has been foreseen:

- Cluster perforation from 7 platforms that are constituted of 13 to 26 wells each, 113 wells in total. Perforation of 20 wells for formation water re-injection.
- Artificial raising using electrosubmersible pumps
- Closed Oil and water treatment systems

- Telemetric information and control system SCADA
- Central production facilities located outside the Yasuni National Park
- Immediate Response Plan for operational contingencies with aerial support.

In spite of the technological proposals, the weakness of the Environmental Ministry and other government agencies related to conservation and culture, do not guarantee that the development of the ITT Project will fulfil with the constitutional requierements.



PREDICTABLE IMPACTS OF THE OIL ACTIVITIES INSIDE YASUNI*

The opening of the oil frontier, if the ITT project is developed, would entail the creation of a new oil industry zone, where the same impacts would be seen as those that have been well documented in already operational zones.

Those impacts can be summarized as follows:

- Environmental impacts: pollution, deforestation, alteration of ecological relationships in ecosystems.
- Economic impacts: loss of productivity of self-sustenance economies. High costs of security, maintenance, mediation and compensation.
- Social impacts: general deterioration in the zone, alcoholism, violence, prostitution, disease. Destruction of the social fabric.
- Political impacts: increase in conflicts in the region, state abandonment, crossborder violence.
- Cultural impacts: impacts in the lives of the local peoples, cultural extinction.

In addition to these impacts, it is also necessary to consider the other impacts triggered by oil industry activity, such as the link between the building of roads and illegal logging – as is the case in the logging activity in Yasuní National Park and even in the so-called "untouchable" zone – as well as colonization, tourism, bioprospecting and other threats.

. Impacts of drilling

wells

The oil industry recognizes that for every vertical well that is drilled, 500 cubic metres of solid waste and between 2,500 and 3,000 cubic metres of liquid waste are produced, while directional drilling leads to 20% to 30% more solid and liquid waste per well.

If the plans to drill 130 wells in the ITT fields are carried out, this would create 65,000 cubic metres of solid waste (equivalent to 13,000 dump truck loads of five cubic metres each) and between 325,000 and 390,000 cubic metres of liquid waste (equivalent to more than 65,000 dump truck loads). The companies say this waste will be left beneath the drilling platform, a mechanism through which toxic elements are spread by the first rains. If the drilling is horizontal, the figures could rise to 78,000 cubic metres of solid waste (equivalent to 15,600 dump trucks) and between 420,000 and 504,000 cubic metres of liquid waste (84,000 to 100,000 dump trucks). If the number of wells drilled is doubled, as per the Sinopec proposal, then the volume of waste would be doubled as well.

It should also be taken into account that in terms of the life-time of wells, those that are used to extract heavy crude tend to collapse rapidly, and in order to continue extracting the crude, new wells need to be drilled.

2. Deforestation

Forests, water and climate are closely linked. Mature forests capture water and maintain the balance of the ecosystem and local temperatures. Tropical forests absorb a large amount of solar radia-

tion, and as a result, massive forest clearing increases the reflectivity of the earth's surface. The albedo effect is the increase in solar energy reflected towards outer space, and is fundamental in the control of global warming.

Texaco deforested up to five hectares of land to build a drilling platform. However, according to Executive Decree 1215 (Environmental Regulations for Ecuadorian Hydrocarbon Operations), the maximum allowable in a protected area today is 1.5 hectares for the installation of a platform, camps and heliport.

If the platform contains several wells, the regulations allow for up to 0.2 hectares for each additional well. Then there is the deforestation associated with the building of access roads, which can be up to five metres wide, as well as rights of way for pipelines and transmission lines, camps, and other infrastructure.

The most significant deforestation is the indirect deforestation associated with the building of roads for infrastructure maintenance and the colonization generated by the project itself.

3. Impacts of produced

water

Produced or formation water is a type of sedimentary water that results from 150 million years of natural processing and contains very high levels of chlorides and heavy metals. It can contain concentrations of sodium chloride and other solids as high as 100,000 ppm (parts per million). By contrast, seawater can have concentrations of up to 35,000 ppm.

THE YASUNI MODEL

This high salt content is significant because it increases the solubility of other elements, including the radioactive element radium. In addition, this water reaches temperatures of 80°C. It also contains particles of soluble hydrocarbons and the chemicals that are used to separate the water from the oil and to protect the drilling installations, such as demulsifiers, paraffin inhibitors, biocides and others.

The average water-to-crude ratio in the Amazon region is 80 barrels of water for every 20 barrels of crude oil extracted. This means that after 29 years of operations, the accumulated production of crude oil would total 960 million barrels, while the water produced with it would total 3.84 billion barrels, or four times more.

Produced water is already a problem for the state company Petroecuador, which was penalized in 2005 after a report from the Comptroller General's Office determined that it failed to comply with its established objectives for reinjecting the water.²

However, the volume of produced water will be much greater in the case of the ITT project and Block 31, and given that the proposals for developing the oil fields involve reinjection, the company that undertakes the operations would be faced with the problem of where

to reinject the water, for a number of reasons.

- I. The reinjection of produced water has been carried out in the permeable strata of the geological formations of Orteguaza and Tiyuyacu, Napo, Hollín and others. But these formations do not have an unlimited capacity for storing all of the water produced.
- 2. The formations where the water is reinjected contain faults and are not impermeable throughout; many reach the surface and are connected to underground and surface aquifers.³

Moreover, if the water production patterns are similar to those seen in Block 16 (which is more structurally similar to 11T and Block 31), the water-to-oil ratio would be 90 barrels of produced water for every 10 barrels of crude on average. As a result, the extraction of 960 million barrels of oil would lead us to expect 8.64 billion barrels of water.

If we accept the assumption that the ITT reserves contain 960 million barrels of crude oil, then their exploitation would mean that 8,649 billion barrels of produced water⁴ – a whopping I,375,052,616 cubic metres – would be released into the environment.

The possibility of reinjecting all of this water is unlikely if not impossible, because of the vast size of the formation that would be required. The water would inevitably be discharged in Yasuní itself, or, as has been proposed, in the

he General 3 idem

Shushufindi fields that are already oversaturated from the discharge of produced waters. But in addition, the water that can be reinjected will pollute the underground water sources in this important reserve.

Because of its composition, temperature and the chemicals it contains, produced water that is brought to the surface is extremely toxic for the environment. Most freshwater organisms cannot withstand the high salinity of produced water, and subsequently die off.

It is estimated that there are over 2,000 species of fish in the rivers of the Amazon region, many of which have yet to be identified, in addition to a wealth of other organisms that enable their existence at the top of the food chain. They reproduce in the floodwater areas where food chains develop and the majority of Amazon fish species deposit their eggs. The toxins in the produced water enter and pass through the food chain until reaching the final consumer: human beings.

At the same time, other animals living in the Amazon region, especially mammals, whether wild or domesticated, normally face a shortage of salt. As a result, the highly saline produced water spilled in the area will attract peccaries, deer and other animals, and when they drink this water, they will also ingest toxic substances.

Contamination of the soil can also lead to the strangulation of plant roots, thus damaging or in many cases killing off nearby vegetation. The substances contained in oil industry waste are often bioaccumulative and directly linked to numerous diseases, since they include carcinogenic, teratogenic and mutagenic substances.

* Esperanza Martínez, Oilwatch

- The temperature of these waters reach the thermal gradient close to the earths' average, increasing 25 30°C each 3-6 Km (Elder, 1981). These are the depths at which oil exploitation happens.
- 2 Special Report of the General Comptroller Department of the State, April 12th 2005. Environmental Audit of the Petroproduction Intervention in the Processes of Oil Exploitation and Production, related with fluids and perforation mud and formation waters in the Orellana and Sucumbios Provinces.

This calculation is based on an average of 75 barrels of water for every 25 barrels of oil, the figures that are used for heavy crude oil and applied to Block 16, the Eden Yuturi field or the crude oil operations of AGIP, which have a geological structure similar to the ITT field.

THE BIODIVERSITY OF YASUNÍ: NUMBERS AND THREATS*

This article is based on a report made by leading scientists of Yasuní National Park, and other tropical researchers concerned for the future of Yasuní, coming from Ecuador, Panama, Peru, Denmark, England, Germany, Greece, Scotland, Spain, and from across the United States includina Puerto Rico. Together they have well over 100 years experience conducting research in the park. They have studied many aspects of its biodiversity as well as the impacts of the Maxus Road, which was built in 1994 into northwest Yasuní for petroleum activities.

Yasuní National Park protects exceptionally high levels of biodiversity across many taxonomic groups. Scientists have documented both very high species richness, and very high numbers of species found within limited local areas. Yasuní National Park protects a region of extraordinary value in terms of its biodiversity, cultural heritage, and largely intact wilderness. This region — the Napo Moist Forests of the Western Amazon — has levels of diversity of many taxonomic groups that are locally and globally outstanding. For example, with an estimated 2,274 tree and shrub species, Yasuní protects a large stretch of the world's most diverse tree community. In fact, there are almost as many tree and shrub species in just one hectare of Yasuní's forests as in the entire United States and Canada combined. Yasuní has 567 bird species recorded - 44% of the total found in the Amazon Basin — making it among the world's most diverse avian sites. Harbouring approximately 80 bat species, Yasuní appears to be in the world's top five sites for bat diversity. With 105 amphibian and 83 reptile species documented, Yasuní National Park appears to have the highest herpetofauna diversity in all of South America. Yasuní also has 64 species of social bees, the highest diversity for that group for any park on the globe. Overall, Yasuní has more than 100,000 species of insects per hectare, and 6 trillion individuals per hectare. That is the highest known biodiversity in the world. Most of these insect species are new to science, and many new genera are being discovered as well.

Reflecting its biological uniqueness, World Wildlife Fund scientists have declared this region one of the 200 most important in the world to protect. Yasuní also conserves one of the larger contiguous tracts of the Amazonian rainforest, a broader region identified as one of the world's 24 wilderness priority areas. Furthermore, Yasuní and adjacent areas are home to the indigenous Huaorani, who have relatively uncontacted communities in the park.

Yasuní National Park has major global conservation significance for the following reasons. The park is one of the few "strict protected areas" in the whole region of the Western Amazon (National Parks of IUCN Category II). Furthermore, the broader Amazon as a whole has been identified as one of the world's 24 priority wilderness areas. While only 8.3% of the Amazon currently falls within any type of protected area, Yasuní conserves one of the larger contiguous tracts of this rainforest. The park's

value as a protected area is exemplified by the fact that it harbours a total of 25 mammal species protected under CITES and/or listed as Endangered, Vulnerable, or Near Threatened, as well as many other "species of concern" in groups such as amphibians, birds, and plants. For example, the park is one of the most important refuges for the Giant Otter (Pteronura brasiliensis), a Critically Endangered species within Ecuador and Endangered globally. The Giant Otters use a large part of the Tiputini River and watershed in Yasuni, and one of the confirmed populations is very close to the construction zone of the proposed Petrobras road. Yasuní also harbours the Amazonian Manatee (Trichechus inunguis), another Critically Endangered species within Ecuador that is Vulnerable globally. We also find that Yasuní is a site of scientific research of national and international importance. Furthermore, this research is generating economic value for Ecuador that could continue over the long-term. However, much of this research depends upon the continued protection of the park so as to maintain its ecosystems relatively undisturbed by humans.

If Yasuní is strongly protected, it could be one of the few places to provide long-term protection to viable populations of thousands of Amazonian species in the region. Yasuní is in a section of the Amazon predicted to experience minimal weather changes from global warming. The intact forest that Yasuní protects will only increase in conservation and scientific value as the surrounding forests are subjected to climate changes and are destroyed for agriculture and other uses.

Yasuní National Park is at the edge of one of 14 major deforestation fronts in the world.

THE YASUNI MODEL

The northern Ecuadorian Amazon is being deforested at a rate of approximately 0.65% per year (40,000 ha per year). At this pace, within the next 150 years, approximately 70% of the region's forest will be gone. Potentially irreversible impacts on the region's biodiversity can be expected much sooner due to habitat fragmentation and disproportionate clearing of areas with better soils.

Roads are among the main catalysts for the deforestation. A recent study suggests that for every new kilometre of road built in the region, an average of 120 hectares of forest are lost to agriculture. Forests near Yasuní are under tremendous land use pressure as a result. For example, the Canton of Shushufindi lost 19.3% of its forests between 1986 and 2001

While roads cause significant direct harm to tropical forest wild flora and fauna, the secondary impacts of roads cause more serious negative impacts over the long-term.

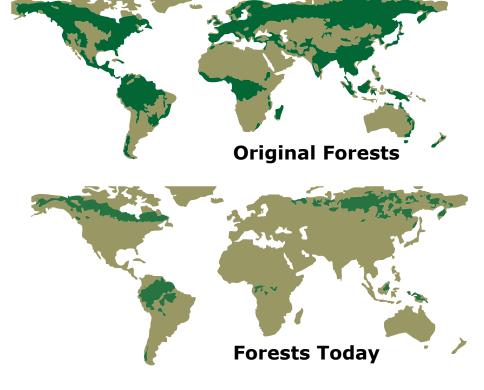
Although Yasuní is supposed to be a "strict protected area," research shows that the building of the Maxus Road into the park has provided an entry point for migration, colonization, and deforestation. While rates for these activities are slower within the park boundaries, they are still significant. Analysis of satellite images spanning the 10 years since the road's construction illustrate that, if present trends continue, half of the forest within 2 km of the road will be deforested within 50 years. Many farms and entire towns have been constructed in the park along the road. Additionally, on roads just to the north and west of Yasuní, there have been largescale deforestation and increasing resource extraction, including illegal logging, which threaten to encroach on the park.

In addition, the Maxus Road has led to increased subsistence and illegal commercial hunting within the park. These and the other human activities that have been introduced by the road are likely to be reducing the conser-

vation value of Yasuní in protecting Vulnerable, Threatened, and Endangered Species. The Maxus Road and oil company activities are also causing substantial changes to the Huaorani's economic activities, diet, and culture.

In sum, the negative impacts of roads have proven largely uncontrollable in Yasuní National Park and surrounding forests. We conclude that the oil development in ITT block will be a catalyst for migration, colonization, deforestation, illegal logging, and increased subsistence and illegal hunting inside Yasuní. There is no evidence that any Oil Company will be more successful in controlling these oilassociated impacts, as the underlying economic and social conditions driving them are ongoing. Thus, the proposed oil development represents a grave threat to the park's biodiversity and cultural heritage.

We advocate enactment of an Ecuadorian law prohibiting road-building in national parks for resource extraction, so that the parks maintain their biodiversity over the long-term. Significant revenues and employment are generated by the ecotourism lodges operating in the park's buffer zone and by the national and international institutions conducting long-term scientific research in Yasuní. The continuation of these activities depends upon maintaining the park's biodiversity and natural ecology. While, at current extraction rates, the oil under Yasuní and its associated revenues will be gone within 50 years, the park itself and its species could serve as long-term economic resources for Ecuador if safeguarded from further road-building and associated impacts.



* Scientists concerned for the future of Yasuní. Group formed by Finding Species. For a complete version of this report visit www.findingspecies.org

TAGAERI AND TAROMENANE PEOPLES: SOCIETIES OF ABUNDANCE*

In order to discuss the indigenous peoples of the Americas one must look at the brutal colonialism that subdued such peoples through genocide, expropriation of their territories and natural resources, and the destruction of their cultures, habits and ways of life.

The birth of the Ecuadorian national state didn't alter this situation at all; on the contrary it reinforced the concept of "national territory" in the indigenous territories, and at the same time negated the rights of ancestral peoples. History tells us about the existence of numerous nationalities and even indigenous empires that were extinguished. Cultures such as the Tetetes have been lost forever due to oil exploitation within their territories. Anthropologists tell us that the last Tetete was brought to Quito to be "cured" and ran from the hospital to likely die as a vagrant in the streets of the cold city.

Indigenous peoples still have their cosmo-vision and fight openly to maintain their cultures over a dominant and violent society that tries to corner them in the jungle and not recognize their territorial and human rights.

The indigenous peoples of the Woadani family, the Tagaeri, Taromenane and possibly other groups, are known by their Waorani brothers and sisters as



Free Peoples, because through their self-determination they have refused make contact with the dominant society. Their free choice to remain isolated from western culture is, at the same time, a proof of the acknowledgement of their right of possession of the lands and territories that they occupy as well as their control over natural resources and the maintenance and establishment of spiritual and cultural relationships with the environment.

The Free Peoples - the Tagaeri and Terminate - could be defined as societies of abundance. According to the stories told by the Woadani elders, this people - before their forced contact with the Summer Institute of Linguistics- had a group organization and a complex knowledge of the forest, enjoyed abundant leisure time, satisfied their material and survival needs without much effort, didn't work excessively, and voluntarily chose a subsistence economy without deliberately accumulating sur-

plus. This vision alters the social imaginary of aggressive savages that accompanied them for a long time.

The lack of knowledge of the culture and ways of life of the Tagaeri and Taromenane peoples and other groups that remain in voluntary isolation, lead us to make comparisons with the traditional life of the Woadani.

The Woadani people were considered hunters-gatherers in a society which worked less than ours, and instead of being constantly fatigued, their search for food was intermittent, their leisure time abundant and the average time of sleep per person during the day was superior to any other society. In spite of this, their food consumption was diverse and sufficient. They ate for pleasure and to subsist.

In societies of abundance the ones who feed the rest do so via a cooperative agreement (sharing work shifts and sharing food); that does not liberate the rest of the society of any tasks.

Societies of abundance are characterized by a low deliberated production, "the people chose not to produce at the maximum level. As unusual as it may seem from the western point of view, there is a conscious and coherent rejection of the idea of 'maximum effort by the maximum number of people", according to Sahlins, who adds: "The labour force is not totally used; technological means are not completely employed; natural resources are notfully employed, and production is low compared to existent possibilities. The workday

I Sahlins Marshall en Economy Lessons from the stone age of Jerry Mander

THE YASUNI MODEL

is short. The number of free days is superior to workdays. Dancing, fishing, playing, sleeping and celebrating ceremonies seem to occupy most of the". Instead of using up their productive potential, these communities decide to leave some fruit in the ground and let some animals live in peace. Meanwhile, the people enjoy wandering, sleeping, dancing, flirting and participating in ceremonies and relationships that make sense in these societies. What they do is consume the food at a feast. "General sharing and communal banquets are characteristic of all the hunting and fishing societies", says Freeman. Also, in these societies there are norms and sanctions established to avoid the personal accumulation or storing of resources and they have complex systems of social relationships of relatives that determine the channels that the resources will follow so that equanimity will prevail, faced with the threat that unequal access to valuable resources will mean2.

Itseemsthattheapproach is this: because food is abundant it is not necessary to store it; nature does the storing itself in plants and animals, and one should know where to find them. Therefore, even if storms or accidents deprive the community of food for days or weeks the consequences are rarely disastrous as they can always move to another place.

These peoples have thus freely chosen their nomadic condition, so if they store or transport food they could become tied to only one place or they would have to move a lot slower. Sahlins comments that in the case of hunters

2 José Manuel Naredo Universidad Politécnica de Madrid and gatherers "it's said that for them being rich is a burden". Their movement "quickly minimizes the satisfaction of property". The Barret Oil Company on the frontier with Peru, gives the indigenous peoples gifts such as combs, mirrors, blankets, necklaces, etc that is likely to make their mobility difficult and in the long term will propitiate their settlement – which is precisely what the oil companies want.

The Tagaeris and Taromenanes deserve of the name *Free Peoples*. They should be respected and the State should provide them with the necessary measures so that they are not threatened by the outside incursions of strangers.

The Interamerican Court of Human Rights has established precautionary measures to obligate the government of Ecuador to take the necessary action to eradicate the direct threats facing the Tagaeri and Taromenane: the extraction of cedar and the invasions of strangers on their lands. However, illegal loggers today operate within Tagaeri/Taromenane territory, and what is worse an environ-

mental licence was conceded to the Brazilian oil company, Petrobras, to extract oil in block 31 the heart of the Yasuni National Park - the ancestral territory of these people.

Once more, we are facing the disproportionate appetite of western civilization against a contented culture of abundance that until now was the guardian of one of the richest of the world's heritages.

* Natalia Bonilla, Acción Ecológica



IS THERE ECONOMIC SENSE IN LEAVING THE OIL UNDERGROUND?*

The Ecuadorian government has decided to evade oil exploration in the ITT area situated within the Yasuni National Park, by soliciting the international community for compensation of at least 50% of the profits it would receive if it exploited the site. How do we discover the amount of this compensation? What variables do we need to determine it?

First, we need to know what oil reserves exist. According to the most recent ITT studies, 842 million barrels of crude oil is likely to exist. However, the real magnitude of the reserves is not yet known. Second, there's the need to estimate the costs of production. Various methods exist to extract oil, each with different environmental impacts. The costs may differ at various times during the progress, as well as when the reserves begin to run out.

The profits obtained by exploiting the oil deposits depend mainly on the price of oil, which in the last few years has risen rapidly to almost \$100 a barrel. However, the prices could change and even fall in the next years as a result of the change in technology and in the mitigation of global warming. When a variable like the future price of oil is uncertain, one can consider different scenarios.

If the costs and prices were known, one could determine

the profit for each barrel of oil. It is of interest, also, to know the participation of the State in these earnings, and if any association with a foreign company has been considered to form a mixed company. In this way one could calculate the earnings that the State would receive in the future for the exploitation of the oil.

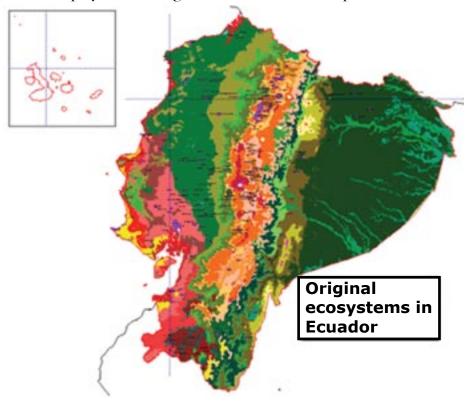
These values, however, would only be valid for a short time. In the case of the ITT fields, five years would be required to build the needed infrastructure and production would last 13 years before the declining phase would start. How can future income that will be received years from now be estimated using current values? To make this comparison, an annual discount rate is employed for each year in the future. This rate reflects the possibility of increasing current capital in the future (at a risk-free interest rate) as well as the inherent risks to different economic activities.

Various discount rates can be employed according to dif-

ferent criteria, and alternative scenarios can be constructed. The discount rates can vary between 6% and greater values that include risks, with the rates of earnings of the oil monopolies rising to annual values of 20%.

In this way, one could calculate the present value of the State's earnings if the oil were extracted. This activity, however, also implies grave environmental, social and cultural impacts that should be taken into account when analyzing the advantages and costs of oil extraction to society, although these effects - called externalities - don't reduce the monetary income of the State.

The externalities are numerous and affect nature as well as different social groups. The burning of petroleum produces Co_2 and worsens global warming, affecting the whole planet. The deforestation resulting from oil extraction activity generates the same effect and also drives species to extinction



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and causes the loss of biodiversity. There also exist negative impacts on indigenous cultures that dwell in the oil fields, the loss of alternative economic activities such as tourism and non-logging activities in the forest, as well as the harmful effects of oil spills, accidents, and the spread of toxins associated with oil production.

Many of these externalities are immeasurable and impossible to economically quantify. How much is the loss of a human life worth, the disappearance of an indigenous culture or the extinction of a species? In spite of this, it is important to at least estimate the economic value of some of the negative impacts of oil exploitation.. One could find out, for example, the negative cost of global warming from each ton of CO₂ emitted, or the cost of eliminating CO₂ from the at-

mosphere. One could also calculate the non-logging activities within the forest and the employment and incomes that would be lost by not developing activities such as eco-tourism. Criteria also exist, although imperfect, to estimate the loss of biodiversity, the damage of oil spills, and associated diseases.

If one looks for oil exploitation's advantages for society, the externalities of the income of the State should be deducted. One can also distinguish between the externalities that principally affect the local or national population and those that affect the entire planet such as CO₂ emissions and the loss of biodiversity.

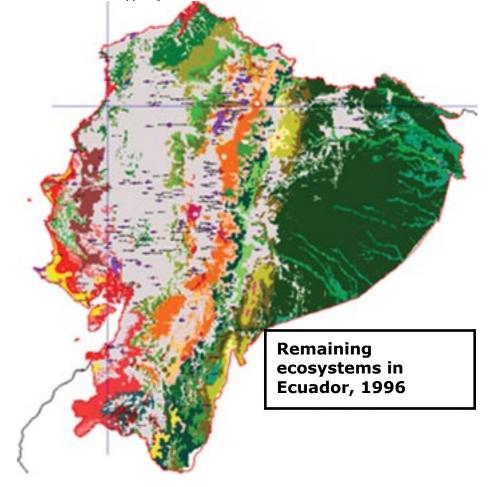
The future externalities should also be converted to their present value using a discount rate. This rate can be lower than the current economic value of the interest

rate if we value more the indefinite preservation of nature, biodiversity, and resources such as our water and climatic stability.

Initial estimates of costs, profit and externalities have been done for the ITT Block in Ecuador. It found that the present value of the State's earnings from oil exploitation reaches \$5.747 billion with an annual discount rate of 6%, and \$2.929 billion with an 11% discount rate. The externalities studied, which represent only part of the total, reach \$1.247 billion and the costs of the CO, emissions from ITT oil would equate to 375 million tons - equivalent to at least \$1.684 billion. The required compensation fund is estimated at approximately \$2 billion which covers 50% of the possible earnings Ecuador would receive from the exploitation of the oil.

These figures could change according to different hypotheses over future prices of oil, discount rates, and the application of new technology, among other variables.

We may conclude, therefore, that the option of keeping ITT oil underground would benefit the international community by reducing climate change, preserving biodiversity and supporting the subsistence of indigenous cultures - all at a lower cost than the damage the oil extraction would produce on a planetary scale. Ecuador would also benefit by obtaining compensation capital, whose interest would permit a sustainable future to be built.



* Carlos Larrea, Universidad Andina Simón Bolívar

THE HIDDEN COSTS OF PETROLEUM*

INSECURITY, AN OIL-BASED ECONOMY AND ECONOMIC OBSOLESCENCE

"A developing country can ill-afford to ignore oil resources, especially when various needs remain unsatisfied. Petroleum revenues provide the necessary capital to reach millennium targets or to accelerate economic growth. Furthermore, since petroleum production will cease to be profitable within a few years, it is best to extract the resource as quickly as possible to benefit from current high prices". Phrases such as these are repeated endlessly as an evident truth. But is it?

Like any other activity, the petroleum industry has is "costs" that do not, as a rule, appear in the impact indicators that measure the short-term performance of an extractive industry. These costs are generally related to trade-offs of which the ruling and ruled are usually unaware since the obvious effects are neither immediate nor direct. Such hidden costs include the "cost of a decision".

What are we talking about? Maintaining an economic activity involves creating social relationships and organizational structures to underpin operations. Therefore, continued petroleum extraction means continuing to promote the forms of production, consumption and life concomitant



with a petroleum society. Moreover, persisting with extractive activities implies increased financial costs and detrimental social effects: the results of market flaws inherent in the petroleum industry, one of which is the perseverance with monopolist structures and behavior. Compounding the problem is the tendency for extractive activities to encourage political decisions that, while benefiting a selected few under the guise of favoring the majority, appropriate public resources that could be used for alternative purposes, such as promoting smallscale agriculture.

So who should be concerned about this cost? Everyone, including those who are usually only concerned about short-term gain. Regardless of the possible disastrous environmental consequences, the insistence on petroleum extraction will undermine

the economic and technological strategic position of oil exporting countries, something that the developed countries are only too aware of.

Duringthelast five years, governments and companies in the G8 countries have noticeably increased their efforts to ensure "ecoindependence nomic and energy security" after year 2030. This purpose has recently been included, for example, in the Energy Policy Act 2005 and in the Advanced Energy Strategy (2006).

More specifically, the task of increasing a country's energy security means switching from oil consumption to consumption of other forms of energy. The transition to post carbon capitalism not only implies using new fuels. Constructing "low petroleum consumption" societies presupposes dismantling all those public and private activities that rely on, or are related to, petroleum extraction.

If the capitalist civilization is to be "decarbonized", the requisite public decisions will create conflict with those economic agents incapable of effortlessly and quickly adapting to the new conditions. However, although conflict brings few rewards for politicians, especially those seeking re election, governments and executives in the most developed countries have already embarked on the necessary measures since the consequence of

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inaction is even worse, with technological obsolescence and economic stagnation being two of the principal outcomes.

As the 21st century advances, those companies and families stubbornly clinging to petroleum will become increasingly vulnerable. Given the physical attributes of heavy crude, its extraction will cease to be economically viable. Although extraction will undoubtedly continue once its economic downturn begins, costs will inexorably rise inversely to the economic benefits.

All countries, even the most financially powerful, are subject to budget restraints. Therefore, even in times of abundance, disposable funds never stretch to satisfy all the demands, particularly those of declining industries. Within twenty years, oil production will only be able to continue if society is committed to maintaining and increasing the subsidies this activity will require. And if this option loses its economic rationale among the developed countries, what would be the logic for those countries overwhelmed with unsatisfied needs of continuing to produce oil?

The outlook for the private sector is broadly similar. Companies will find that the drop in demand for petroleum and its derivatives will become ever more marked, even for those countries that doggedly decide to stick with the black fuel. So oil executives will begin to question the logic of continuing to specialize in offering goods and services that are increasingly substitutable. It could be argued that though these trends in demand will become obvious and

evident by year 2020, the horizon is still a long way off.

In undeveloped countries, since companies and governments will of necessity incur costs and subsidies, revenues from petroleum activities will be insufficient to even cover the "Hartwick rule". That is, petroleum revenues invested in other, non petroleum activities will be insufficient to maintain long-term economic growth, and this excludes the net energy balance!

At the same time, every country will begin a race to shift the energy adjustment cost. In a world where globalization perpetuates inequalities between nations, the country that modifies its structures and economic-environmental process quickest will be best placed to "transfer" its losses to other countries. So, even though the United States will continue to rely on fossil fuels up to year 2030, the country's geo political business is being conducted with two objectives in mind. On the one hand, it is slowly converting to other forms of energy, while on the other hand it continues to maintain third world oil suppliers: those countries persevering with their old line of business, namely offering oil and raw materials to developed countries.

In the case of the undeveloped countries, their adherence to oil exploitation has caused additional damage: the deterioration of public policy conditions and capacities. In what way? For decades, as part of their dissertation aimed at fanning the public's expectations in the oil exporting counties, governments and multinational companies have insisted that crude will constitute the means whereby the

population's standard of living will increase. This, unfortunately, has not been the case. As has become abundantly clear in Ecuador, a selected few have dined on the fruits of the petroleum boom without managing any effective redistribution of the social wealth. Notwithstanding government declarations, this has been the norm since 1970. Can we expect any substantial changes in the future? Unlikely.

The "curse of natural resources" has turned out to be an expression that sums up the deployment of petroleum resources to finance economically unproductive expenses. The fiscal waste is, nevertheless, the tip of the iceberg. Leaving aside the financial squandering in economically undeveloped countries with precarious democracies, petroleum extraction has been a major cause of undermining the public good. As a consequence of oil, the business elites and multinational corporations have been able to gain control of the State, thereby guaranteeing appropriation of the common wealth. Through their own efforts, these interest groups have converted the State into an administrator, unequally distributing the advantages accrued from a natural resource. The outcome is that "black gold" has done very little for the welfare of the most needy.

By obstinately continuing with oil extraction, all those political economic factors that have contributed to the frailty of the under developed countries have been merely perpetuated, thereby weakening democracy and exacerbating inter generational and intra generational inequity.

During the 21st century, humanity will witness unprecedented transformations. Forms of social organization and economies, underpinned with energy derived from intensive use of fossils, will change. The "wealth of the nations" will depend on the way this transition is handled. In public policy terms, the transition to post petroleum societies presupposes the creation of processes whereby the local and multinational pressure groups - both public and private who are keen to see a continuance of the energy status quo, are taken out of the game.

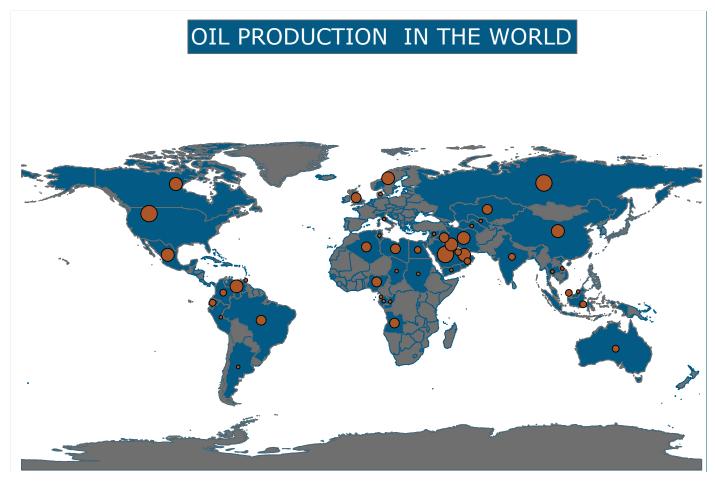
The current situation is analogous to the anti cyclical economic policies of the structural adjustment period. The developed countries would seem to have little interest in seeing the undeveloped countries adopting policies of prevention and long term planning, an attitude can be succinctly summed up with the phrase: "What's good for the North is no good for the South".

While the more industrialized countries outline their strategies to ensure their predominance in the "new globalization wave", the undeveloped countries continue to receive advice as to how to maintain their umbilical cord linked to the old carbonic capitalist system. And when they do it, the international financial institutions applaud their good practices!

Strategic systems are, first and foremost, socio technological systems. The transformation of social relationships is, then, invariably a slow process. The longer it takes to undertake a transition, the greater will be the energy gap between poor countries and

developed countries. Persevering with oil exploitation is just the first step our countries take on the road to misery, and energy insecurity is just one of the effects. In the absence of changes in decision taking processes and growth strategies based on petroleum, Ecuador will remain trapped in a reduced "political space" that encourages the reproduction of energy intensive economies but with inefficient energy usage. The environmental consequences of this ruse are obvious: increased environmental degradation. But who knows what the social consequences will be?

Various alternatives exist to counteract such irrationality. Although perhaps not the best option from the ecological perspective, setting up a "petroleum fund" could be a solution when faced



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with the obstinacy and indifference of the elites.

During the past few decades Norway, Canada, Alaska, Azerbaijan, Kazakhstan, Timor, Chad, Sao Tome, Principe and Papua New Guinea have implemented various institutional plans to avoid oil revenues being squandered through the short term policies of those who happen to hold power at that moment. The resulting "natural resource revenues" represent obligatory savings mechanisms whereby, in order to avoid current consumption of the common patrimony, governments are only permitted to use oil revenues in specific circumstances. Such may include a large balance of payments deficit, a prolonged

economic recession or a banking crisis.

In the undeveloped countries, given the scale of the current misery, any inter generational savings may pay no heed to the suffering of the current generation. The mechanism could, therefore, be modified to favor the majority - that is "swapping oil for life". In the absence of the coalition of forces required to suspend petroleum extraction, efforts should be undertaken to arrive at a social agreement whereby the last drops of this costly resource are used to finance public, health and education services.

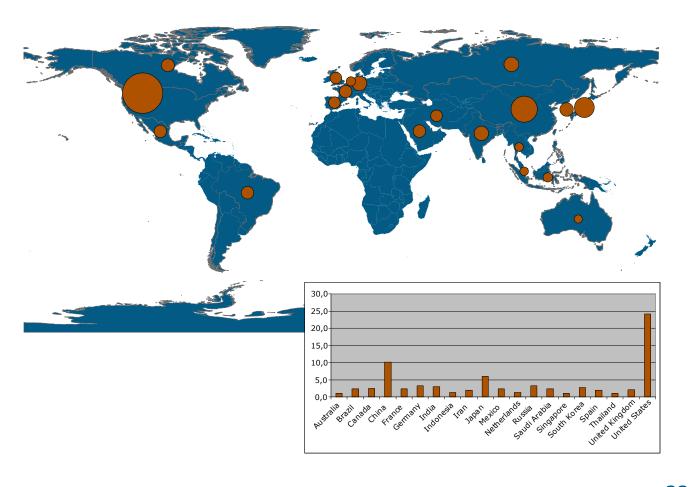
In this way, besides mapping out the transition towards a post carbon society and in addition

to preventing the private exploitation of the national patrimony, the final years of petroleum production could turn out to be the first years of a silent but powerful transformation: towards a population benefiting from improved welfare and increased capacities. With a healthy and educated population, capable of managing its own destiny, the undeveloped countries will create the basic conditions for compensating the next generation for their current addiction to petroleum.

* Juan Fernando Teran, Universidad Andina Simón Bolívar

Mapas Manuel Pallares

77% OF OIL CONSUMPTION IS CONCENTRATED IN 20 COUNTRIES



THE VALUE OF THE OIL IF LEFT UNDERGROUND*

On September 24, 2007 President Rafael Correa presented to the General Assembly of the United Nations a proposal of great and economic symbolic importance. Through Ecuador, in order to demonstrate its commitment in the fight against global warming, consigns to keep intact the oil reserves of ITT - the country's principal oil field located in the Yasuni region -in one of the richest biodiversity regions in the world. In compensation for not exploiting its riches, the country asks to be symbolically compensated by the international community through funds that would be equal to half of the market value of the oil.

The implications of the proposal may be assessed in two ways. First, the economic component, the generosity of Ecuador - a poor country with many needs in financial terms - in renouncing the resources that could benefit its own population in the short term, in favor of the well-being of the planet for future generations: for indigenous, Ecuadorians and non-Ecuadorians alike. Generosity expressed in the name of a people who sacrifice their own immediate interests if the gesture is echoed by people in other parts of the world. However, we must also consider that such generosity

Each leaf represents a century, it takes 5 million years to produce petroleum

The 2 leafs of paper represent the 2 centuries it will take mankind to consume it



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is not founded on the basis of economic calculations because it goes farther than that—which is clearly demonstrated in President Correa's words when he affirms that "the Ecuadorian proposal seeks to transform old conceptions of the economy and the concept of value." It is here where the other component is shown.

In effect, as Rafael Correa says, "It's about inaugurating a new economic logic for the 21st century, where one compensates the creation of value, not only the creation of merchandise." Or that it's necessary to consider all the "externalities" (everything socioeconomic) that are excluded when economists calculate the changing value of merchandise and fix their prices. So if the creation of value were effectively calculated in its totality, the irrational character of our mode of production would be exposed in all its fragility, also showing the absurdity of Western consumption. Along these lines, and to have an idea of the scope of the problem, it's worth the effort to evoke an insight of Richard Buckminster-Fuller: the attempt to know how much it "costs" nature to produce petroleum, the nonrenewable source of energy which when burned causes global warming.

In his book Critical Path, the U.S. author explains how he asked the distinguished geologist, François de Chadenèdes, to write him a guide differentiating how the technology of nature behaves in the exploitation of petroleum, and how the quantity of energy employed (such as heat and pressure) is translated into economic values, as well as the time spent for the photosynthesis of solar radiation necessary in the operation.

Chadenèdes accepted the challenge and a year later presented his study showing that if nature had to pay for the waste of pressure, heat and time needed for the exploitation of oil at the retail prices paid by us in the production of goods, the cost would be much more than a \$1 million per gallon. Nevertheless, according to Buckminster-Fuller, the majority of U.S. residents go to work in automobiles, probably using four gallons daily. In the words of the inventor: "Each one spending daily four million real dollars in terms of the physical-cosmic universe, without producing a single item in favor of the life of the physical universe that can be accredited in the countable metabolic system of time and energy that eternally governs the regulation of the universe."

So, with the calculations of Chadenèdes and the observations of Buckminster-Fuller brought to light, we should reflect upon Rafael Correa's proposal in not thinking of the creation of value as the creation of merchandise. If we at least glimpse the value of change, and if we comprehend the real scope of our conduct, maybe we would discover that by not exploiting the oil from Yasuni-ITT as economic value, the Ecuadorian government recognizes the existence of a greater value, whose consideration should be mentioned at the same time as the protection of the global climate, the well-being of humankind, the protection of the tropical forest, and - in the interests of the nation - the demand by the indigenous communities

in this region who don't want to see their ancestral territories devastated by the exploitation of the oilfields. Or maybe we would discover that this value doesn't have a price because although it could be calculated, it is immeasurable.

So, we need to make clear what President Rafael Correa has done in a bold move through a concrete proposal for his country - whose principal richness is precisely the oil - in the process of creating a vision for the future that no other current leader has the desire to imagine. Now it just remains to be seen if the international community will show sensitivity toward the majesty of little Ecuador.

* Laymert García Dos Santos

THE INVISIBLE IMPACTS*

Today, climate change is a secret to no one. When waters flood the cars of the first world, when droughts destroy Africa, when Katrina washed away New Orleans and the glaciers disappear, it is admitted that the consumption of fossil fuels has impacts.... but who speaks of the impacts of their production? Who in the silent agreements against hundreds and thousands of communities throughout the entire world where the extraction of oil is associated with the most grave violations of human rights? Climate change is evidence, but the hidden part of this iceberg that no one watches still remains to be seen.

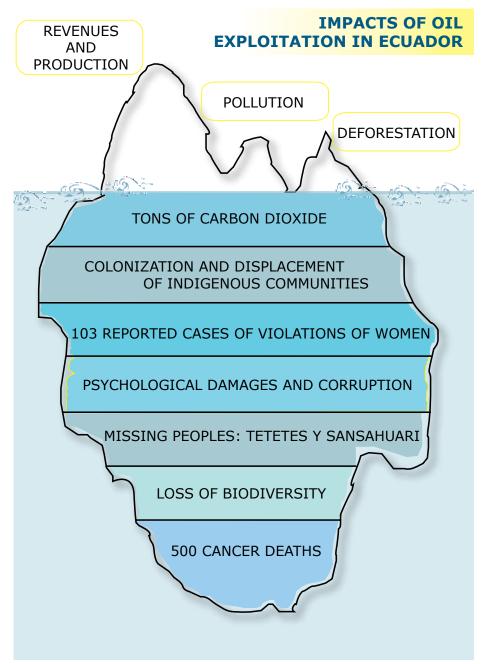
The petroleum companies in Ecuador receive large, 200,000 hectare land plots in the Amazon to extract the oil from, which they then take control of. The entrance into indigenous territories to pillage their resources has been a constant in the petroleum industry in Ecuador.

The teams of workers that have carried out the drilling not only deforested many hectares of land where its straight line was set against the organic nature of the rivers, the plant textures or the cleanliness of the sound. The detonation teams broke the silence, scared the fleeing animals and changed the fantasy of the ayahuasca to the vileness of the alcohol. The indigenous communities, forgotten by the states, were confronted by pe-

troleum companies in rituals of violence that history has hidden. Tens of indigenous women were raped, by groups of 5, 10 or 50. Without scruples and without being punished, after beating the husbands or poisoning them with alcohol, the petroleum companies carried out, their way, the new 'meeting' of the cultures.

In the style of neo-colonization, paths were opened that announced the progress of the petroleum companies that rose them to the altars of the fatherland in the military academies and justified them in the name of all the country, while in the gridded land plots the tractors pulled out 80% of the vegetation so the farmers and ancient cultures were expelled, while they exploited the work force of those who didn't have any more to lose except their lives, which weren't appreciated much either.

The opened paths continue to be controlled by the oil companies with their armed paramilitary



BEYOND THE VALUE

forces (almost always ex-militaries) that control spaces, movements, identities and intentions and break the country people's fences when technology tells where one should drill and reduce almost to nothing the sacrosanct base of the western civilization, the propriety, that when it doesn't belong to a corporation, it doesn't have the same right than if it sustained a community.

The wells being drilled, like a finger down the throat, vomit their repulsion into uncontrollable pools. Thousands of tons of toxic waste, from 3,000 to 8,000 barrels per well, with more than 1,500 wells drilled, were dispelled in pools that couldn't contain the expulsion and broke into the pristine rivers of the region. The latest technology for protected areas maintains that they are buried in the same platforms as the wells, covered without isolating the sand and rocks that drain into the rivers. Uranium, radon, radium, in unknown quantities.... heavy metals with sure toxicity, 50 meters from the houses of the country people that live their lives dying, oblivious to the risk.

Then the oil runs like blood through steel veins that has been filtered in stations that, like a liver, cleans it of unwanted chemicals and results in revolting gases burned upon leaving, hot and yellowish, of impossible continence. Methane gases that since the beginning have caused the greenhouse effect, sulfurous stenches that in the humid environment of the Amazon are transformed into sulfuric acid. that enters the lungs and begins to destroy them, and sprinkles the earth with acid, so that nothing flowers, to mark their territory like animals, and in these gases the danger is thousands of times underestimated and whose trails have been measured at more than 25 kilometers away, while the people live unknowingly 50 meters away.

The putrid urines, loaded with arsenic and saltier than the Dead Sea, are going farther and far-

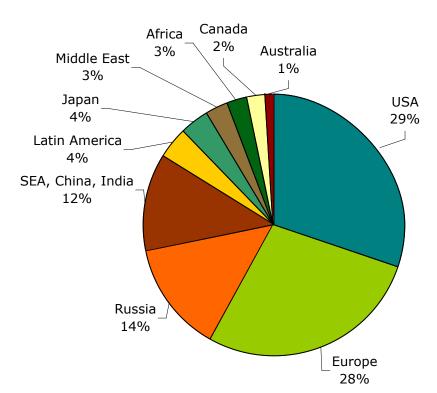
ther down the rivers, killing more and more. These same rivers that little by little, take in more death, and also end up taking in more shame, because the country people's protest ends by being flooded by the threat of military rifles. The fiery protests aren't valued, just the indignant humiliation to keep drinking and cooking, knowing that with each glass the death is making itself more present, so present at 50 meters away that 57% of the detected cases of cancer are of people living at this distance.

Nobody speaks of these uncontrollable hemorrhages, the steel veins subjected to hyperproduction that blow out at first sneeze, but are then blamed on the country people. Nobody pursues those who steal the tubes right under the noses of the military, letting the blood spill out. Nobody speaks of the enormous contracts that companies with names and last names obtain for cleaning the spills that they themselves provoke, but blame on the country people. Nobody speaks of the dead children at birth because their first breath was full of the plague brought by the oil spills.

No, the deaths in the name of development remain buried without a plaque. In Ecuador the machines don't stop when in the construction of the Paute hydroelectric plant the cement gulped down the workers. In Sucumbios and Orellana the deaths from the petroleum are also buried in oblivion, though there are more than 500, many more than have died in the last wars in the country. But when the deaths always fall on the same side, it isn't called war, it's called genocide.

* Acción Ecológica

Countries and regions contribution to global warming



GLOBAL WARMING*

Global warming isn't just a rise in temperature - it's a combination of physical, ecological and social changes, all related to each other and caused by centuries of exploitation of the earth's resources. In this neo-liberal era, the model of growth, globalization and over-consumption has reached a critical point. The result is the destruction of ecosystems and the impoverishment of billions of human beings in developing countries.

In 2007, the world experienced a series of grave climatic events that broke records - even compared to 2006, which itself had broken various records: extreme heat in many parts of Europe and torrential rainfall in other parts; flooding and snowfall in South Africa: floods in Asia: and landslides in China and Australia. Hurricane Gonu devastated southern Iran; crops were lost across the globe; and the glaciers thawed even more... However, although this is a global problem, there hasn't been a global effort in confronting these disasters.

A profound injustice exists in the relation between the causes and effects of climate change. Those countries enriched by processes of colonization and unequal trade have been those which have caused the problem after decades of excessive emission of greenhouse gases. The impoverished countries, on the other hand, are those most affected by climate



Cayambe Glacier, Ecuador 1982



Cayambe Glacier, Ecuador 1999



Cayambe Glacier, Ecuador 2005

BEYOND THE VALUE

change and those which are most impacted by hurricanes, floods, famine and disease. What is worse is that the so-called solutions to climate change assume new problems and threats.

Such disasters are more severe in the South because that is where the environment and ecological cycles are being dramatically altered by intensive resource extraction projects. To this is added the fact that the poorest populations are pushed toward high-risk zones, raising the likelihood for them to be victims of environmental catastrophes. The difference in impact between the North and South is measured by the number of deaths, displaced people, destruction of homes and other permanent destruction. In the last years, climatic disasters have cost the lives of some 3 billion people across the planet, harmed 800 million more and caused over \$23 billion worth of damage. Of all this, 90% occurred in developing countries.

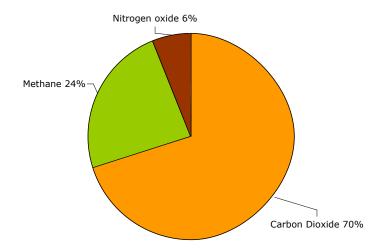
The concentration of carbon dioxide in the atmosphere at a global level is annually increasing at a rate of 3% instead of decreas-

ing by more than half as it should. Research indicates that in the ice age the concentration of carbon dioxide was at 280 ppm (parts per million) – it is currently at 382 ppm. It is thought that when it reaches 450 ppm, life as we know it will be threatened.

The co, emissions are fundamentally due to the burning of fossil fuels in transportation, industry and food production coupled with the destruction of forests. In 2006, every 24 hours 83,719 billion barrels of oil were consumed and 81.663 billion barrels of oil extracted. This equals 33,487 billion tons of emissions over the course of a year. And the most incredible aspect is that a large part of these fossil fuels were extracted or are projected to be extracted in zones of mature forest, which are proven to have a cooling effect on the atmosphere.

Climate change-brought on by the burning of fossil fuelsand the planet's capacity to cool itself with its cloud cover, is the new map of inequality and reveals the undercurrent of an unsustainable development model.

Greenhouse gases responsible for global warming



Mature forests, which have the most plants per unit area, maintain the equilibrium of the ecosystem and local temperatures by capturing water. The tropical forests absorb large quantities of solar radiation, induce the emergence of clouds, and reflect solar energy back towards outer space - a fundamental effect in the control of climatic warming. In the tropical forests, the presences of pseudomonas and areogenes in epiphytes accelerate the process of evapo-transpiration. These bacteria act as hydroscopic nuclei that condense the clouds. Epiphytes grow in mature forests and can raise the capacity of producing condensation nuclei by 500%.

Clouds are fundamental in filtering out solar rays, retaining the capacity to reflect solar radiation by up to 30%. This is known as the albedo effect. The solar rays that make it to earth are what determine the warming of the atmosphere.

The most immediate consequences of the destruction of the forests are changes in rain patterns. The ground, upon being exposed, dries out. This brings about a snowball effect that affects every connection within the ecosystem. The differences in temperature in forest zones that have been clearcut and those that have not is high. This is not just an issue of shade there can be a difference of as much as 15 degrees Celsius between the two.

Eliminating oil extraction operations in mature forests is the first measure in confronting climate change.

Esperanza Martínez, Oilwatch

OIL AND THE GENESIS OF THE CAPITALIST CIVILIZATION*

In this brief article we seek to outline some milestones of the history of oil exploration to understand the central place that oil has had in the constitution of modern capitalist civilization. Petroleum became the heart of social life when it was converted into the nucleus of production and consumption of the 20th century. Nowadays, this resource is defining the historical crossroads of the 21st century global world.

Before the modern and capitalist use of oil, it was used in diverse ways. The Greeks created a sort of flame thrower to burn Persian ships, giving it a similar use as the Hittite army had some years before. During the same period, in the Middle East, oil drains were ritual places for a lot of populations. In the same way, in the Americas many cultures used it; for example in Ecuador it was used to elaborate vessels and caulk the canoes in the Santa Elena peninsula and in North America several indigenous peoples used it for medicinal purposes.

However, oil acquired technological importance with the development of urban modern society that started to have more transportation and lighting needs, and by the second half of the 19th century, oil was responding with efficiency to these necessities. The combustion motor needed fuel

that was cheap and light and oil met this need. It became the core of the technical revolution when the train appeared followed by the automobile, plane and rocket.

The use of oil and the development of petrochemicals were, during the first three decades of the 20th century, tied to the automobile, marine and aeronautic industries. The development of the automobile industry was a process that mainly belonged to the United States' oil companies. The articulation of these areas of industry is fundamental for the creation of what we know now as production and consumption oil model. It is very important to say that this was driven from the beginning by private U.S. capital that marked the guidelines of the unstoppable advance of capitalist civilization throughout the world.

The technical-scientific system of this civilization had a sort of second industrial revolution driven by the World Wars. A geopolitical re-adaptation of the same system and its new requirements was needed. Wars made oil the principal element of what the civilization is today, introducing it little by little in diverse key areas of the new productive structure that was created.

In World War I, oil was necessary as fuel and also for the production of natural rubber and later on to make synthetic rubber. A technological development linked to oil had begun and it strongly grew in the second half of the 1930s. This is when the second great phase of this story starts with the discovery of plastics from petrochemical origins.

World War II heralded oil globalisation. Chemical industries and the armies needed oil not only for their production of explosives and arms but also other materials such as plastics and synthetic fibers that were quickly employed across the board, such as nylon, PVC and polyethylene. The use of plastic expanded to pipes, hoses, discs, coating for floors, construction of appliances and synthetic installations due to its resistance to chemical products. Plastic was also used for different domestic products as well as for clothing and military accessories such as parachutes.

When World War II was over, the devastated world was rebuilt by oil. The United States industries were less affected by war compared to the European and Soviet ones, and was able to alter its military industry into one directed to consumers. Therefore, plastics and cars expanded throughout the world market and the growing urban life.

The economic boom of the United States that happened after the war allowed it to build an empire across the world market that was materially supported by the oil model of the industry and in the "way of life" linked to it. The use of the car - the main product that consumes oil - electric appliances, nylon clothes and plastic articles were shaping a new type of consumption, which in turn shaped the content of social reproduction that is known as the American way of life.

Centered on oil, all this material and ideological richness was intended to Americanize the world. The technologies that were developed pushed the expan-

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sion of oil through other branches of production, such as the massive agricultural revolution – a true technological recycling of the war industry – used oil as its main raw material. Oil was used at practically every stage of the new agroindustry, from the fuel fot the machines to the synthetic components of new pesticides and fertilizers.

The Soviet Union and other countries never achieved the same consumption of products derived from oil as the United States, although oil was equally fundamental to their economies.

The United States hegemony and the developed countries that after the war imitated its oil industry, generated in the Third World countries a kind of association that little by little started to claim more benefits from this richness.

These oil producing countries in the 1970s, took advantage of the exhaustion of oil reserves in the United States to reduce their oil production and nationalize their oil industries (this process had started in past decades, but was slower).

It was not the time when oil could be related to progress anymore. In the oil producing countries, dependency on this material to obtain higher incomes brought severe crisis during the 1980s due to external debt.

In the same way, starting in the 1970s, the crisis that the environment is facing because of the burning of oil is impossible to hide. However, the oil industry did not pay attention to this issue and kept growing. In this period the microelectronics industry got stronger and the use of comput-

ers increased. This could not have happened without the plastics on which many such industries depend.

Oil products were rapidly increasing in a society that was each day more "petrolized". Oil had become an addiction of capitalist production and way of life. This addiction has caused wars, global warming and health crisis (eg. cancer caused by the addition of synthetic ingredients in food).

Due to the problems that oil implied, some technological alternatives have been proposed, but these cannot diminish the hegemonic power of the oil model. The strength of the automobile industry is growing every year, resulting in an increased demand for energy and the constant development of plastics. In addition, alternative energy sources are controlled by the same oil capital that does not have a real interest for these alternatives to become effective until the planet's oil reserves are exhausted.

Oil, by the quantity of energy that it has provided for productive processes, the quantity of exchange of labour force, the quantity of its products, and the type of consumption that was generated by it, has constituted our contemporary world.

The materialist capitalist civilization that Braudel talked about, continued to grow from the second half of the 19th century to today in the development of the oil civilization. In this period, the global body of the capitalist society has developed and had its genesis when oil became its vital energy. Later on in the 20th century it became its social body, converting itself into synthetic material and the

decisive element of the production and consumption of Americanized modernity.

The history of oil is connected to the genesis of the most complex human civilization that has ever existed and that has integrated the entire globe to its logic. Currently oil still defines the technical and geopolitical metabolism of our social body and still places our survival on our planet in question.

Now that the chronic sickness of the global social body is evident because of its addiction to oil, we should ask if we want to continue this blind dynamic of our society that brought us to this situation, where private accumulation of capital and its representatives – the hegemonic countries and the big companies – dictate our destiny as humanity.

* Omar Bonilla y Pavel Veraza

GLOBAL END OF OIL*

SIMPLE LESSONS ARE NOT NECESSARILY EASY TO LEARN. FOR EXAMPLE: OIL IS A NON-RENEWABLE AND LIMITED RESOURCE¹

Global end of oil

The world has finally woken up to the reality of climate change. Harsh weather events have shown that not even the most developed countries of this world can fully withstand these freak weather events. The world is increasingly seeing floods, hurricanes, tornadoes, drought and wild fires of huge proportions. With these events, citizens of the world are recording increased incidents of disease, poverty, losses and untold hardships. And because the climate crisis also manifests in restriction of access to resources, incidents of conflicts are on the increase too.

It is generally believed that the world will soon witness a peak in oil production and this will coincide with the world having used more than half of all currently proven reserves². Some experts estimate that Nigeria reached her own peak oil level two years ago. Already Nigeria is saying that production here can be increased from the current reported 2.5 million barrels a day to 5.2 million barrels a day by the year

I Floegel, Mark, Half a Tank: The Impending Arrival of Peak Oil (Washington: Multinational Monitor, January-February 2007) p. 15

Multinational Monitor, The End of Oil (editorial), (Washington: January/February 2007 edition). P. 6. This issue of the Multinational Monitor illustrates, among others, that the "Corporate control of energy policy and energy resources, especially in the United States, the country that consumes more energy than any other, is the single greatest obstacle to slow and hopefully reverse the world's headlong rush to disaster."

2030 so as to meet the oil demands of the USA as access to Middle East crude may get more difficult. It was recently reported that by early 2007 Nigeria became the third largest supplier of crude oil to the United States, after Canada and Mexico³. To underscore the strategic importance, the USA is setting up a military command in the Gulf of Guinea possibly to ensure that nothing disturbs the flow of oil from the region. This command will come into full operation as a unified command by October 2008⁴.

Petroleum geologists think that this may be wishful thinking as Nigeria's proven reserves and geological data do not justify the optimism of heightened production volumes in Nigeria⁵. The lesson pressing to be grasped here is that there is a physical barrier or limit to how much a nation can kowtow to the demands of another nation. The almost desperate move by nations to find crude oil is leading to audacious activities as well as innovations in the extractive fields. Recently we heard of Russia claiming ownership of the North Pole by planting a flag in the sea bed there, 4.2 km below the surface!6 Claiming ownership by flag planting is an emblem of gaining victory through warfare. We may soon expect to hear that since the USA planted a flag on the moon in 1969, they are the owners of the celestial body.

3 Akande, Laolu, Nigeria is third largest oil exporter to U.S., (Lagos: The Guardian, 13 June 2007). http://www.guardiannewsngr.com/news/article02

4 US Africa Command Reaches Initial Operating Capability, Press Release 08-001, October 1, 2007. See http://www.africom.mil/

5 Wysham, Daphne, ibid

6 BBC: Russia plants flag under N Pole, http://news.bbc.co.uk/2/hi/europe/6927395.stm

More and more exploratory efforts are being focussed on offshore locations as the onshore and other easily accessible locations either get less productive or are not available. Frontier exploration has pushed the Norwegian state oil corporation into new fields in the Barents Sea, for example. The field whose name translates as Snow White in English is planned to have no surface installations and will thus have everything sited on the continental shelf. The production facilities are all located on the seabed and the oil is extracted by remote control through underwater pipelines. An analyst has this to say of this effort, "the Snow White fields shows, the days of a floating oil platform are coming to an end. In time, advances in technology may even allow for exploration beneath the polar ice. However, the ecological risks are tremendous being able to drill under the ice does not mean that companies can clean up an oil spill there." The thing to note here is that in no distant time, communities who claim ownership of crude oil because they host oil installations may find no installations at all on their land or waters while the oil flows from beneath their feet and translates into unseen billions of dollars and only show up through oil spills that cannot be hidden. Critical analysis is required on this with regard to the Ogoni situation, for example, where Shell has been a persona non grata since 1993.

Profiting from crisis: the economics of war

The path of crude oil development has been strewn with skeletons and soaked in human blood across the world. The ongo-

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ing case in Nigeria is a glaring example. The case of Angola is still fresh in memory. In 1999, as the first barrels of crude oil were shipped from Sudan, so did the war between government forces and those of the Sudanese People's Liberation Army escalate. When we turn our eyes to the Middle East we see the raw situation of war waged for profit and resource appropriation and control.

The issue of the profitability of disasters has been expertly exposed by Naomi Klein in her new book. She states that "With resource scarcity and climate change providing a steadily increasing flow of new disasters, responding to emergencies is simply too hot an emerging market to be left to the nonprofits why should UNICEF rebuild schools when it can be done by Bechtel, one of the largest engineering firms in the USA.?" She also asks the question, "Why deploy UN peacekeepers to Darfur when private security companies like Blackwater are looking for new clients?"7 In a 2005 article with the title Allure of the Blank State⁸, she articulated the advancement of preventive war as normative behaviour by the government of President George W. Bush. In that article, Klein recorded that the US Secretary of State was said to have 'horrified many by describing the tsunami as a "wonderful opportunity" that "has paid great dividends for us." The idea is that when a disaster, whether natural or manmade occurs, it gives the wielders of power the opportunity to dispossess the poor of their heritage and appropriate them for their own purposes.

7 Klein, Naomi, The Shock Doctrine, (London: Penguin Books, 2007) p. 15 8 Klein, Naomi, Allure of the Blank State (London: The Guardian, Monday April 18, 2005). A longer version of the article was published in The Nation, www. thenation.com Thus, when the tsunami wreaked havoc on the coastal settlements of Indonesia, it offered a clean slate for speculators to clear the 'debris' and erect luxury resorts where the homes and businesses of people had stood before the disaster. Could this become the fate of the Niger Delta? We have seen entire communities razed to the ground. An example is Odi which was levelled in November 1999 and left over 2800 citizens dead. Recently the waterfront of Port Harcourt, Nigeria, largely inhabited from the politically oppressed class was demolished possibly to make it possible for the prime land to be grabbed by those who wield power in the state. Happily this atrocious move has now been halted.

It should be instructive that at a time when oil fields have become hotbeds of conflicts and insurgency, that is precisely when oil companies are making record breaking profits. This boom is also enjoyed by those involved in weapons trade, deconstruction/reconstruction, private soldiers and the like. In the month of October 2006 when the highest Iraqi civilian casualties of 3,709 were recorded, a market analyst stated that Halliburton's quarterly profit was "better than expected." By the last quarter of 2006 this company had enjoyed an inflow of up to \$20 billion from the Iraqi war alone.

The massive transfer of public funds into private and corporations hands is best described as disaster capitalism. Writing on the Niger Delta situation, a researcher declared that, "the low level of accountability is also attributed to weak electoral administration and process, and a pervasive undemocratic political culture which not only serves the interest of the po-

litical class but also encourages the personalization of state resources by those who wield political power, a bureaucratic culture of secrecy and impunity, which nurtures an already entrenched abuse of power by the political and administrative class."9

Its manifestation is ubiquitous and its pinch is directly felt by the peoples of the Niger Delta who have become nothing short of pawns on the chessboards of political manipulators. The manifestations are seen on the boardrooms of corporations, shareholder dividends, and in the proverbial excess crude funds in the case of Nigeria. The 'excess crude' euphemism is a concept by which the political executives in Nigeria purposely base revenue projections on estimates far below the market value of crude oil in order not to be caught off guard by a slump in price, and probably also to skim off the 'excess' funds that must come where there are positive differentials, as always is the case. With current price of oil pushing beyond \$90 per barrel, and with the current Nigerian national budget based on a \$40 per barrel benchmark, political actors at various levels are already angling to share the 'windfall' which often have been seen as nothing but the 'loot', utilized without accountability. We note that for 2005 and 2006 budgets the benchmark was \$30/barrel of crude oil and for 2008 the proposal stands at \$53/barrel¹⁰.

* Nnimmo Bassey, Era

⁹ Jinadu, L. Adele, et al, Introduction: Scope, Method and Context, Democracy, Oil and Politics in the Niger Delta: Linking Citizens' Perceptions and Policy Reform (Port Harcourt: Centre for Advanced Social Science, 2007) p.16

10 Adisa, Taiwo, 2008 budget'll

¹⁰ Adisa, Taiwo, 2008 budget'll be people-focused – Sen. Omisore, (Ibadan: Nigerian Tribune, Saturday 6th Oct. 2007). http://www.tribune.com.ng/06102007/politics_2.html

TWENTIETH CENTURY WARS*

Wars during the twentieth century and the beginning of the twenty-first have been fed by oil and in the majority of the cases oil has been the main cause for the conflict.

AFRICA

In Angola, one of Africa's main oil producers, control of petroleum resources have been always in the hands of Angola's National Liberation Popular Movement (MPLA) now in power. The perpetuation of the civil war in this country was clearly related to the need to control oil reserves, and for this reason the United States financed the UNITA guerrillas, who controled the diamond mines and were enemies of the MPLA. The main military objectives of the UNITA were the petroleum producing areas (which represented 90% of the government's budget). Currently, all the important oil companies in the world have investments in Angola.

The Algerian war of liberation, one of the bloodiest of the continent's wars, which lasted almost a decade and had, as its underlining cause, the nation's rich oil deposits, which up to their nationalization in 1968 were exploited by French oil companies.

Sudan's civil war is also stained with oil. In September 1999, Sudan became Africa's new major oil exporter.

Other conflicts in Africa related to oil include the recent war in Africa's Horn and the dis-

pute for the Bioko islands in Equatorial Guinea

LATIN-AMERICA

At least two of the last century's wars were directly related to oil: the Chaco war in which Paraguay lost a portion of it's territory with important oil deposits, and the Ecuador-Peru war.

During the 1980's the civil war that overtook Guatemala was focused on the Ixcan area where currently oil reserves are being explored after the indigenous population was forcefully displaced.

More recently, there exists the Colombia Plan, which has among other objectives the control of Colombia's oil production. The Colombia Plan has been a focus in the Putumayo region, where although oil production is not very important, new research indicates that the reserves could be bigger than was known.

The problem in the region is the continuous sabotage of oil infrastructure at the hands of irregular armies in the country, which for the oil industry means important financial losses. With the Andean Initiative, the United States of America seeks to control the five Andean-Amazon countries oil production, all of which are gas and oil producers.

The Chiapas conflict in Mexico has a direct link to the voracity of the United States to drill oil wells in the region which seems to contain great wealth.

ASIA

While the United States lead a war against the people of

Vietnam, Mobil Corporation carried out off-shore prospecting in what they used to call "South Vietnam". During the 1990s Mobil won an operation license for the same fields where three decades before Blue Dragon operated (280 km from the Mekong Delta).

The colonialist occupation by Indonesia of East Timor, supported by the United States and Australia, was in part due to the presence of important hydrocarbon reserves in the Timor Sea, as well as a dispute over the Spratley Islands, a series of small islands with oil reserves over which China, Vietnam, the Philippines, Indonesia, Malaysia, and Brunei claim rights.

EASTERN EUROPE

The war in Chechnya was of great importance for the United States and Europe to break Russian hegemony over crude oil transport. Although Chechnya's reserves are not that important, the area is crucial for the pipeline that funnels crude oil from the Caspian Sea. The pipeline allows Russia to maintain control over the oil and its price, which uses this as a mechanism of political control.

In the former Yugoslavia the conflicts had to do with the control of crude oil transport from the Middle East and Caspian deposits to the Mediterranean Sea and the Black Sea.

Azerbaijan, Kazakhstan, Turkmenistan and Uzbekistan together have a proven reserve of 115 billion barrels of crude oil and 11 quintillion cubic meters of gas. Up until now Russia has retained control of the region's crude oil trans-

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fer, which the United States wants to snatch.

The importance of the area lies in the fact that the United States considers Caspian crude could offset the control held by the OPEC countries in establishing crude oil prices. This role was previously played by North Sea oil reserves, but they are inferior to the Caspian region and the United States considers that it is far more

feasible to control Caspian Sea production because of the institutional weakness of the countries in the region.

MIDDLE EAST

There are over 40,000 known oil deposits in the world, but only 40 representing over 5 billion barrels of oil that contain more than half of the world's oil reserves.

From these 40 giant oil deposits, 26 are in the Persian Gulf, which is the main reason this region is so important for the United States, the world's bigger oil consumer.

The 1991 Gulf War in Iraq enabled Western powers led by the United States to destabilize OPEC and exert control over oil prices, creating a new correlation of forces in favor of the United States in the area where the most important oil reserves in the world are found. This oil war directly caused the death of 1.5 million people with an additional 5,000 Iraqi children dead from malnutrition each month the US and its allies imposed their embargo on Iraq.

The Afghan conflict is linked to the control of transport of the region's abundant oil resources, both in the Caspian as well as the Persian Gulf.

The pipeline through Afghanistan that brings Central Asian oil to Western markets, represents a less expensive alternative in comparison to other routes, but the main problem has been the Taliban's presence, which although raised to power by the CIA when it lead a war against a pro-Soviet government, soon became the enemy.

It is believed that Afghanistan holds important reserves. In its time the USSR calculated that the country could have natural gas reserves in the order of the 0.14 quintillion cubic meters.

The Iraq war - sustained by the weapons of mass destruction argument-which were never found, had as an objective control over the production of the enormous oil reserves of the country. The costs of the war as well as the dead have yet to be counted.

Elizabeth Bravo, Oilwatch

What do oil companies really do?

- 1.To finance massacres, conflicts and inter-ethnic wars, low intensity warfare originated in the oil exploitation;
- 2.To expel populations from oil areas (from families to massive expulsions), with colonizing, "relocation", "transmigration" programs sponsored by the multi-lateral banking system;
- 3.To alter the life of women: through heavier work-loads, sexual abuses, violence;
- 4.To alter the life of children: using their workforce for decontamination;
 - 5.To destroy cultural diversity;
- 6.To diminish the safety of those who live near oil facilities;
- 7.To destroy the base for self sufficiency of communities and people;
- 8.To confiscate land from the peasants and indigenous people;
 - 9.To cause impoverishment and inflation;
- 10.To create the conditions which proliferate a number of sexually transmitted and tropical diseases.
- 11.To generate environmental racism;
- 12.To cause the extinction of natural species;
- 13. To alter and destroy the life of rivers and forest;
- 14.To accumulate waste, some of which is toxic;
- 15.To trigger an increase of illnesses such as cancer and leukemia;
- 16.To confiscate other resources in their concessions such as water, wood, sand and other resources;
- 17.To induce and provoke an increase in prostitution and crime;
- 18.To cause internal conflicts among the communities.

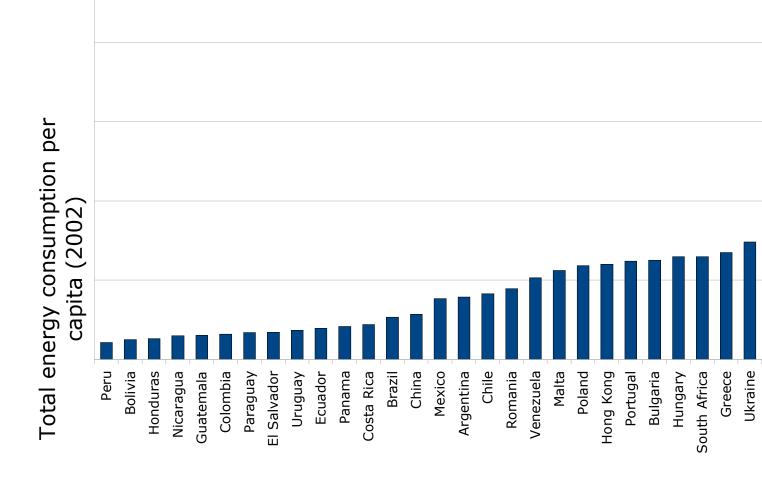
TECHNO-FIXES*

There's a wonderful story about a group of men trying to retrieve a car that had rolled off a ramp into a harbor and was almost completely submerged. The first thing the men did was to find a truck and some ropes to try to pull the car out of the harbor. At first, everything went well. But just as the car's windows slowly began to break the surface, the truck's wheels started spinning and ultimately it slipped backwards down the ramp and joined the car in the water. The growing number of interested male spectators then huddled to try to figure out

what to do next. After some discussion, they decided to find a second, larger truck and hook it up to the first truck to try to pull it out. first it looked like this might succeed. But then the second truck's wheels also slipped on the ramp, and it too was dragged down into the harbor. After a lively discussion among the evergrowing crowd of men on the quayside, each of whom now had a new theory to contribute about how to fix the problem, a third truck was found to try to pull the second truck out. Unfortunately, it met the same fate and wound up in the water. By now, the crowd of men gathered around was quite

large. Much technical advice was excitedly exchanged, many arms were waved, and many serious theories were advanced. At the end of the debate a fourth, even huger truck was hooked up to the last victim. You can guess the rest. At the end of the day five motor vehicles were lying in the harbor, only their roofs showing, with the original car no closer to being rescued.

Techno-fixes are a little like that. A small group in society insists on repeatedly using a narrow set of technical tools to try to solve a complicated problem no matter how often it fails. Whether because of its political or financial interests, or just because of its limited back-



TECHNO-FIXES

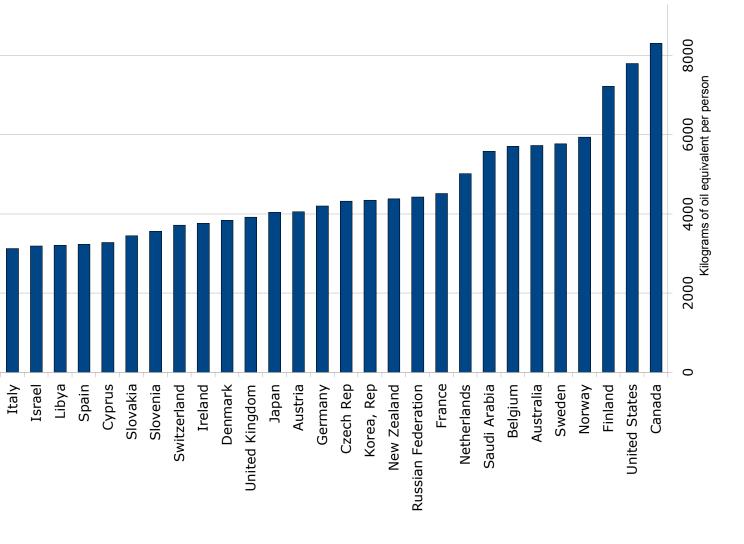
ground, the group resists learning from history and analyzing the full complexity of the problem and the resources available. It is the one holding the hammer, so to it, everything looks like a nail waiting to be pounded. The result is a cascade of further problems - and further fixes - which exacerbate and sometimes even overwhelm the original problem. If you think the example of the drowned trucks is funny, consider the example of the World Bank, which has failed for 60 years to advance the objective it was supposedly set up to pursue - relieving poverty - yet keeps applying essentially the same approach.

Climate politics today is full of techno-fixes, because few people in government or industry want to address the problem at its political and social roots, especially the overuse and unequal use of fos-

sil fuels. So we get a lot of talk about biofuels, geological carbon storage, ocean fertilization, geneticallymodified tree plantations, spraying the atmosphere with reflective particles, cost-benefit analysis, carbon trading.

Each of these techno-fixes creates a chain of new problems without solving the original one. For example, doing a cost-benefit analysis of whether we should do something about global warming brings about new dangers because, among other things, it treats climate change as linear rather than nonlinear and reduces the ignorance and uncertainties that characterize climate science to calculable "probabilities". Similarly, the trade in carbon credits created by carbon-"saving" projects requires an accounting process that itself has counterproductive effects. For instance, to quantify a project's contribution to lowering greenhouse gas levels, you have to posit a single scenario describing "what would have happened" without it. By confusing prediction with decision-making, this simply begs the question of what can and cannot be done about climate change. It replaces the discussion of structural change in industrialized societies with endless scholastic disputation among consultants over meaningless numbers. Neoliberalism, narrow professionalism, elitism and class politics are combining to produce technofixes that can only create new prob-

* Larry Lohmann (Durban Group)



CUTTING EDGE TECHNOLOGY*

Whenever concessions are granted to start oil exploration or exploitation in environmentally fragile areas, the governments who give the licence, or the companies which will operate in this area promise to use high tech to prevent damage to the environment. The following article will focus on some methods which, according to oil companies, allow for cleaner production.

Exploration

Seismic exploration is a geophysical exploration method that uses the principles of seismology to estimate the properties of the earth's subsurface from reflected seismic waves. The method requires a controlled seismic source (eg. underground dynamite explosion) and a number of receivers which record the time it takes for a reflected wave to arrive at a receiver. Using this data, it is possible to estimate the depth and the features that generated the reflection.

To position this seismic source and the receivers, and to connect the cables, it is necessary to clear lines of a few meters wide through forests. Originally, two-dimensional exploration was done, which meant that just one line needed to be cleared to obtain results. Since 1990, 3D exploration has become more common, which means a grid of lines needs to be cleared, typically every few hundred meters.

To interpret the vast amount of data of seismic tests, powerful computer processing capacity is needed and because this processing capacity is becoming ever cheaper and faster, seismic exploration can now be done more accurately: the grid of lines is made denser and larger, and 4D exploration (the evolution of 3D exploration data over time) is becoming more common. This development has meant a negative impact on the environment.

Wireless seismic exploration may be more environmentally friendly. The method is the same as traditional "wired" seismic testing, but the battery operated receivers transmit their results using wifi technology to a base station. The fact that no data transmission or power cables are needed means that exploration can be done without clearing lines through the forest

This method is fast becoming more common, not because of the reduced environmental impact but rather because it is faster and cheaper than the traditional line clearing and also because it opens the possibility to make the grid even denser.

The downside of this evolution is that because exploration can be done with less impact, governments are more likely to grant exploration licences for fragile areas.

2. Drilling

In the old days every oil well used to have its own drilling platform, access road, pipeline, power generating plant, waste dump etc. Directional drilling, whereby the drillers can steer the

drill bit remotely in three dimensions has changed this. Directional drilling has existed almost 100 years, but it is only recently that drillers have obtained the technology to almost fully control and automate the process.

Directional, extended-reach drilling is expensive, but has many advantages:

- Up to 40 oil wells can be drilled from one platform, reducing environmental impact
- Directional drilling has been used to tap wells up to rokm away from the platform
- Horizontal drilling can give higher yield

Not only are less platforms needed, platforms have also reduced in size over the years.

In Alaska for example, a drilling platform that would have been 27 hectares in 1977 can be less than 3.6 hectares today for the same number of wells.

While these techniques reduce the amount of direct impact such as deforestation of oil exploitation areas, indirect impact is a far greater threat to these areas. Traditional onshore oil exploitation requires access roads to drilling platforms and these roads facilitate the destruction of the environment. Shortly after the oil companies exploit an area, logging or agro business move in to exploit the forest or the land.

This can be avoided by using "offshore" techniques for onshore drilling, eg. no access roads, transportation via helicopters, no permanent camps in protected areas, no maintenance roads along pipelines but trains etc. It is estimated that this method is 40% more expensive than traditional exploitation.

TECHNO-FIXES

Transportation: p ipelines and maritime transportation

The bulk of all oil transported worldwide (62%) is using maritime transportation. Oil tankers have a bad reputation, but the amount of accidents and the size of the oil spills are steadily reducing, despite the increase in the quantity of oil carried by sea.

Some examples of technology used to reduce the risks of oil transported overseas:

- Inert gas systems: a layer of inert gas is pumped into the oil tanks to reduce the chance of explosion.
- Equipment duplication: all steering and navigation equipment must be duplicated.
- Double hull tankers: the double hull requirement was adapted in 1992, to phase out single hull tankers in 30 years time. Following the accident of the Erika in 1999, the phaseout program was accelerated to 2005 / 2010 depending on the type of tanker.
- Improved navigation techniques, satellite tracking systems, stricter regulations and training for crews...

While technology reduces the risks of accidents with oil tankers, accidents still happen and are often caused by human error (1989, a drunk captain on the Exxon Valdez), negligence (2007, river tanker Volganeft used on the Black Sea) or even intent (2002, bombing of the double hulled tanker Limburg in Yemen).

The oil industry never takes responsibility for accidents with oil tankers and also the liability of the ship-owner is very limited.

Clean up costs are paid for by the International Oil Pollution Compensation funds: funds financed by the consumers.

Incidents with pipelines generally receive less press attention then oil tankers, probably because the incidents are smaller, but also much more frequent. In the 1999 "Oil spill intelligence report" 257 incidents are recorded: only 11 of them were with tankers, accounting for about one fifth of the oil spilled, 197 incidents were related to pipelines and fixed facilities, accounting for more then three quarters of the oil spilled.

Technological solutions can be used to maintain and monitor pipelines so as to reduce the chances of spills:

• Intelligent "pigs":

"Pigs" are the name given to devices that are placed into the pipeline and travel throughout the length of the pipeline driven by product flow. Intelligent pigs are often used to check the pipeline for defects: to check the welding, to check the material thickness or corrosion, leak or crack detection, photographic inspection.

• SCADA:

Most pipelines nowadays are equipped with Supervisory Control and Data Acquisition (SCADA) systems. A typical SCADA system includes one host system, the software and hardware installed in the central control facility, and many field systems installed at significant points in the pipeline.

All data is collected in the central control facility where operators can easily monitor the state of the pipeline. They are often assisted by "Computational pipeline monitoring", software which will interpret all the parameters of the SCADA system, and sound an alarm

or shut down pumps when irregularities are recorded.

The Camisea pipeline in Peru runs through pristine rainforest. There was strong opposition to this project from environmental groups and the project developers promised to "use extreme care in the planning and execution of the project". The pipeline became operational in 2004 and during its first 18 months of operation the pipeline ruptured 5 times.

According to an incident report by the Inter American Development Bank (the project financier) the causes of the spills were geological instability and some bad welds. While the pipeline was built to withstand the required pressure, geological instability, seismic events and scouring of water was hardly taken into account during the production process. Besides that, the pipeline's SCADA system only detected 4 out of the 5 ruptures.

In 2006 in Alaska, a BP pipeline ruptured and released almost 1 million litres of crude onto the Tundra. Despite SCADA systems, it took days before oil workers could find the leak.

BP is now facing criminal charges for neglecting maintenance work on the pipeline. Apparently, BP has been doing inadequate maintenance for 15 years. It had been over 2 years since an intelligent pig was used to check the state of the pipeline.

One BP employee who repeatedly warned management a few years ago that cost reductions in maintenance would lead to accidents was fired by BP. The oil company also hired, to no avail, a security company to try to discredit the ex-employee.

Piet Boedt, Oilwatch

WASTE MANAGEMENT*

Where there's oil, there's pollution. Technology may reduce the risks of adverse effects on the environment of oil activities. But it is also clear that these risks are only reduced to the extend that oilcompanies deem it necessary: they make a cost – benefit analysis whereby the environment is usually not valued very high. The corporate responsibility does not go beyond the bottom line.

While some environmental improvements have been made, they are often mitigated through increased oil production, and are often used as arguments to start operations in fragile areas.

Waste produced during drilling and production can be classified in drilling waste, produced water and atmospheric emissions.

Drilling waste is the mud and water polluted by chemical drilling fluids which are added and come up during the drilling process. This amount of waste varies between 1000 and 5000 m3 per well.

In offshore operations, this waste used to be dumped in the sea, in onshore operations, the waste was often disposed of in pools next to the drilling platform.

Environmental concerns (and regulations) led to better disposal techniques.

The options are:

- Using less toxic alternatives as drilling fluids
- Transportation of the waste to a treatment plant
- Re-injection into a disposal well

The problem with reinjection is that geological conditions must be suitable to find a good disposal well where there is no chance of break-out of the waste to the surface or to potable water sources.

In Alaska, 1987, BP was one of the first companies to use disposal wells to dump any kind of waste, within a few years BP had a serious environmental problem on its hands, as poisonous wastes

began to leach out of the pits and spread across the tundra on top of the permafrost.

Produced water is the collection of formation water and injection water which is pumped up together with the oil. This water is typically contaminated with oil, inorganic salts and other sometimes radioactive chemicals . The ratio produced water to oil varies, but as the oil well is depleted, the water becomes the prevailing phase. Produced water is by far the biggest waste during oil production, it is estimated that 250 million barrels of water is produced worldwide each day.

Produced water used to be (and sometimes still is) discharged into the sea or rivers. A better, and most often used option, is to reinject this waste into disposal wells or into oil wells to improve the production. However, not all areas have suitable geological conditions to use this option, eg. areas where severe seismic activity threatens the integrity of a waste deposit. There have been numerous cases where reinjected water has contaminated groundwater.

Other technological options exist to reduce the amount of water pumped up with the oil:

• Mechanical devices which separate the water from the oil at the bottom of the well, and dispose of the water before it reaches the surface. These "downhole oil water separators", which use gravity or centrifugal force to separate water from oil, typically succeed in reducing the water production by 75%. The success of the technology depends on geological conditions and the type of crude: heavy crude is more likely to give better results.



TECHNO-FIXES

This technology has so far only been used in trials, financed by research institutes, because the oil industry considers the technology not economically viable, because of the high capital cost.

• Water shut off chemicals, gels.

Gel solutions which are injected in the well, selectively enter the cracks and pathways that the water follows and displace the water. When the gels set up in the cracks, they block most of the water movement to the well while allowing oil to flow to the well.

In a typical example, the median water-to-oil ratio was 82 before the treatment, 7 shortly after the treatment, and 20 a year or two after treatment.

This technology is considered economically viable, although the injection of toxic chemicals underground can be questioned.

The atmospheric emissions consist of the flaring of associated gas and the combustion of fuel to generate power. Associated gas is the gas which was diluted in the underground oil, and which comes free as the pressure drops when oil comes to the surface.

The yearly amount of gas flared is enough to provide the whole world 20 days of gas consumption. Flaring of this gas causes black smoke, acid rain and noise pollution. The flares contain a cocktail of toxins that affect the health and livelihood of local communities, causing an increased risk of premature deaths, child respiratory illnesses, asthma and cancer.

Besides that, the flaring also accounts for 0.5% of all green house gas emissions.



No high tech solutions are needed to solve this source of pollution: the gas can either be captured and reinjected into the well, or it can be captured, transported, treated and commercialized or methods of improved flaring can be used. Sometimes it is used for generating power at the well.

Oil companies have been condemned several times for flaring gas. In November 2005, a court order in Nigeria ruled that Shell should stop flaring. The company has repeatedly failed to

meet the deadlines set by the court. The next deadline is set for 2008, but oil companies claim that due to inadequate funding, the most realistic date for complying the court ruling is 2011.

Meanwhile, oil companies are trying to obtain funding through questionable Clean Development Mechanism projects for reducing the emissions of gas flaring: a fine example of CDM projects where the polluter makes money.

*Piet Boedt, Oilwatch



THE GEOPOLITICS OF AGROFUELS*

la-Appropriately belled by the social movements as AGROFUELS, "biofuels" called and the generation of energy through biomass as a whole, as promoted governments, corporations, development agencies, the United Nations, financial international institutions and other agents interested in industrial production and international trade - do NOT change, but PERPETUATE the model of production and consumption of the modern, urban and industrial social, political and economic order.

The ecological and energy crises that impact on the entire planet, particularly the urgency to stop global warming, urges the world to take a giant step towards transition to a post-petroleum society and economy, requiring deep analysis and structural social, political and economic changes.

Admitting that it is necessary to embrace alternative renewable energies, it is indispensable to analyze the global strategy that drives the feverish promotion of agro energy and its structural imperatives.

Hydrocarbons are the main driving force of the globalized economy, where the extraction and control of fossil fuels has an intrinsic relationship with the networks of power that control the world through control over energy. In addition, it is an undeniable fact that in the current oil civilization the main disasters, climatic catastrophes, wars, famines, forced displacement and enslavement of people are inextricably linked to the military control over territory and fossil energy.

The energy / industrial matrix based on fossil fuels, which sustains the current urban-industrial civilization and the development status, is in crisis. These energy sources are becoming exhausted, so capitalism is desperately searching for new methods of energy generation, including agrofuels. From our perspective as agro - exporting countries of the South, forced into this position by the logic of external debt and our colonial history, agrofuels embody the further entrenchment of the agribusiness model and industrial agriculture, understood as the sum of monocultures, genetic engineering, agro-toxics, environmental destruction and impoverishment of our societies especially those in our rural areas.

I. Precedents and axes of resistance: Food Sovereignty

The industrial agriculture model that begun with the Green Revolution is petro-dependent in energy and inputs. In addition, at the historical root of the current industrial monocultures are plantations, a colonial invention, which still today, reproduces and multiplies its rationality and productive logic. The end of the fossil fuel era thus also sounds the death knoll for industrial agriculture and its antecedents.

The control over the global agro-food system consti-

tutes one of the main components of globalization. The effects of neoliberal policies in the countryside, the expansion of agro biotechnology, the proliferation of free trade agreements, including the struggle against an Agriculture Agreement at the wro, were the catalyzing force for the coalescence of an international peasant movement (La Via Campesina). The privatization of natural resources and ecosystems in indigenous territories strengthened the resistance of the Indigenous peoples.

The political proposal of these movements is the 'Defence of Food Sovereignty', expressed in the right of the Peoples' to control and decide on their food production, distribution and consumption policies, and whether or not to trade their agricultural surplus once the needs of the population had been secured. This should be done in accordance with their cultural and environmental practises. This is a radical proposal that demands the transformation of the economies of agro exporting in the South and the consumption patterns of the North.

Since agriculture is inseparable from the protection of natural resources such as water and land, decisions over the use and management of such resources cannot be made by individual producers based on the private ownership of land. Thus, the political principle of Food Sovereignty espouses that the self determination of peoples to guaranteed by the respect of their right to collective decision making in respect of food production and agricultural, pastoral, fishery or gathering ac-

TECHNO-FIXES

tivities, emphasizing this to be a fundamental principle.

Taking in account the richness of the shared political debate developed by social movements, we firmly locate the agrofuels subject – which has already been defined as a the further entrenchment of agribusiness –within the context advocated by Food Sovereignty.

The industrialization of agriculture by its very nature, results in displacing the peasantry from the countryside as it embodies an agricultural system without farmers. This model has far-reaching implications for the whole of society. It implies dispossession of communities of their land and the plunder of their territories, concentration and privatization of land and water sources, erosion of biodiversity, destruction of natural ecosystems, and the violence and militarization required to force control over natural resources.

This process of marginalization of communities that begins in the countryside is the cause of accelerated urbanization that resulted in the crisis of energy supply, housing, health and other basic services, jobs and access to food in the cities. Urban poverty breeds violence, conflicts and the

The competition for food between 600 million cars and 2000 million of the poorest people of our planet, may lead to popular revolt.



societal malaise that typifies the cities across the South.

It is a global, hegemonic and dialectic process that breeds the current indisputable ecological and energy crisis. This crisis cannot be 'solved' through technological answers such as transgenic seeds being offered as a solution to "hunger" while the real intention is the control of agricultural production, the imposition of intellectual property rights, and the commodification of life and Nature.

Agrofuels, promoted to solve an energy crisis, is a false solution to climate change, which demands the perpetuation of the structural problems generated by urban conglomerates, supplied by goods transported from different places around the planet, and that oblige people and goods to move increasingly over longer distances feeding off a never ending demand of energy.

Nor can solutions come from market instruments such as carbon trading, the sale of environmental services, certification schemes, "sustainable" round tables, the introduction of "carbon plantations" prescribed by the Clean Development Mechanisms of the Kyoto Protocol, and other such schemes promoted by market environmentalism, which we vehemently oppose.

These false solutions framed in the ideology of "development", mushroomed after the Second World War as a way to extend colonialism. Policies institutions and structures were created with reference to this ideology, which in the name of development, prolonged and diversified the nature of ransacking of the South. At the end of the 20th century, development got dressed up in 'Green' and the term "sustainable development" was created to "sustain" the dominance of the colonial model.

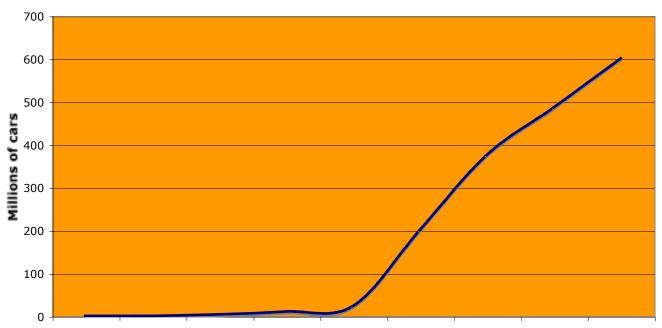
The points set out above represent an attempt to encapsulate the richness of the debate at our meeting and express the complexity of the reflections and contributions. We consider these as being non-negotiable. If you share our vision, we invite you to continue this reading.

2. The geopolitics of agrofuels

The submission of the local agricultural systems to the industrial model and to an exogenous energy demand is a political matter, implying power relations over ecosystems and peoples. This power manifests itself on two well-defined levels:

• First: The current global dependency on fossil fuels is satisfied through the geopolitics of war.

Number of cars on our planet



To guarantee the control over hydrocarbon resources, and now over agrofuels, the industrialized countries and their transnational corporations, have developed both economic and financial mechanisms and political and military ones. In this respect, international commercial agreements have been designed to allow free access to the resources through market laws.

These trade agreements, bilateral or multilateral, come hand in hand with the expansion of infrastructure projects (ducts to transport gas, oil, minerals and currently agrofuels as ethanol or biodiesel; roads, hydroways, ports, processing infrastructure, storage and expenditure of fuels, electrical installations and so forth. The international financial institutions. through diverse strategies and mechanisms, trick and condemn countries into a spiral of dependence and death, for example through debt.

When a government or the people attempt to break from

this dependence, they risk swift and brutal economic, political or military reprisals. The geopolitics of oil is designed not only to guarantee access to hydrocarbons, but also to control its distribution. This explains many of the armed conflicts in the Middle East, Afghanistan the Caucasus and Central Asia where the control over hydrocarbon transport routes are heavily contested by American, European, Russian and Asian companies and countries that back them.

Just as a new geopolitics was forged to secure access to fossil fuels, in the same way a new correlation of forces is created around the agrofuels industry worldwide. The clearest example is the Lula-Bush alliance (Brazil and The United States) for the creation of a global market of agroenergy commodities, which is already translated in a rearrangement of the global balance of power. This is why the recent announcement by Brazil to restart its nuclear program and the cycle of uranium enrichment, did not elicit the outery and condemnation that countries such as Iran and North Korea have met for using the same technologies. Brazil is today, part of the circle of friends of the US and for the time being, beyond political reproach.

Nevertheless, we state categorically and without any ambiguity that nuclear power is unacceptable –this position is non-negotiable-no matter the pretext that nuclear energy may be promoted. Humanity and the environment have already experienced enough destruction and suffering from its consequences.

• Second: The geopolitics of agrofuels compels a global territorial rearrangement.

In the first instance, this reorganization entails the colonization of territories used for food crops, to produce energy commodities, and with it will come the obvious price competition with food (the Mexican maize case in early 2007 is a clear example), setting off a chain reaction on the whole economy.

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The amount of cereal needed to fill a 25 gallons (or 100 litre) car tank with ethanol just once, is enough to feed one person during one complete year.

On a wider level and related to the use of so-called 'second generation' agrofuels from nonfood species (such as eucalyptus, switch grass, Miscanthus, among others), this rearrangement will result in the occupation of land on an exponentially increasing scale.

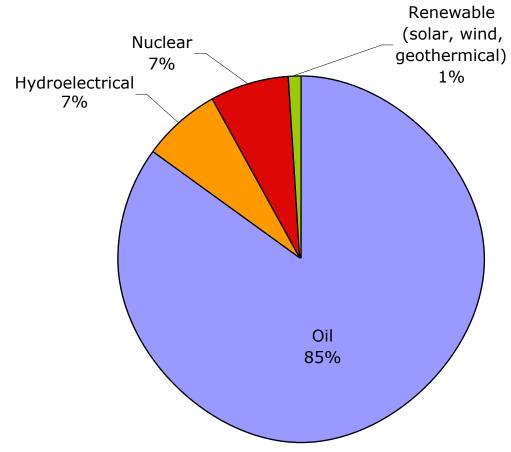
Thus, to "replace" fossil fuels with agrofuels, will impact more seriously on rural populations, generating strong rural to urban migratory flows.

This pressure on land will be deepened as a result of the mantra that agrofuels will be grown on so called "marginal lands" or "arid land". These lands are amongst those that has been left out of the agro- industrial scheme and feed most of the poor and peasant populations and indigenous peoples of Africa, Asia and Latin America, who live in non-commercial cultures. It's on these "marginal lands" that millions of hectares of Jatropha are intended to be introduced, plantation style in arid regions of India, the Sahel and West Africa.

To summarise, the reproduction of capitalism in a society intransition to a post-petroleum era depends on the incorporation and control, even by military means, of gigantic areas of territory. So, the axes of resistance are to ensure the integrity of sovereignty over land, guaranteeing access to local food and energy: strengthening energy and food sovereignty and redefining political sovereignty.

* Position Paper of the Global South on Food Sovereignty, Energy Sovereignty and the transition towards a post-oil society

Global energy sources (2005)



COMMON BUT DIFFERENTIATED RESPONSIBILITIES*

VULNERABILITY AND ADAPTATION

I. Vulnerability and adaptation

The UN Framework Convention on Climate Change and its scientific organs have recognized that the climate change impacts will affect in a disproportional matter the countries of the South. This is because the planet's climatic chaos will be much stronger in the tropical areas of the planet, where precisely the most impoverished and vulnerable populations live.

Although adaptation could reduce the impacts climate change will produce, it will not eliminate them because up until now too much time has been wasted and nothing has been done. In spite of the different portfolios for impact mitigation and adaptation it is urgent to prevent the dead of thousands of people and the displacement and victimization of millions within the next few years. Currently the plans for adaptation that are being contemplated are directed towards the reduction of these vulnerabilities and to facilitate adaptation in face of those climatic disasters. The key sectors that need to be attended with the adaptation plans are agriculture, water resources and infrastructure among others. Obviously, adaptation plans have to be complementary in character to those of emission mitigation and should include a series of needs like infrastructure, technology, knowledge, planning, etc., etc.

According to the IPCC there are four areas in the World that will be most affected by climate change: Asia, Saharan Africa, insular territories and the Artic; although the effects will be devastating in practically every country in the South. This could be clearly read in all the IPCC reports.

Adaptation costs and responsibilities

The World Bank has made estimations that between 10 to 40 billion dollars will be needed to cover climate change adaptation needs of countries of the South. In the most offensive way and with millions of victims of the climatic disaster, among the World Bank plans are included insurance programs, the elimination of legal barriers which will impede the private sector to invest in energy, direct foreign investment and the broadening of credit for the energy sector.

A credit portfolio that will trigger foreign debt in the countries of the South is also expected.

A good portion of these adaptation costs, according to the WB, will have to be covered with credits, with Official Development Assistance (ODA), with direct foreign investment or with national investment. That is to say, more business for the multinational companies, probably more social and environmental impacts and obviously a bigger weight on foreign debt.

According to the World Bank, adaptation would be covered in the following way:

 ODA and financing in "favorable" conditions

4000-8000

- Direct foreign investment 2000-3000
- National investment 3000-30000
- Total cost for adaptation 9000-41000

In the same way as with mitigation costs to calculate vulnerability and adaptation, a scenario analysis has to be done which evaluates impacts on food supply, coastal flooding, lack of access to fresh water sources, etc.

In all cases, the conclusion is that climate change and the adaptation efforts by Southern nations will make the Millennium Objectives unreachable.

Oxfam has calculated that such adaptation will represent a minimum cost of 50 billion dollars per year. At the same time the United Nations Development Program (UNDP) says that these values will reach the 100 billion per year mark. Christian Aid also coincides with these figures. What is certain is that nobody knows exactly how much it will cost to ensure that the peoples of the South would be less affected by climate change impacts, because it is very difficult to prevent future damages with accuracy. The UNFCCC has proposed that, nevertheless, there are plans that should be considered urgently and immediately, for which it has requested to the most impoverished countries to elaborate National Adaptation Programs of Action (NAPAS) to Climate Change.

A NORTH-SOUTH VISION

EMERGENCY PLANS IN THE COUNTRIES OF THE SOUTH TO CONFRONT CLIMATE CHANGE

- The design of social protection programs in the communities
- To promote protection against flooding
- To create storage for food, water and medicine
- International initiatives for river management
- To protect electric facilities from flooding
- To protect transport systems from flooding
- To built refuges and emergency watercrafts
- To support the improvement of the irrigation systems
- To strengthen highways and to protect factories, schools and hospitals
- To built contention walls
- To reforest
- To raise the foundations of houses
- To drain glacier lakes
- To relocate communities

According to the Adaptation Financing Index designed by Oxfam, 28 countries are responsible to finance the adaptation of the developing countries:

- The United States and the European Union together should contribute around 75% of the necessary funds (The United States a little over 40% and the European Union a little over 30%);
- Japan, Canada, Australia and the Republic of Korea should contribute with around 20% of the costs.

The Debt Observatory on Globalization has calculated

that Spain has a carbon debt due to CO₂ emissions of almost 15 billion dollars (the debt that Spain claims from Southern countries is around 14 billion dollars, which is less than what it would owe just for the CO₂ emissions). This is based on a 100 euro penalty that would be applied to the emitters, for each CO₂ ton that will exceed the assigned quota in the European Union internal CO₂ emission market.

According to the calculations of Spain's Debt Observatory on Globalization, in 1990 the Carbon debt due to historic emissions went up to 980 billon dollars and since then this debt has been increasing. Instead of giving gifts or credits, the countries responsible for climate change should start giving back this money so the countries of the South can start adapting themselves and repairing the damages caused by Climate Change. On the contrary, we are forced to acquire more debt from the international financing institutions.

Although several international funds have been created for this purpose, these only represent charity in comparison to the enormous carbon debt.

These funds are: the Global Environmental Fund (GEF) for Less Advanced Countries (financed by voluntary donations); Special Climate Change Fund GEF (financed by voluntary donations); the Adaptation Fund (the first aid flow will come from a 2% tax on the carbon credits generated under the Clean Development Mechanisms (CDM), financed by companies from the contaminant countries); the Strategic Priority on Adaptation, also GEF, to evaluate the capacity-building adaptation measures, fi-

nanced through a 50 million dollar contribution from the GEF 's own funds.

However, how can one calculate the true costs of adaptation and reparation? How can one know how much is this Climate Change social and ecological debt? Although it is difficult to put a price to the unmeasurable, it is possible to do some numeric exercises to put in evidence the big difference that exists between this debt and the one the countries of the North claim, as well as to know how to confront the damages provoked by climatic disasters.

What has not been said is that there are other innovative ways to find procedures for mitigation as well as for adaptation. For example the Yasuni/ITT proposal presented by the Ecuadorian government that plans to leave the petroleum in the subsoil and which will avoid millions tons of emissions in exchange for a trust fund, which will be invested in social development, alternative energy development, and infrastructure plans including those for adaptation.

While the countries of the North make advances in their millionaire programs for adaptation, the countries of the South continue offering their lives, and their innovative proposals to contribute to the holding back of the impacts which are not being heard or paid attention to.

Ivonne Yánez, Oilwatch

MITIGATING EMISSIONS OR MITIGATING IMPACTS*

There are several ways to mitigate climate change, to reduce the emissions, some are too evident like not extracting more hydrocarbons or conserving the forest and which could be immediate, and others the more costly ones require of changes in policies and in live and production styles mainly in the North. In the first case, there are countries which are setting the example like Costa Rica or Ecuador, or those with big extensions of well conserved tropical forest -especially by the indigenous people who live there-, but in the second case, instead of taking urgent measures these get postpone especially in function of how of a good business they could end up being.

Among the proposed solutions at the international level to confront climate change, several mitigation programs are discussed. Although, this is refer to the stabilizing of green house gas emissions or to its concentration in the atmosphere, the international negotiations on mitigation have been concentrated in a debate around the market more than a true reduction of gas emissions to the level established by the Convention. These conversations are around costs and benefits, and around finding the best business and the bigger

Area	# of Registered Projects October 2007
Energy industries	559
Energy demand	14
Manufacturing industries	65
Chemical industries	14
Transport	1
Mining/mineral production	5
Fugitive emissions from fuels (solid, oil and gas)	85
Fugitive emissions from produc- tion and consumption of halocar- bons and sulphur hexafluoride	16
Waste handling and disposal	221
Afforestation and reforestation	1

profits, like in a bazaar (http://www.cdmbazaar.net/default.asp), instead of facing the real problem: fossil fuel burning.

To the effects of mitigation plans and cost calculation, the experts have developed a series of scenarios, which illustrate how the future will be according to different social, economic, political, and technological factors. These scenarios allow in theory to see the type, magnitude, calendar, and the costs of mitigation measures. Nevertheless, they refuse to analyze a post-oil scenario.

Every quantitative estimation of mitigation costs is done according to market tools, the level of commercialization of emissions, of the application of Clean Development Mechanisms (CDM), of joint implementation, of volunteer agreements. The entire debate goes around getting to know how much the mitigation will cost and gets entangle in financial terms and mechanisms like "market potential" or "economic potential". That is, that the industry as well as the investors evidently see a great business with climate change when affirming the "considerable econom-

Region	Number of Projects CDM	%
Africa	21	2,59
Latin-America and the Caribbean	295	36,33
Asia - Pacific	490	60,34
Others	6	0,74
	812	
Total reductions, approximately	169,000.000 Tonnes co ₂ eq.	

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ic potential to reduce emissions bellow current levels before 2030".

According to the IPCC, to continue emitting green house gasses but keeping the increase of the mean global temperature under 2°C would cost to whomever contaminates close to US\$100/tCO2, that is why industrialized countries from the North want that these costs be assumed by countries from the South, saving billions of dollars so they do not have to reduced their consumption, and sacrificed their energivorous societies. Although the emission reduction goals have a lot to do with principles of justice and equity and of common but differentiated responsibilities, in reality the contrary is what happens.

In what is referred to estimations of mitigation costs, is possible to state that there are two approaches. One that talks about the application of policies, which would enable to mitigate emissions, while the other already talks about damage reparation costs and adaptation measures, that's to say to mitigate climate change impacts. The first approach includes the development of technological projects that encompass among others hybrid vehicles, underground storage of co,, or those energy reconversion projects among which are agro-fuels, carbon sink and even nuclear energy. However, these projects instead of mitigating emissions as well as damages in many cases will carry bigger emissions and bigger problems for the local populations where they will be implemented.

The investments presented for mitigation are within the limits of clean mechanisms, direct foreign investment, official development assistance, technology transference and of course public and private credits. For instance, it is consider that the investments in energy infrastructure, will reach an amount close to 20'000.000 of millions until 2030, which includes technological changes, energy reconversion, gas projects, agro-fuels, long run energy plants, etc. It is consider that 65% of the mitigation potential is found in tropical countries.

The World Bank is one of the main actors in this field, since is calculated that it has a portfolio of carbon market projects for over 1 billion dollars being one of the main beneficiaries of the CDM. The World Bank maintains a double moral because it wants to present itself as the planet's savior while it continues financing fossil fuel projects that will emit close to 1.5 billion Tons of Carbon to the atmosphere.

What is clear to the countries of the South is that mitigation measures for emission reduction, which are being propose through Kyoto-and post Kyoto-could gen-



CO₂-Emissions between 1800 and 1988

erate new impacts, environmental problems and social and ecological conflicts, since they would be generating new cases of territory confiscation, forest co-optation, land concentration, intensification of injustice, human rights violations, and foreign debt. All of this constitutes an enormous ecological debt, because of carbon debt due to historic abusive emissions, as well as for the local damages during extraction, transport, and hydrocarbon refining, but also because of the social and ecological debt generated by the mitigation projects of the PK, CDM, and others, and because of the financial debt our countries will have to acquire to solve global warming impacts.

The industry and the consumers of the North do not want to see their live and production styles affected, neither their profitability diminish and do not want to accept the uncomfortable reality that the only way of mitigating climate change is through not burning more fossil fuels,

And it is here within this context that the proposal to live the petroleum in the subsoil is presented as the only and measurable way of mitigating CO₂ emissions, and at the same time avoiding the lost of natural forests, which felling will contribute even more to climate change. It is not about looking for the best business offers to save the planet and its people, but rather taking revolutionary measures as the ones mentioned.

Ivonne Yánez, Oilwatch

CARBON TRADING*

The United Nations Framework Convention on Climate Change of 1992 had some good principles. It helped focus attention on the issue, and recognized that the North, not the South, was primarily sponsible for global warming and had the bigger responsibility to act. But by 1997, with the Kyoto Protocol, the huge complexities of carbon trading had begun to dominate international negotiations.

It's important to remember that it was the US that was behind the push to turn the Kyoto Protocol into a charter for carbon trading. Europe and the South were at first very skeptical, and only later caved in to us pressure. Although the us later withdrew from the Kyoto Protocol, a lot of us business was, and remains, in favor of it.

It takes a lot of work to make something tradable. Over the centuries, it's become possible to market some things – silver, soybeans, cars – but not others. Climate change mitigation is one of those others. One day, one or two of the obstacles that stand in the way of effective carbon trading might be overcome. But most will never be.

One difficulty is that all current attempts to trade in carbon help the worst polluters go on polluting. Today, the industrial sectors most responsible for the climate crisis are getting huge free blocks of newly-created pollution

rights which they can then parlay into high profits. In Europe, for instance, power generators are garnering hundreds of millions of pounds per year in windfall profits just for pursuing business as usual, while ordinary citizens suffer higher electricity prices, low polluters get nothing, and developers of renewable energy go begging. It's the "polluter earns" principle rather than the "polluter pays" principle. What's happened is that no sooner did the earth's ability to clean its own atmosphere of carbon dioxide become valuable than it was converted into private property and taken over by the rich.

However, that's only the beginning. Big polluters also benefit from being able to buy cheap extra pollution rights from supposedly "carbon-saving" projects that they invest in abroad. For example, a British cement firm or oil company that wants to continue business as usual but hasn't been given enough free pollution permits by its government can make up the shortfall simply by buying lowcost credits from, say, a "carbon-saving" wind farm in India, a scheme to destroy globe-warming HFC refrigerants in Korea, an energy efficiency programme in South Africa, or a project to burn landfill gas to generate electricity in Brazil. This channels a further flood of easy pollution rights into the already huge pool at the disposal of the North's corporate sectors.

In addition to being unjust, all this merely encourages the worst polluters of the North to delay the long-term structural shift away from fossil fuels that the climate problem demands. Why innovate if you can get by year to

year by buying cheap pollution rights from elsewhere?

From a scientific point of view, one of the most hopeless aspects of carbon trading is that the carbon credits flooding into the market from such projects simply can't be verified to be climatically effective. That means consultants and carbon accountants hired by industry can make virtually any claim they want about how much carbon they are "saving". The resulting dilemma for carbon traders is insoluble. On the one hand, their market needs a flow of cheap. standardized credits. On the other, the harder they try to create this flow, the less believable their carbon credits become, and the less credible the market.

Many ordinary people in the South have more immediate concerns about carbon trading. As arule, carbon credits are being generated not by green entrepreneurs or industries moving away from fossil fuels but by local environmental offenders, while communities defending their lands against oil exploitation or coal-fired power plants are being ignored. It is big polluters, after all, who tend to be in the best position to hire carbon consultants, liaise with officials and pay to get projects registered with the UN carbon market.

The bright side to this picture is that I don't think it will take big business very long to get used to the fact that carbon trading doesn't work. Business is used to dealing with untraded things. In fact, its life depends on it. It takes advantage of physical and intellectual commons of all kinds. It gets handouts from the state. It uses waste dumps for free. It could not

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survive without family relations, patron-client relations and so forth. It understands and depends on the fact that the world is not in fact ruled by markets. And it's survived very well throughout its history without pollution trading.

Northerners have no moral authority to tell Southerners not to use coal, oil or gas. Given their history, they have no right to do so. But Southerners do have that authority and that right. And many are exercising it. For every Southern government pushing a fossil fuel-intensive path of industrialization, there are dozens of local Southern movements fighting oil drilling, coal mining, land seizures, polluting power plants, gas pipelines and carbon offsets, as well as exploring and experimenting with more people-friendly and climate-friendly energy and transport alternatives.

The real action on climate change has always taken place elsewhere, and will always take place elsewhere. Governments in industrialized countries will need to shift subsidies from fossil fuels to renewable energy. They will need to undertake sweeping public investments in efficiency and transport to give their citizens wider choices about how they use energy, and apply conventional regulation and taxation in deeper ways. Meanwhile, communities from Nigeria to Alaska will continue to resist oil drilling and coal mining on their lands and continue to defend or develop their own low-carbon ways of life, and will have to be supported rather than thwarted in those struggles.

* Larry Lohmann, Durban Group

These are axes of de-development:

- **De-urbanize**, to restitute populations in a human scale, supplying their needs in the local market with local energy and food sources.
- **De-globalize** trade and transport of goods, particularly agricultural resources and food, to attack the main demand on liquid fuels: the refrigerated trucks that transport the meat and milk chain, the planes that transport flowers and tropical fruit, the gigantic cereal ships powered on diesel to take soy to China and the EU, etc.; that generate a flagrant negative energy balance, and that sustain the illusory notion of "growth"
- **De-technologize** food production, replacing current agribusiness, Green Revolution and Genetically Engineered food production systems with those modeled on an agro-ecological model inherent in the food sovereignty proposal based on biodiversity, soil nutrition, and indigenous knowledge.
- **De-petrolize** the economy; the best policy against global warming is the elimination of fossil fuels, leaving oil, gas and coal underground, where they belong. This must not be confused with fictional solutions as a "decarbonized economy", meaning to promote the carbon market, clean development mechanisms and the Joint Implementation that perpetuate the destructive petroleum model in the context of the logic of a free market.
- **De-centralize** the generation and distribution of energy, through technologies that will not reproduce dependency and will guarantee supply to local populations of their needs, that is distinct from privatisation of energy, window dressed as "providing energy access to the poor". In other words, recuperate and defend the principle of energy as a service and not a business and commodity offered for sale in the marketplace. It is within this context that Energy Sovereignty must be guaranteed.

KYOTO HAS FAILED*

Kyoto has failed. Despite so many admonitions from the IPCC, the reality is that emissions of carbon dioxide in the world are going up by over 3 per cent per year. This is the failure of the countries that signed up to Kyoto, and even more so, of those like the United States who stayed outside the timid Kyoto framework, and also of those not included in Annex I of the Rio de Janeiro treaty of 1992.

The world is currently burning about 85 million barrels of oil per day. As we approach peak-oil (at 90 mbd? 100 mbd?), the price of oil goes up and up despite the efforts to get more of it by means foul or fair as in Iraq, in the Niger Delta, in Amazon and other "commodity frontiers". In Canada, rocketing oil prices have finally made exploitation of the Alberta oil sands profitable, whereby one barrel of oil equivalent is needed to produce 3-5 barrels of oil. The Hubbert curve is named after the geologist who 60 years ago predicted that the United States peak-oil would take place in the early 1970s. The road down the Hubbert curve will be terrible. Downhill will be harder than uphill.

The price of oil is followed by the price of natural gas. There are also conflicts around the world on gas extraction, like in Bolivia a few years ago where the gas contracts cost some dozens of human lives and a change of president, and in Burma where Unocal infringed human rights when building a gas pipeline to Thailand. The juggernaut goes on, trampling indigenous peoples and biodiversity under its wheels.

Oil and gas prices are still too cheap, in the sense that neither local damages ("externalities" if you wish), nor their effects on climate change, are included. But their prices are rising rapidly because peak-oil and later peak-gas are fast approaching. Peak oil refers to the maximum output of barrels produced in the world, after which time extraction will decrease while potential demand will still rise. Another effect of peak oil is that more and more energy is needed to pump the remaining oil out of the ground, what is referred to as EROI (energy return on energy input.)

In contrast, the supplies of coal are plentiful, and there is no opec of coal to restrict supply. Therefore the first half of the 21st century is likely to be an era of coal. Already in the 20th century the use of coal increased by a factor of six. The world's fastest growing economies, China and India, are fuelling their industrialization with cheap, readily available coal, counteracting reductions in energy intensity elsewhere. The trouble is that coal is socially and environmentally a very dirty business, whether procured by underground or open cast mining. Coal usually contains sulfur, which causes acid rain. Per unit of energy delivered, coal produces considerably more carbon dioxide than oil or gas. Nevertheless, the fear of emissions caps has not deterred a boom in the construction of coal-fired power plants, even in "progressive" European countries, with Romanian and Bulgarian

massive coal deposits a growing supply source.

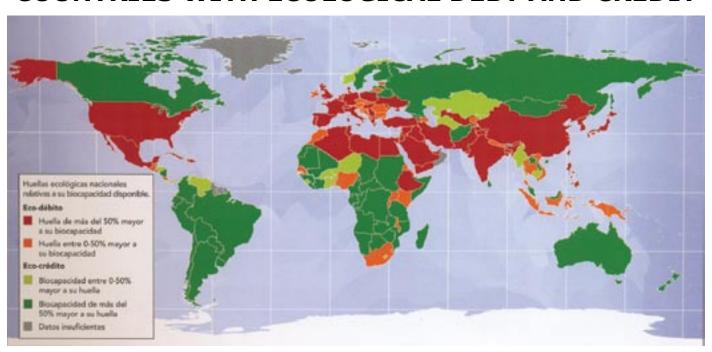
While the technology for capturing some carbon emissions from coal and storing them underground is becoming available at a cost, current prices for carbon emissions on the European market provide no incentive to do so. It is simply cheaper to pollute now and pay it off later. Or rather to pollute in Europe and then invest in a tree plantation or other CDM project in the developing world. Because of this trend, human-produced carbon dioxide emissions in the world keep increasing in a trajectory that means that a concentration of 450 ppm would be reached in little more than thirty years, while according to the IPCC emissions should come down by 60 per cent in the next few decades.

HISTORY OF CLIMATE CHANGE

The intellectual history of the enhanced greenhouse effect is not yet common knowledge. It begins at least over one hundred year ago, when Svante Arrhenius from Sweden, a Nobel prize winner in chemistry, published some calculations on the effects on temperature of doubling, or tripling, the contents of carbon dioxide in the atmosphere, with results very close to the present ones. In 1938, electrical engineer G.C. Callendar published an article explaining that the combustion of coal would produce a slight increase in temperatures on the globe. According to him, there was nothing to worry about. Everybody knew that burning coal was good for the economy and human well-being, and the

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COUNTRIES WITH ECOLOGICAL DEBT AND CREDIT



increase in temperature was also good because it would extend the margin of cultivation to the North. Twenty years later, at the end of the 1950s, Roger Revelle, protagonist of Alan Gore's film, and other scientists, sounded a cry of alarm. Systematic measurements of carbon dioxide concentrations in the atmosphere were made. In the late 1980s, the International Panel for Climate Change began to get going.

This intellectual history is interesting for it own sake (late lessons from early warnings) but also because it bears on the historical responsibility for climate change that falls on the industrial counties. Should the responsibility go back to 1992 and the Rio de Janeiro treaty? Should it go back to 1960, or even further back?

* Joan Martínez Alier and Leah Temper

Legend

National Ecological footprints relative to the available biocapacity

Eco-debt

- Footprint more than 50% greater than biocapacity
 - Footprint between 0-50% greater than biocapacity

Eco-credit

- Biocapacity between 0-50% greater than footprint
 - Biocapacity more than 50% greater than footprint
- Insufficient Data

OIL POLICIES FROM THE SOUTH*

The new industrialized countries such as China and India do not want to talk about climate change. When they do, they argue that they should have the same opportunity to grow as the West did. On their side, the oil exporting countries (as well as the coal exporting countries, such as Colombia in Latin America), did not want to hear about the enhanced greenhouse effect. The curb or the cap on emissions, if it ever came, would mean lowering the demand for fossil fuels. Already in 1992 Saudi Arabia started to complain that they would claim compensation against those who were ready to spoil the oil market by unproven alarms about climate change. Today the official position of OPEC remains the same, only slightly modified of late by proposing to constitute a fund to subsidize research on carbon "sequestration" technologies.

Therefore, it is all the more remarkable that at the OPEC meeting in Riad on 18 November 2007, president Rafael Correa of Ecuador, aware of a speech by Herman Daly made in 2001 in Vienna to the leaders of the cartel, proposed a new eco-tax on oil exports by OPEC countries with the explicit aim of lowering a little the demand for oil in order to diminish carbon dioxide emissions. The proceeds

from the tax (the Daly-Correa tax?) should go for poverty-reduction (including energy-poverty reduction), and for alternative energies (meaning geothermal, wind and solar, and not, let us hope, agrofuels or civil-military nuclear proliferation). Correa stated that the tax could be of 3 per cent of the price of oil, for starts. There is in this proposal an element of economic justice (many rich countries put heavy taxes on imported oil and gas, against the exporting countries). There is also an element of climate justice, based on a new awareness (among at least one of the smallest OPEC members) of the realities of the enhanced greenhouse effect, and the international distribution of its causes and effects. Such realities are apparent in Ecuador with glaciers in the Andes losing ice cover, and future sea-rise threatening Guayaquil.

Ecological debts

Other voices from the south ask in Bali for recognition of the Ecological Debts or the Environmental Liabilities owed from North to South. There is a public and a private aspect to this.

First, countries which historically have produced and continue to produce more carbon dioxide per capita than the rest have a "carbon debt". Jyoti Parikh, a previous member of the UN International Panel on Climate Change argued in 1995 that the average global emissions were about one ton per person per year. Industrialized countries produced three-fourths of these emissions, instead of the one-fourth that would have

corresponded to them on the basis of population. The difference was 50% of total emissions, some 3000 million tons at the time. Contemplating the increasing marginal cost of reduction, the first 1000 million tons maybe could be reduced at a cost of, say, \$15 per ton, but then the cost would increase very much. Taking an average of \$25, then a total annual subsidy of \$75 billion was forthcoming from South to North'.

The North has occupied the sinks (such as the oceans) and the atmosphere as a temporary deposit. They are debtors and they should pay, as Anil Agarwal and Sunita Narain from the Centre for Science and Environment of Delhi, argued already in 1991 making the case for equal per capita emissions allowances.

The North has occupied the sinks (such as the oceans) and the atmosphere as a temporary deposit. They are debtors and they should pay, as Anil Agarwal and Sunita Narain from the Centre for Science and Environment of Delhi argued already in 1991 making the case for equal per capita emissions allowances.

Second, from the point of view of corporate accountability, many oil companies have done terrible damage to the local inhabitants and to other forms of life in the name of profit. Again, Ecuador provides some lessons. The court proceedings against Texaco (now Chevron-Texaco) that started in New York under the Alien Tort Claims Act in 1993 are now reach-

I Parikh, J.K. (1995), 'Joint Implementation and the North and South Cooperation for Climate Change, International Environmental Affairs, 7, I

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ing a conclusion in a court in Lago Agrio, an oil-polluted township in Sucumbios province. There might be an agreement out of court. The damages (because of oil spills, gas burning, over 600 pools of polluted extraction water and the resultant cancer cases, extinct tribes, and lost biodiversity) are now being quantified in money terms because this is the nature of the court case (a civil suit for damages and not a criminal case).

The damages caused by Texaco between 1970 and 1990 in terms of lost human health, the destruction of local indigenous groups, soil and water polluted and loss of biodiversity, are huge. Texaco made a conscious decision not to re-inject the water, standard practice in the US at the time, nor to line the waste pits. These damages could be estimated in terms of saved costs, or in terms of the economic value of human suffering and nature spoiled. A claim for about 6 billion dollars has often been mentioned. The present value of this sum (at a rate of interest of only 5 per cent, and taking also into account the loss of purchasing power of the dollar in the last twenty or thirty years) would exceed 20 billion dollars.

The lesson from Lago Agrio is that oil, coal, gas companies can no longer get away with not paying for their social and environmental liabilities, even when they are operating in places where human life is cheap and the destruction of Nature is not carried into the bottom line of the profitand-loss account. Since 1993, it has been civil society, through its

organizations and support groups in Ecuador and abroad that has pushed the case.

2. THE YASUNÍ-ITT PROPOSAL

Finally, another innovative oil policy coming from civil society is the ITT Yasuni proposal, also in Ecuador. The idea was first expressed in the Oilwatch position paper in Kyoto in 1997: keeping fossil fuels in the ground deserves "carbon credits". Thus, in the Ishpingo-Tambococha-Tiputini field in the Yasuni National Park, about 920 million barrels of heavy oil would remain in the ground in perpetuity or in a moratorium sine die, in an area inhabited by indigenous groups, some living in voluntary isolation, and that holds unique biodiversity. An ancillary benefit of keeping this oil in the ground (apart from respecting Nature and human rights), is that the carbon dioxide that would be produced when burning the oil elsewhere, is "repressed" underground. The avoided emissions of carbon dioxide are of the order of 410 million tons from the oil, plus some more from the avoided deforestation. Ecuador is asking for a part of the money from outside in recognition of its foregone monetary revenue. At present, there is strong support inside the government of Ecuador for this project, which was launched by the then Minister of Energy, Alberto Acosta, early in 2007. Acosta is now the president of the Assembly that is writing the new Constitution: Acosta has stated that the ITT region and other natural parks should be declared out of bounds for the oil industry.

This project, if successful, could be copied elsewhere for instance in ÛWa territory in Colombia, in the Niger Delta, in some of the worse coal mines in the world... In fact, in the Niger Delta, the Ogoni and Ijaw activists have often pointed out the inconsistency between all the international rhetoric on "saving the world's climate" and the local reality of oil extraction and gas burning at the cost of so many human lives. Shell has never been held accountable for the damage done and the death of Ken Saro-Wiwa and his comrades in 1995. At present Shell continues to flare gas despite new laws prohibiting the practice.

As the Bali meeting takes place, there are new voices from the South that are clamouring to make themselves heard. They are demanding justice and refusing the alms offered by the North in the form of so-called flexibility mechanisms and "adaptation loans" which transform the polluter pays principle into the "polluted adapt" principle. After nearly twenty years of ineffectual climate change politics dominated by the North, Bali too is doomed to failure if it does not listen to the polluted.

* Joan Martínez Alier and Leah Temper

KYOTO FAILURE... OIL IGNORED DELIBERATELY*

The Kyoto protocol has failed. The countries with obligations to reduce their emissions that cause the greenhouse effect have done too little, and done it wrong.... The emissions trade, the clean development mechanism or the joint implementation are formulas that leave aside the oil industry, the number one responsible for global warming. These mechanisms aim to transfer the responsibilities and the impacts to the South of the world, creating new threats for the peoples: occupied territories by plantations, mortgaged land, displacements, expropriation, forests given to private businesses, privatised protected areas or pushes for other energy projects such as hydroelectricity or agrofuels, that occupy agricultural lands, natural forest areas and that deprive the local communities from their rights.

The emissions market assumes, in practice, a subsidy to the contaminating business and a stimulus to the highly consuming countries, to maintain their production and consumption models. In addition most of the projects being developed under the Kyoto scheme has false and non verifiable emissions' reductions.

Oil consumption causes the emissions with a greenhouse effect. This is why every oil activity has a debt with climate and with humanity.

How to confront global warming?

Attacking the capitalist production and consumption based in fossil fuels

The problem is not only the consumption or fossil fuels burning but the whole oil cycle, starting with the exploration, then extraction and refining.

You can't deal with the issue of consumption without applying real measures over extraction. Production and consumption are part of the same problem and have to be attacked together.

• Creating the conditions so that the countries of the South that depend on fossil fuels - due to the international market organization - are able to stop extracting it.

There are many countries of the South of the world that depend on fossil fuels for their incomes, and that need these money to pay their suffocating external debts. These countries have to free themselves of these two ways of dependence and oppression that impoverish them from an environmental point of view and that decapitalize them from an economical point of view.

On the other hand, the highly consuming oil countries that have a historical ecological debt with the South for having benefited from their natural wealth, for having occupied the atmosphere abusively, for imposing a dependency model with the

debt and maintaining in a lot of cases repression models and internal corruption, have to contribute to this liberation. They have to create the conditions so that it would be possible to stop exploiting oil, so that the direct responsibles won't remain unpunished, so that the ecosystems in the south can be recovered, and provide the capacities to confront the consequences of the climate disaster in the most vulnerable areas.

• Create the conditions so that the tropical countries can conserve their forest because they have a fundamental role to play in climate regulation

Tropical forests have a strong connection with water and climate. Mature forests with a wide vegetation area per unit, by holding up water, maintain the ecosystem equilibrium and local temperature. The tropical forests absorb a great quantity of solar radiation, and propitiate cloud's formation that reflect the solar energy to the out space, which is a fundamental issue in controlling climate change.

Maintaining the forests and taking care of them provides not only local benefits to thousands of local peoples whose lives and wellbeing have to be secured by the respective national states, but benefits for all the humanity.

• Avoiding to create new ways of colonialisms over conservation and climate. The decisions have to be democratic.

The mechanisms of emission's trade and the different ways of carbon trade proposed by Kioto are new ways of colonialism that affect the rights of the communities and the national states.

DECLARATIONS

At a national level, oil producing countries have to start a wide and participative debate about the consequences of this type of development based in fossil fuels extraction, that has provoked irreversible impacts, over how to deal with climate change, forest conservation and the natural heritage, energy sovereignty, etc.

Procedures are needed to confront the exploration, procedures that stop the opening of wells, that give alternatives to the countries, specially the tropical ones so that they can maintain their oil underground.

Oilwatch proposed 10 years ago a moratorium to the expansion of the oil frontier, and has also proposed that the peoples who resist this activities should not only

to be protected from repression but also rewarded for their true contribution to the planet stability.

Initiatives such as the one from Ecuador that demands a compensation for the 50% of what the State will gain from the oil exploitation of ITT, based on the differentiated responsibility due to climate change.

More alternatives like this one are needed to eliminate the emissions trade because these are evasive actions, harmful to the responsibilities and that instead of solutions, create new ways of colonization.

At the international level a proposal like this will aloud the transformation of the international logic in climate change. This is why Oilwatch proposes to initiate the path that will lead to new international compromises.

*Fourth session period of the special working group about the compromises of the annex I parts with adjustment to the Kyoto protocol. Vienna august 27 to august 31.

INDIGENOUS GROUPS AND NIGHT LIGHTS



0 2500 Kilometers

DECLARATION ON BEHALF OF DE-DEVELOPMENTISM*

THE PATH WE PROPOSE FOR THE SOUTH

Agrofuels and the generation of energy through biomass as a whole, that has been promoted by governments, corporations, development agencies, the United Nations, the financial international institutions and other agents interested in their production and their international trade - does not change, but perpetuate the model of production and consumption of the modern, urban and industrial civilization that has led to inequality in the world, wars, poverty, and environmental destruction.

The ending of the petroleum civilization and the reproduction of capitalism.

The reproduction of the current western pillaging civilization, whose doctrine is globalized neoliberalism, has fossil hydrocarbons as its material base.

All the driving forces behind the production, trafficking and global marketing of commodities depend on hydrocarbons: the oil industry, the agro food industry, the pharmaceutical companies, of textile fibres, the industries involved in the production of detergents, cosmetics, and explosives, celluloid, plastic in general, construction materials, packaging, domestic appliances, etc. In the same way, the global transport of peoples and goods, the mobility

and speed in which workers and products move around, and are exchanged about the globe also depend on fossil fuels. Now, because automobiles, urban areas are being designed, with construction and expansion of the megalopolis and the occupation or urban space and territories.

In the current paradigm of "growth" oriented towards the integration of the market and global trade, agrofuels are upheld as gradual substitutes for oil to support environmentally unsustainable patterns of production and consumption in the North. The way of life promoted by the North and the elites of the South, best expressed in the so-called "American way of life " must be transformed.

The United States together with Occidental Europe, to whom to-day China and the minority elites of the South are added, are the main consumers of energy. China, the great factory of the world, reproduces the model of production and consumption created by the North so that it supplies the global market with everything while the North and South consumes. We understand that the model of growth of China is not a model for or of, the South.

The demand for energy and commodities to supply and maintain the life style of the societies in the North, translated daily in food, wardrobe, heating, housing and transport, pigeonholes the universal ideal way of life, wellbe-



DECLARATIONS

ing and "progress" aggressively promoted through globalization as a universal standard for humanity.

The materiality of everything that is part of the daily life of the "developed" countries depends entirely on an energy and ecological irrational demand, historically built through the constant plunder of the nature and knowledge of the peoples of the South.

For the South this "petroleum" model perpetuates the unequal exchange, technological dependence, indebtedness, impoverishment of peoples and dispossession of their territory and their sacred spaces. We have experienced, from the South, that this way of life that a minority of the planet enjoys, is maintained by the continued exploitation of nature and human labour in order to feed the flow of commodities and services that have historically caused the climatic changes, global warming and the colonial domination of the North over the South.

Synthesis: the underlying logic of agrofuels as gradual substitutes for oil is to support the global circulation of commodities and the environmentally unsustainable demand of energy and resources. This is done to supply and promote as universally ideal, the lifestyle of the North steeped in the historical logic of colonial exploitation of ecosystems and peoples of the South.

Our answer to the deceit of the so called positive energy balance of agrofuels is to point to the undeniable history of ecological and social devastation wrought bythe fossil fuel-dependent Green Revolution and concomitantly, industrial agriculture. This has

caused the loss of 75 % of biodiversity throughout the last century, according to Food and Agriculture Organisation (FAO), besides having promoted the destruction of local agriculture and markets through the imposition of a global agro-food regime controlled by agribusiness. Indeed, the corporations that control the industrial chain boasts the highest concentration of power in the world.

We understand that the only way of overcoming the climatic and energy crises that threatens the continuity of the Life of the planet is the overcoming capitalism.

A transition is needed towards a post-petroleum society and a new sense of "development" built within a framework that is designed to overcome capitalism on ecological bases.

Energy issues and food production are the concrete and indivisible axes of resistance for the construction of another societal project and the building of new relations between peoples, co-existing as one with nature, - in order to subvert the colonial logic and subordination inherent in capitalism.

We agree that the political logic of the new global society in this path of transition - and the strategy of autonomy of the peoples over their territories - will have to be oriented by the central premise of guaranteeing Energy Sovereignty in harmony and complementing the radical defence of Food Sovereignty.

Therefore, the only consistent debate on agrofuels must be framed in a new paradigm of dedevelopment that includes a radi-

cal structural transformation of the whole global economy and of our way of life and the dismantling of the macro energy system that sustains and guarantees the current global power relations.

We are attempting to open this debate in the heart of the "left wing" sectors in our different regions of the globe, restating in these radical terms this offer to overcome capitalism at this historical moment.

Because of the strategic role of the Latin-American region in the promotion and installation of the global model of Agro energy, and bearing in mind the Biofuel's International Conference, supported by the UN set to take place in Brazil in July 2008, we reaffirm our task of promoting the "Socialism of the 21st century"

In order for this vision to be a part of a political program of the post petroleum era, we, the undersigned commit ourselves to reframe our positions – without any concessions to capital – as imposed by the current energy and ecological crisis.

RALLT

THE INTERNATIONAL ECO-LOGICAL CALL*

PROPOSES TO LINK
THE ISSUES OF
CONSERVATION OF
BIODIVERSITY, CLIMATE
CHANGE AND THE RIGHTS
OF INDIGENOUS PEOPLES

The international eco-logical call, is a common strategy to save the areas of greatest diversity, leaving the captured carbon underground, based on the Climate Change Agreement other international and agreements via which the worlds governments committed to conserve worlds biodiversity, reduce poverty, respect human rights in general and those of indigenous peoples in particular.

The proposal will be applied in protected areas, threatened and affected areas by oil activities, which are the main causes of Climate Change.

Objective of the

proposal

- That national States abstain from extracting oil from protected areas, because it is incompatible with conservation.
- That the States that abstain from exploiting their resources in protected areas be compensated for these decisions in the benefit of the planet.
- Achieve international commitments from countries that have

agreed not to produce more CO₂ to pay countries, which decide not to place their oil resources on the market, with donations conditioned in relation to external debt.

• Add to this international community effort, a fund to build international funds to pay for the existent value of important protected areas at a global level, in threat of being destroyed if the intention of submitting them to exploration and exploitation activities continues.

2. Expected results

The proposal implies local, national and in global benefits. It coherently articulates global conservation objectives, protection of economic, social, cultural, environmental and collective rights; relief from foreign debt and solutions to climate change.

If these activities are stopped it will avoid that new emissions of CO₂ reach the atmosphere, both due to the Carbon contents in the hydrocarbons underground as well as the carbon contents of the forests which will not be logged for oil activities, which would benefit the whole of humanity; at the same time it guarantees the conservation of cultures and biodiversity of human heritage.

An indirect effect would be to reduce the pressures from foreign debt by freeing funds from national budgets to be able to spend of social services and additionally governments would have at their disposal new resources for their national accounts.

This proposal does not imply merchandizing of life or a payment for environmental services and would not lead to any form of property rights or use over the area of the project, contrasting with those proposals questioned by local communities which imply a loss of their sovereign rights.

There exists an initiative at an international level from various foundations and political sectors to destine funds to support these types of initiatives. On the other hand, countries which have ratified the Kyoto Protocol and form part of Annex I, have the obligation of assigning funds to reduce green house gasses especially CO₂.

Therefore we propose this meeting of experts on Protected Areas proceed to:

- Form a commission of experts to analyze national proposals that arise from this context.
- 2Analyze technical and legal routes by which States can regulate adequately this decision and in the case of there being contracts or concessions, start a process of reverting them and evaluate socioenvironmental impacts in these areas and the needs of environmental restoration and corresponding indemnities.
- Start a process to identify potential donors and create a capital fund to generate interest equivalent to the revenues that the States would gain from exploitation. If a future government violates the clauses of the agreement the capital fund would be returned to the donors.
- Promote the proposal at an international level.
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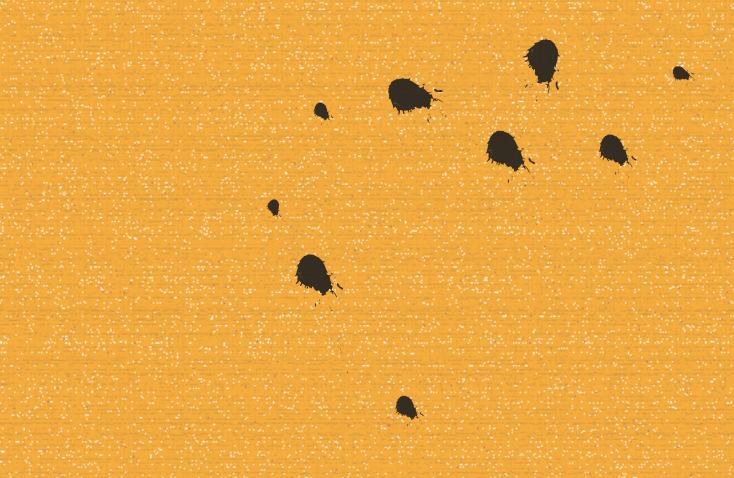
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OILWATCH



to the first step.

