

WORLD RAINFOREST MOVEMENT MOVIMIENTO MUNDIAL POR LOS BOSQUES TROPICALES

International Secretariat
Ricardo Carrere (Coordinator)
Maldonado 1858; CP 11200
Montevideo - Uruguay

Ph: +598 2 413 2989
Fax: +598 2 410 0985
Email: wrn@wrn.org.uy
Web site: <http://www.wrn.org.uy>

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THE FOCUS OF THIS ISSUE: FORESTS, PLANTATIONS AND HEALTH

People rarely relate forests with health issues. At the most, forests –particularly in tropical areas- are perceived as a source of present and future medicines that can provide cure for many human diseases. Given the recent meeting in Ecuador of the Second People's Health Assembly, we decided that this was a good opportunity for dedicating a full WRM bulletin to share information on this issue. We hope that the information provided will serve to generate awareness on the importance of forests for human health and on the impacts that deforestation, forest degradation and monoculture tree plantations have on the health of millions of people worldwide.

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OUR VIEWPOINT

- Forest peoples' health depends on the health of forests

Forests provide for the livelihoods of hundreds of millions of people worldwide and particularly in the tropical areas. Whatever activities are carried out that imply deforestation or forest degradation will therefore impact directly on the means of survival of those people and thus also on their health.

One of the immediate effects of forest loss is a decrease in the availability of the food provided by forest plants and animals, such as fruit, seeds, roots, honey, vegetables, mushrooms, insects, meat, and so on. The result will be malnourishment, which generates conditions for disease, particularly –though not only- in children.

At the same time, some of the activities leading to deforestation and forest degradation add other problems which impact on local people's health. Such is the case of oil exploitation, which brings in air and water pollution over huge forest areas. Local communities are left with no option but to continue drinking, cooking and bathing in contaminated water and breathing the polluted air, all leading to increased illnesses. The same happens with open-pit mining and pollution linked to the poisonous chemicals used by this industry.

Industrial logging, hydroelectric dams, commercial shrimp farming, large-scale agriculture, cattle-raising, monoculture tree plantations are also important activities leading to forest loss. In many cases, these and the above activities are imposed on communities against their will, thus generating a situation of social stress that also impacts on people's physical and mental health. More than often, they also lead to repression and to the ultimate blow on health: murder.

There is also a toxic war that is unleashed against local communities. Perhaps the worst case is the current herbicide spraying being carried out by the US-backed Colombian government allegedly to combat coca cultivation. But a "low level war" is also being staged in numerous countries through the use of toxic chemical spraying in large scale agricultural or tree monocultures. This results in yet additional impacts to local people's health by polluting their water and air, while plantation workers are even more at risk by manipulating those toxic products.

For some forest peoples, the main threat is bacteriological. Isolated indigenous forest communities are facing – though they are unaware about this- the most serious health hazard: the introduction of new diseases to which their organisms are not adapted. In the past, the introduction by Europeans of smallpox, measles, typhus and other diseases proved much deadlier than the European's weapons used against the Amerindian population. In the past, the colonizers may have had the excuse of ignorance but today's governments and corporations certainly don't.

In the case of most forest peoples, who traditionally use a wide variety of medicinal plants available in forest areas, the most immediate cause of concern is the loss of medicines. Deforestation and substitution of forests by other commercial activities (such as agriculture, cattle raising, timber and oil palm plantations) result in the scarcity or even total disappearance of some of those plants at the local level, thus eliminating this vital resource when it is most needed to cure the illnesses resulting from those same activities.

It is important to underscore that for indigenous peoples, health is not constrained to the narrow concept of lack of illnesses but is a dynamic process that covers social and economic aspects. For them, the forest is part of their identity, their cultural practices and beliefs; they coexist with the forest through interdependency. If the forest is gone, also their identity is gone which is to say their life, their health.

In sum, the health of forest and forest-dependent peoples is highly dependent on the health of the forest ecosystem. If governments are serious in their discourse about the importance of health, then this is an additional reason for generating the necessary conditions for forest conservation.

FORESTS AND HEALTH

- Ecosystem health, our health

The forest is the cradle of biodiversity, that is to say, the origin of life. When the forest is healthy, water springs from it, the air is purer and more fragrant, we can obtain shelter from its many resources, it gives us food, art is expressed in the myriad of colours and hues that are cyclically unfolded and concealed and in the midst of all this beauty and prodigality, it is possible in some way to feel the love that nature shares with all its beings.

We, as individuals of the human species are also part of this ecosystem insofar as we are interrelated with it; not only the indigenous peoples that inhabit the forest, but also the inhabitants of cities, of deserts and hills depend on forests, on the fundamental role they fulfil on the planet. However, at some time in history, processes started taking place that separated us, very often wiping out the memory of the systems' eco. And thus, we allowed health to stay outside us.

This is why talking about the defence of forests is talking about health. However, it is also pertinent to define what health we are referring to when we talk about health.

Very often health is equated to the absence of disease and the way to achieve it is based on medical care and/or drugs. Thus, when talking about the right to health in general the reference is to the right to have access to medicine – the official and dominating one – and its resources. The indicators register quantitative data – the number of doctors and hospitals per inhabitant, birth, death and nutritional state indicators, descriptions of the distribution of infectious or chronic diseases – in order to measure the health of a population.

In this neo-liberal stage of capitalism we are living in, – like so many other things – health has become merchandise. Laboratories and the pharmaceutical industry grow in the shadow of wars and, brandishing the flag of peace and health, they assault the forest and appropriate the curative properties of its plants and trees, benefiting gratuitously from the knowledge accumulated by the communities through trial and error, generation after generation. The healing properties of forest products, formerly free, have been patented, bottled, labelled and marketed by companies, at a high cost for the consumers.

The indigenous peoples' concept of health is in general holistic and dynamic. For the Amazonian Matsigenkas from the Urubamba River basin in Peru, health is being healthy and feeling well and in this, physical health is only one of the elements. For them "being healthy" reflects aspects of life that western science could separate into biological, environmental, social and psychological aspects and not only bio-medical ones. Affected by the Camisea Gas Project -a group of consortia devoted to the exploitation and transportation of gas in the Urubamba River basin (see WRM bulletin No. 62)- the Matsigenkas relate the worsening of their state of health to the new anxieties and social conflicts that have arisen with the "development" of the area (the repeated efforts since the beginning of the eighties to find and exploit hydrocarbons), the dramatic social changes that have taken place and the effort to maintain their values and their ways of life.

In Mexico, for the Mixes of Santo Domingo de Tepuxtepec, for the Zapotecos of San Juan Tabaá, for the Chatinos of Nopala, the energies of nature are understood as having an influence and being responsible for the health of the surroundings and the community – consequently, of individuals too. Their culture is deeply related to nature, understood simultaneously as the natural and supernatural worlds. For them, the hill is their life; the trees are brothers; the forest is a place to respect; flowers and plants are sources of help to cure; water is the blood that nurtures their fields; the rocks are protection and strength; the sun is the father of life; the earth is the mother who gives what is necessary to live. Around these images of surroundings are all the spiritual elements inherited from their forefathers and learnt as children in the bosom of their families and their community. When all this is in balance, there is health - that is the way they see it.

One of the definitions of the World Health Organization states "Health is a state of complete physical, mental and social wellbeing and not only the absence of illness or disease." This is a concept that implies a major step forward with respect to the limitation that equated health with access to medical care. However, it is worth asking what State puts this into practice in its health policies. And, up to what point, do the policies and positions of WHO itself represent a vision in which the absence of disease is inextricably united to economic, political and socio-cultural factors?

On the other hand, the WHO definition offers a general framework that can be acceptable to many cultures, but it does not cover the specific habitats and health traditions of the Planet's diverse cultures. For example, the concept of mental health varies. For many indigenous peoples, persons who hear the spirits talk are looked at with reverence and live with the community. However, in western and urban culture, they are qualified as schizophrenic, medicated and perhaps confined to a psychiatric institution.

When meeting for the first time, the indigenous peoples of various cultures are amazed because they share the same basic originating culture, in spite of the fact that they have major differences. They consider that what makes them different from the dominating western society is a relationship with nature, in which they are not outside it but a comprehensive part of it, together with the notion that there can be no economic interest above the need to preserve ecosystems because the bonanza of the present cannot be achieved through the desolation of the future.

In western societies, or in societies that have been invaded and impregnated by their dominating vision, "developmentism" places human beings outside Nature and even against it and health problems are addressed by fragmented science, increasingly backing commercial interests and parading a dominating attitude.

The recovery of ecosystem thinking, thinking in function of the health of the ecosystems, enables us to understand that peoples' health and life are related with the health of all the ecosystem's components: soil, water, flora, fauna, air and of course, human beings, with their social, political, economic and environmental relationships. This notion of interrelationship produces ethics that are different from those of the dominating system, ethics that respect life. And also a rationale that obliges the focus of policies, strategies and plans to be centred on ecosystem health.

By Raquel Núñez, WRM, e-mail: raquelnu@wrm.org.uy, based on information from: "Salud de los ecosistemas. Un pensamiento articulador", Julio Monsalvo, <http://www.altaalegremia.com.ar/>; "La salud de los pueblos indígenas y el Proyecto de Gas de Camisea", Report for AIDSESP, Dora Napolitano, Carolyn Stephens, <http://www.lshtm.ac.uk/pehru/communities/camisea-salud.pdf>; Medicine Keepers: Issues in Indigenous Health, Lori A. Colomeda and Eberhard R. Wenzel, <http://www.ldb.org/indheal.htm>

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- Affluence without abundance: the hunter-gatherers --a sound road to health?

In an attempt to build or recall a holistic vision of health as a balanced condition where the joy of living can emerge, it may be relevant to think over different sorts of living –very different from the allegedly advanced western modern life: hunter-gatherers, for example.

Hunter-gatherers consume less energy per capita per year than any other group of human beings. Yet when you come to examine it, the original affluent society was none other than the hunter's - in which all the people's material wants were easily satisfied.

There are two possible courses to affluence: wants may be "easily satisfied" either by producing much or desiring little.

The familiar conception based on the concept of market economies states that human beings' wants are great, not to say infinite, whereas their means are limited, although they can be improved. Thus, the gap between

means and ends can be narrowed by industrial productivity, at least to the point that "urgent goods" become plentiful. But there is also a road to affluence which states that human material wants are finite and few, and technical means unchanging but on the whole adequate. Adopting this strategy, a people can enjoy an unparalleled material plenty - with a low "standard of living" from a Western viewpoint.

The traditional dismal view of the hunters' fix goes back to the time Adam Smith was writing, and probably to a time before anyone was writing. Maybe it was one of the first distinctly neolithic prejudices. Current low opinions of the hunting-gathering economy need not be laid to neolithic ethnocentrism. The existing business economy will promote the same dim conclusions about the hunting life.

Is it so paradoxical to contend that hunters have affluent economies, their utmost lack of possessions notwithstanding? Modern capitalist societies, however richly endowed, dedicate themselves to the proposition of scarcity. Inadequacy of economic means is the first principle of the world's wealthiest peoples. The market-industrial system institutes scarcity, in a manner completely without parallel.

Scarcity is the judgment decreed by the capitalist economy. And it is precisely from this anxious vantage that we look back upon hunters. Yet scarcity is not an intrinsic property of technical means. It is a relation between means and ends. We should entertain the empirical possibility that hunters are in business for their health, a finite objective, and that bow and arrow are adequate to that end.

For most hunters, such affluence without abundance need not be long debated. A more interesting question is why they are content with so few possessions for it is with them a policy, a "matter of principle", and not a misfortune. But are hunters so undemanding of material goods because they are themselves enslaved by a food quest "demanding maximum energy from a maximum number of people", so that no time or effort remains for the provision of other comforts? Some ethnographers testify to the contrary that the food quest is so successful that half the time the people seem not to know what to do with themselves. On the other hand, movement is a condition of this success, more movement in some cases than others, but always enough to rapidly depreciate the satisfactions of property. Of the hunters it is truly said that their wealth is a burden. In their condition of life, goods can become "grievously oppressive".

Mobility and property are in contradiction. That wealth quickly becomes more of an encumbrance than a good thing is apparent even to the outsider.

The hunters, one is tempted to say, are "uneconomic" human beings. At least as concerns non subsistence goods, they are the reverse of that standard caricature immortalised in any *General Principles of Economics*, page one. Their wants are scarce and their means (in relation) plentiful. Consequently they are "comparatively free of material pressures", have "no sense of possession", show "an undeveloped sense of property", are "completely indifferent to any material pressures", manifest a "lack of interest" in developing their technological equipment.

From the internal perspective of the economy, it seems wrong to say that wants are "restricted", desires "restrained", or even that the notion of wealth is "limited". Such phrasings imply in advance an Economic Human Being and a struggle of the hunters against their own worse nature, which is finally then subdued by a cultural vow of poverty. The words imply the renunciation of an acquisitiveness that in reality was never developed, a suppression of desires that were never broached. It is not that hunters and gatherers have curbed their materialistic "impulses"; they simply never made an institution of them."

A good case can be made that hunters and gatherers work less than we do; and, rather than a continuous travail, the food quest is intermittent, leisure abundant, and there is a greater amount of sleep in the daytime per capita per year than in any other condition of society.

The world's most "primitive" people have few possessions, but they are not poor. Poverty is not a certain small amount of goods, nor is it just a relation between means and ends; above all it is a relation between people. Free

from market obsessions of scarcity, hunters' economic propensities may be more consistently predicated on abundance than our [Western] own.

A holistic vision of health could well imply probing into the sheer basis of our societies, in a quest not only for health but for healthy societies. In that sense, for many living in modern "affluent" societies, the simple and plain freedom from whatever need may be a sound road to health.

By Raquel Núñez, WRM, E-mail: raquelnu@worm.org.uy, based on excerpts and adaptations from: "The Original Affluent Society", Marshall Sahlins, <http://www.eco-action.org/dt/affluent.html>

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- Sketches of personal experience with tree life

"We are shown that our life exists with the tree life, that our well-being depends on the well-being of the Vegetable Life ..." is what I read over and over again in the "Message to the Western World" sent by the Six Nations Iroquois Confederacy -from the northwest of the North American continent- to the United Nations in 1977.

Reading and re-reading this document time and time again causes a sensation of finding myself before a revealing message. Today I would like to share some of the personal experience that was generated by my becoming aware that my welfare, my health, my life itself are all related to the life of trees, to the life of forests.

The mulberry tree in the patio of my home: I relate intensely with this mulberry tree that in my eyes rises high in the patio of my home. I am so young that I do not go to school yet and so I have all that potential that children have "before they are taken" to be tamed through that so-called "formal education." I live fascinating adventures. I talk to the mulberry tree and it answers me. Sometimes it is the tree that talks to me. It suggests ideas, it shows me marvellous maps drawn on its leaves, it advises me how to make my tree-house among its branches from boxes that I have begged from a man who comes round selling vegetables in a little cart pulled by a mule through the mud streets of the humble neighbourhood of that big city where I live.

Installed among its branches I am very close to the sparrows and hummingbirds. The butterflies are my friends. I feel that the mulberry tree and I vibrate together when I hug its trunk and I grab its branches to climb higher and from there I see a different world.

Now I am not such a child. I am moving to another house wanting to make my own nest. Before leaving I look at the mulberry tree. We don't say anything...we just look at each other. .

It is the morning of a day following many others on the calendar. It is almost midday. I see that they are taking out the mulberry tree, cut into several pieces. I ask why they have killed it. They tell me that its roots were lifting up the mosaics of a gallery. Something breaks inside me and I feel pain, a lot of pain.

The Western Chaco: we are in 1976. State terrorism has taken over with the power to decide on the life and death of everyone in Argentina. After a quick family council, I decide not to leave the country. In a sort of "internal exile" I move to the Western Chaco with part of my family.

I started working in an institution that was developing a project with the communities of the Toba-Qom originating peoples. I travel inside the Chaco forests with young Qom members. I am amazed by the "Algarrobo" forests.

I discover that trees have a spirit. It is a slow, soft discovery. It is a colossal discovery that teaches me daily sharing with the Qom people. I understand with amazement and happiness that I am beginning to unlearn many things and apprehending others that become the most important and transcendental things in my life.

I perceive the "value" of the "algarrobo" tree. I say the "value" and not the "price" of the "algarrobo". This differentiation between "value" and "price" is what makes me aware of the essential values of the two cultures that live together in this scenario.

One of these, the dominating one, puts a "price" on everything, subtly obliging the members of the other culture, the dominated Qom, those who value everything, to destroy the native forests, particularly the Algarrobo forests. For this timber has been given a "good price." A sawmill has been installed and a carpenter's shop to make furniture. This furniture is not intended for the homes of Qom families but to be sold to the "big city" in the framework of a developmental conception and under the rational of "we are so good that we give work to these poor people."

I feel pain over this imposition that I see and suffer and feel pain over the murdered algarrobo trees, a pain like I felt when I saw my mulberry tree cut into pieces. And thus this story is woven, my story, learning and unlearning, in a direct and very strong way, what love for plants is.

In the country of my interior silences: it is the beginning of the nineties... I am in the south of Chile on the Isla de los Ciervos. It is private property belonging to Don Giorgio who lives in Italy and once a year visits the Island. Don Giorgio does not want the Island to be contaminated. For example, the water is supplied to the dwelling by gravity. No motors are used. Don Alonso and his 17 year-old son, "Patito" are the only inhabitants.

We are very cordially received and taken along paths where enormous trees are columns holding up a continuous canopy of branches. From time to time the canopy opens and the sky presents us with its varied hues an infinity of blues, while the leaves dance with lights and shadows. Cascades of coigue trees with their strong red colouring, sparks of life, illuminate this Temple of Nature. Flowers of all colours peek out from the moss, between the branches and trunks, spilling their perfume and adorning this happy sanctuary of life in all its splendour.

We walk in silence. This silence enables us to enjoy the choral symphony of songs and murmurs of birds and rivers that slide along, fertilizing the land. The soil talks to me. The soil is alive. The elasticity of this soil, covered in a carpet of moss, ferns, leaves, and petals invites me to share its vital vibrations. My intuition tells me that I am barely beginning to understand the dialogue of the Originating Peoples with Mother Earth. Suddenly I find two enormous trees, two formidable columns that share the same roots. I am absorbed by something I had never seen before. Patito sees that I am overwhelmed. With a smile he approaches me and says "See? They both share the same root! For me, here underground, all the roots are shared..."

Here, in the country of my interior silences, in my bodies I listen again to what "Patito" told me. I relive the impact of his words. I relive my feelings of solidarity with life, my feelings of belonging, all us beings belong to each other. We are Nature. We "inter-are", a beautiful new word that tells me that I am in the other - that I am in all living beings.

The wealth of cultural biodiversity teaches me to unlearn and to apprehend. Life has given me to get to know various Originating Peoples' cultures. I discover that they all have something in common: they feel they belong to Nature. They all feel this belonging, all...except western culture. I become aware that I was born and bred in a culture with an anthropocentric paradigm that gives priority to "man" (the macho man) as a superior being. From these cultures I understand that the centre is in life, in every form of life, that its paradigm is bio-centric. In this paradigm centred on life is the one in which today, I feel that I am in the world.

The child who was wise talking with his mulberry tree was taken to "school" and to many schools...however... I feel that this wise mulberry tree has had a lot to do with this child never letting the flame of rebelliousness die, they were never able to tame him and thus he came, with his pores wide open to find the wisdom of the Peoples that have always been here, that live in harmony, cooperate, with an ethic of solidarity.

Today I feel-think that I am a Forest and that my health, my whole life, is thanks to tree life.

By Julio Monsalvo, e-mail: alta_alegremia@yahoo.com.ar

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- Laos: In the cooking pot - indigenous Katu diet and livelihoods

Like many other Indigenous Peoples, the Katu in Laos depend on the forests for their livelihoods. Living in the heavily forested Annamite Mountains near the Vietnamese border, the Katu in Laos practise shifting cultivation and hunt and gather much of their food, fibres, medicines and building materials in the forest. Until recently, that is.

A new study of four Katu villages in Sekong province in the southeast of Laos describes the impacts that a deteriorating environment and restrictions on traditional livelihoods are having on Katu people's diets, health, culture and livelihoods.

Jutta Krahn, a nutritionist at the Department of World Food Economics at Bonn University in Germany, spent two years documenting exactly what the Katu eat. Two of the villages she looked at, Ban Tham Deng and Ban Thong Kai in Kaleum district, are surrounded by forest. The other two, Ban Kandon Mai and Ban Nongbong in Thateng district, are near roads in severely degraded forest but with access to markets and governmental services.

Krahn recorded about 700 plants and animals that were part of the Katu's traditional diet. Her research showed that in the early 1960s the Katu ate a varied range of fruit, vegetables and wild meat which met their nutritional requirements. Today, the Katu eat more rice but less wild meat, root and tuber crops, and less starchy "filling foods" like coarse grains and maize.

Traditional preparation and flavouring techniques are disappearing, which leads to reduced nutrients in food. For example, explains Krahn, the Katu traditionally cooked small animals or birds by mashing the meat with all the bones and cartilage in a bamboo tube which they simmered over the fire. "This kind of minced meat contains a lot of calcium and iron. If you prepare the same food in another way the minerals would not be as easily absorbed."

Krahn found that the Katu's intake of iron, zinc, calcium, B-vitamins, fat and protein is lower than in the past. Children in all the villages Krahn studied suffered from high levels of stunting and wasting and many were underweight. The introduction of wetland rice production has not replaced the loss of dry rice production in swidden fields. Growing vegetables and fruits has not substituted reduced harvest rates of wild vegetables and fruits.

The Katu living in Ban Tham Deng and Ban Thong Kai have a better diet than those living close to markets. "The villages in the forest had a considerably higher intake of wild meat and also of fruit and vegetables," says Krahn. "In both villages which were close to the market, Ban Nongbong and Ban Kandon Mai, there were families which only had meals twice a day."

The Katu are facing new health problems, including malaria and worm infestations, which they say are much worse than in the past.

Krahn believes that the impacts of the US bombing and spraying of defoliants during the war against Vietnam urgently need further investigation. Katu villagers told her that at the beginning of the war the fish died and floated belly-up in the rivers. They told her of abnormalities with their cattle and mothers whose children had birth defects. Krahn is worried that "dioxins and furans are persistent in the ecosystem. I believe that they are still present."

Logging is rampant in Sekong province, threatening the Katu's forests. In 2002, according to a report by Charles Alton, a UN consultant, and Houmphon Rattanavong, of the Lao National Science Council, a company arrived in Ban Tham Deng with a pile of what seemed to be official documents and started logging. Then loggers came and started cutting *Aquilaria* trees. *Aquilaria* trees are highly valued for their resin which is used to produce medicine,

incense and perfume. In 1999 to 2000, rattan in Ban Tham Deng was cut "almost to the point of complete destruction" write Alton and Houmphan. In each case, villagers in Ban Tham Deng received nothing.

Krahn suggests a new approach to "food security strategies" in Laos is needed, one which puts more attention on cultural aspects of food and nutrition, as well as the environment.

"My starting point," she says, "would be the different ethnic groups, their food cultures, cuisines and their diet. Because there is no information both the government and the development organisations focus too much on food production, especially wetland rice. I would say that the government and development organisations could balance this by facilitating more research and detailing the food security concepts for the various ethnic groups and different geographical locations."

It's important to look at food quality as well as quantity. Working at the "cooking pot" with Katu women, who are responsible for the health of their family, would bring additional results in terms of optimising nutrient intake, says Krahn.

By Chris Lang, e-mail: chrislang@t-online.de

Jutta Krahn can be contacted at jukrahn@gmx.de A summary of her report on the Katu is available here: <http://www.wrm.org.uy/countries/Laos/Katu.html>

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- The Second People's Health Assembly

From 17 to 23 July in Cuenca, Ecuador, over 1,300 participants from 80 countries in the five continents met under the slogan of "The voices of the Earth are calling" to analyze global health problems and to draw up health promotion strategies for all. The final declaration at the end of the event identifies neo-liberal policies transferring wealth from the South to the North, from the poor to the rich and from the public sector to the private sector, as the main cause of the worsening of the health conditions of the majority of the world population. Privatization of public assets and "free trade" the brand of neo-liberalism, rely on the World Trade Organization (WTO) and International Financial Institutions to control factors affecting health. In a world where racism, oppression of women, social exclusion, generation of poverty, wars, individualism and increasingly intense and accelerated destruction of the environment prevail, there cannot be health.

The links of health with those other factors led to various poles of discussion being established at the event, *inter alia* such as: health and the environment, inter-culturality and health, equity and the health of the population, trade and health, health in the hands of the people. Within the issue of health and environment, the World Rainforest Movement (WRM), addressed the link of health with climate change and deforestation.

The Second People's Health Assembly appealed to the peoples of the world to mobilize themselves and face the assault on the right to health and to defend it through a wide-ranging mass mobilization, linking it with struggles for the right to water, defence of the environment, food sovereignty, gender equality, the right to a decent job and housing and universal education. Through these struggles of resistance, a vision of a socially and economically more just world is proposed, where peace and respect prevail in an intercultural context, incorporating diverse knowledge, where people celebrate life, nature and diversity.

The WRM supports this appeal, which follows the lines that led it to work in the World Social Forum for the integration of social movements that are already building other possible worlds, from themselves and their sovereignty, linking with others.

In our defence of forests, in our resistance to public policies that impact on them (and on us), we support those popular processes that are taking back issues into their own hands, such as community forest management within the Mumbai Forest Initiative (see WRM bulletin No. 78); climate change within the Durban Group (see WRM bulletin No. 89), and health within the People's Health Assembly.

By Raquel Núñez, WRM, e-mail: raquelnu@wrm.org.uy

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INDUSTRIAL ACTIVITIES, FORESTS AND HEALTH

- Death and disease: The oil curse

Thousands of indigenous peoples are displaced from their land, which is militarized and expropriated in an unending genocide. Oil exploitation is carried out – causing damages that go uncompensated – without consulting the communities and with the connivance of the government of the time. Transnational companies such as Shell, Repsol, and Maxus appropriate territorial spaces under the pretext that they are of “public utility”, they contaminate bodies of water and river beds, they deforest virgin forests and generate impacts destroying the future.

In Colombia, the Guahibo indigenous peoples who inhabited the Arauca savannahs were decimated by the activities of the Occidental Petroleum Company. The Yariguís and Aripis were exterminated by the Standard Oil Company in 1915; in 1931 the Bari-Motilon people were violently attacked by the Gula, Mobil and Texas Petroleum Companies that indiscriminately murdered, set up electrified fences or gave out poisoned salt which they threw from planes as presents. In 1960, the Inga, Siona and Cofan peoples were scattered and their rivers turned into sewers by the oil industry. In 1980, Occidental and Shell subdued the Saliva and Sicuani, Betoye, Hitnu or Macaguane, Hitanu or Iguanito and Dome Jiwi, expropriating 70-95% of their territories and leaving them in utter poverty. In 1991 243 indigenous leaders of the Zenu, Koreguajes, Pastops and Pijao peoples were murdered. In 1992, the exploration company Fronteras launched the genocide of the Nukak people and at the end of the nineties Occidental frontally attacked the U'wa people.

These are not isolated cases. In Ecuador, companies such as Texaco wiped out the Tetete people and attacked the Signa, Secoya, Cofan and Huaorani people, almost exterminating them. In Peru, Shell pushed the Nahua people to the brink of extinction.

In Nigeria, the United States oil company Chevron Texaco continues to be accused of committing atrocious violations of Human Rights against the Niger Delta communities, in three incidents perpetrated between 1998 and 1999 against the Ilaje, Opia and Ikenyan communities. The attacks included assaults on unarmed people with firearms, summary executions, torture, maltreatment, unjustified destruction of properties and razing of their environment and way of life.

Environmental degradation included the loss of fresh water sources while the company opened up numerous channels from the sea towards the coast to install their equipment. According to Bola Oyibo, leader of a group of one hundred and twenty-one young people from 42 communities advancing on the Chevron Parabe platform to protest against the continuous destruction of their environment “For years Chevron has systematically undertaken a war against our lands, forests and waters. Come to the Awoye Community and see for yourselves what they have done. All is dead, mangroves, tropical forests, fish, fresh water, wildlife. All has been killed by Chevron...”

For its part, also in Nigeria, Shell started drilling oil wells in Owukubu without consulting the Odioma community. This led to a community crisis that snowballed into a series of fatal events, leading to the death of over 1,500 people, hundreds of injured, 3,000 people arrested as hostages and a considerable part of the population fleeing to the mangrove forest and other villages (see WRM bulletin No. 92).

In Indonesia, the Province of Riau, on the Sumatran coast has long been classified as a rich zone because there are oil fields, in addition to mining, gas and thousands of hectares of oil palm plantations. However the income from these activities has not enriched the lives of the Riau community. On the contrary, the poverty rates have reached 40.2 per cent of its population of 4.5 million inhabitants. The main actor in the exploitation of oil is PT Caltex Pacific Indonesia (CFI), owned by Chevron Texaco.

Within this picture of poverty in Riau, the Sakai tribe is the direct and indirect victim of oil action. They live on the forest edge and along the Siak River, using its waters to bathe, eat and drink. However the waters are polluted and they continue to use them as they have no other option. Their staple food is a kind of tuber, the ubi manglo, which grows around their houses. Although it is considered to be toxic, the Sakai people continue to eat it because they have become used to its secondary effects, but more because now they have almost no other food options left in the forest.

To the genocide of entire peoples are added isolated, concealed deaths caused by oil accidents and by the terrible contamination they generate.

The contact of pollution with the organism comes by way of personal hygiene, consumption and breathing, thus generating skin diseases, diseases of the respiratory system, the digestive apparatus, eyes, nose and throat and gynaecological troubles. However, it also contributes to increase malnutrition, anaemia, tuberculosis and miscarriages. The cancer prevalence rate has increased enormously in the peoples close to the sources of contamination, and most affects children under 14 years of age.

The wells close to the crude oil ponds are polluted by the chemical products that infiltrate them, also killing domestic animals which for many members of the communities, fulfil the functions of consumption, trade and economic reserves in times of emergency. For these families, their disappearance leaves them in poverty and deprives them of their food sovereignty.

Once it starts depending on oil, the State finds it hard to diversify its economy and promote other sectors that contribute more direct benefits to underprivileged sectors. The dependence on oil becomes an obstacle to types of economic activities that favour low-income sectors of the population.

Far from being the so-called "black gold" bringing prosperity and welfare to the peoples, oil ends up creating a cursed circle of impoverishment, contamination, disease and death.

Article based on information from: "América se escribe con sangre" (America is written in blood), Adolfo Maldonado Campos, May 2005, Acción Ecológica, <http://www.accionecologica.org/webae/index.php>; "Chevron, mano derecha del imperio", 2005, Oilwatch report, <http://www.oilwatch.org.ec/>; "Ecuador ni es ni será ya país amazónico. Inventario de impactos petroleros", 2001, Acción Ecológica, <http://www.accionecologica.org/webae/index.php>

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- Indonesia: The health impacts of living near Indah Kiat's pulp and paper mills

In 1999, the World Bank's Economics of Industrial Pollution Control research team published a report titled "Greening Industry". The report, which was the result of "six years of research, policy experiments, and firsthand observation", described Asia Pulp and Paper's PT Indah Kiat Pulp and Paper as a "success story".

Indah Kiat's operations at Perawang, Sumatra tell a different story, at least for local people. Indah Kiat started its first pulp mill at Perawang in 1984 with an outdated factory imported from Taiwan. The 100,000 tonnes a year pulp mill used elemental chlorine and wastes were discharged into the Siak River.

According to the World Bank, protests from local villagers about pollution from Indah Kiat's Perawang mill, led to "round one of the mill's cleanup". In 1992, Indonesia's Environmental Impact Management Agency, BAPEDAL, mediated an agreement in which, the World Bank tells us, Indah Kiat agreed to meet the villagers' demands.

Indah Kiat's factory at Perawang now covers an area of 400 hectares and has a capacity of two million tons a year of pulp and 700,000 tons a year of paper. Indah Kiat's new pulp mills use technology that is "largely chlorine free" according to the World Bank. Indah Kiat, the Bank would have us believe, is "an environmental paragon".

Unfortunately, as is often the case, the World Bank's enthusiasm about the environmental benefits of a massive industrial project bears little relation to reality. In 2004, Mats Valentin and Kristina Bjurling, researchers with Swedish NGO SwedWatch, reported that Indah Kiat uses a mixture of chlorine bleaching and elemental chlorine free (ECF) bleaching. Indah Kiat's management told SwedWatch that the company planned to change fully to ECF technology in the future, but added that "such an investment would be too large to bear right now".

In 2001, John Aglionby of the UK Guardian newspaper visited Indah Kiat's mill in Perawang. He described what he saw as "a monster blot on the landscape". The company's track record "has been a catalogue of environmental devastation, blatant disrespect for the local community and ignoring Indonesia's laws through a mixture of bullying and pay-offs to officials," Aglionby wrote. The journalist uncovered a list of payments made by Indah Kiat to government officials, police and army officers.

Six years research, it seems, did not help the World Bank's ace research team to uncover any pay-offs to government officials. The Bank's "Greening Industry" states simply that Indah Kiat's operation in Perawang "is fully compliant with national pollution regulations".

A year after the "Greening Industry" report came out, Inge Altemeier, a German film-maker, visited Sumatra to investigate the impact of pollution from pulp mills on local people and their environment.

She found and filmed an illegal outlet from Indah Kiat's mill, which the company used at night. During the day the output was not in use, but the air stank and dead fish floated in the river.

In a village near Indah Kiat's mill, people complained about the bad smell and told the film-maker that they were suffering from itching, headaches and vomiting. A villager called Tasjudin showed Altemeier his garden. Since Indah Kiat arrived, there are no more coconuts on his trees. The fruit on his trees is covered in black spots and it rots before it ripens. "Indah Kiat is ruining our lives. But what am I to do? This is my home, I have to live here," Tasjudin said.

Before Indah Kiat built its pulp mill, people could fish in the Siak River. They used the river for drinking water and for bathing in. Since villagers can no longer drink from the river, they demanded that Indah Kiat provide them with clean water. The company gave them a water pump. But villagers found that the ground water was also polluted and smelled bad. Villagers are forced to buy bottled water to drink. Many still wash in the river because there is not enough pumped water especially in the dry season.

Trabani Rab is a medical professor who has been monitoring the impacts of Indah Kiat's mill on villagers' health for several years. Altemeier travelled with him as he visited villages on the River Siak. In two days, he diagnosed more than 500 cases of serious skin diseases.

Earlier this year, two Indonesian NGO researchers, Rully Syumanda, Forest Campaigner with WALHI, and Rivani Noor, from the Community Alliance for Pulp Paper Advocacy, interviewed people in villages near to Indah Kiat's mill in Perawang. They also spoke to people living in Perawang. Villagers told them their vegetables, chillies and flowers did not grow normally, especially in the dry season. During the rainy season, a many of the villagers' hens and ducks die. They told the researchers they were sure that the cause was the smoke containing harmful chemicals from Indah Kiat's mill.

From 1987 to 1996, the air smelled very bad, villagers said. It has improved since Indah Kiat installed a filtering system on factory chimneys. But the air is still polluted and still causes respiratory problems, especially for visitors.

Villagers told Syumanda and Noor that before the mill started operations, fishers could catch 40 to 50 kilogrammes of fish a day in the Siak River. Today, they are lucky to catch four or five kilogrammes. Sometimes,

they said, the river smells really bad and they cannot catch anything. Every month, the river gives off a bad smell for a week.

While consultants and financiers of Indah Kiat defend the company by pointing to company records of emissions from its factories, the smell, the pollution, the poisoned river and the dead fish remain. Local people continue to suffer from headaches, itching and incurable skin diseases. Far from being an "environmental paragon", Indah Kiat is destroying lives and livelihoods.

By Chris Lang, e-mail: chrislang@t-online.de

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- Glyphosate herbicide, the poison from the skies

The herbicide glyphosate was identified in 1974 by John Franz, a scientist working for US-based agro-industrial multinational Monsanto. Today Monsanto boasts that its glyphosate products, which include the herbicide Roundup, are "among the world's most widely used herbicides".

Glyphosate works by interfering with the metabolism of the plant and a few days after spraying, plants wilt, turn yellow and die. Glyphosate herbicides also contain chemicals which make the herbicide to stick to leaves so that the glyphosate can move from the surface of the plant into the plant's cells.

After spraying, glyphosate herbicides can remain in soils for long periods. The herbicide can drift onto neighbouring fields, streams or hedges. Roundup kills beneficial insects. It wipes out habitat for birds and animals. Glyphosate causes genetic damage to fish. It is "extremely lethal to amphibians", according to assistant professor of biology Rick Relyea at the University of Pittsburgh. It is hazardous to earthworms. Glyphosate reduces nitrogen fixation. Roundup reduces the growth of mycorrhizal fungi. Roundup can increase the spread and severity of plant diseases (see WRM Bulletin no. 18).

Glyphosate herbicides can have a range of impacts on human health, including genetic damage, skin tumours, thyroid damage, anaemia, headaches, nose bleeds, dizziness, tiredness, nausea, eye and skin irritation, asthma and breathing difficulties. Several studies have indicated a link between glyphosate herbicides and non-Hodgkin's lymphoma, a type of cancer.

Not surprisingly, considering the amount of money that Monsanto makes from sales of glyphosate products, the company plays down the health risks of glyphosate. Monsanto claims that glyphosate herbicides pose only a "low risk to human health" as long as glyphosate is used "according to label directions".

Glyphosate herbicides are widely used in agriculture. Monsanto has developed a series of genetically engineered Roundup Ready crops which are not damaged by Roundup, no matter how much is sprayed on the crops. Those who are certainly damaged are local people and local environments.

Glyphosate herbicides are also used in industrial tree plantations, to kill off any plants which might compete with the trees for soil nutrients and water. This is particularly important for plantation managers when the plantations are established on land that was forested, to prevent the forest growing back. Glyphosate herbicide is often used to kill the trees themselves after the trees are harvested, especially in the case of eucalyptus trees, which re-grow after they are cut down. After two or three rotations, however, the growth is not as fast as from new seedlings. In addition, plantation managers often want to plant seedlings which are the results of the latest company breeding programme, rather than allowing the old trees to re-grow. As a result, vast areas of tree plantations are routinely sprayed with glyphosate herbicides.

But perhaps the most controversial use of glyphosate herbicides is in the US government's "war on drugs". For several years, the US has paid for aerial spraying of coca crops and opium poppies in Colombia.

In 2000, the Clinton administration approved a US\$1.3 billion aid package called Plan Colombia, aimed in part at eliminating drug production in Colombia. Five years and US\$4.5 billion of US "aid" later, Plan Colombia has failed to stop coca production in Columbia. The availability, price and purity of cocaine in the US, 90 per cent of which comes from Colombia, have remained stable.

A US military contractor, DynCorp International, carries out the spraying using a spiced-up version of Monsanto's Roundup. DynCorp employs more than 300 people and has 88 aircraft in Colombia to fulfil its contract under Plan Colombia. In 2004, aerial spraying reached record levels with more than 330,000 hectares of coca and poppy crops sprayed, according to the US Department of State. Yet the area of coca grown in 2005 was almost identical to that in 2003.

Aerial spraying is having a terrible impact on people living in rural areas of Colombia. The herbicide doesn't just kill coca crops, it kills food crops, livestock and fish as well. Spraying has also polluted villagers' water supplies. Areas of forest have been destroyed in operations reminiscent of Agent Orange (another Monsanto product) spraying during the US war in Vietnam. Yet more forest is destroyed when coca farmers whose crops have been sprayed move further into the forest to clear land for a new coca crop.

Medical records from hospitals in areas where the aerial spraying has taken place show significant increases in skin and eye irritations, fever, stomach aches and breathing problems among the local people.

Since Plan Colombia started, the US embassy in Bogotá has received more than 12,000 complaints about herbicide spraying from rural people in Colombia. As a result of these complaints, however, only 12 people have received any compensation. The total compensation paid out amounts to US\$30,000.

In May 2005, the US Department of State awarded a new contract to DynCorp to continue spraying in Colombia. Under the contract, DynCorp will receive US\$174 million a year.

The fact that Plan Colombia is not reducing drug production seems not to matter. People's health, livelihoods and the environment will continue to be destroyed as long as Monsanto's poison rains from the skies.

By Chris Lang, e-mail: chrislang@t-online.de

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HEALTH IMPACTS OF PLANTATIONS

- Australia: Health in Tasmania gravely affected by pesticide use in tree monocultures

Between 1994 and 2004 the land converted from native forests and farms to monoculture tree plantations in Tasmania has increased almost fourfold – to 207,000 hectares.

Most farms replaced were organic or used relatively few chemicals as compared to the highly chemically-dependent monoculture tree coupes that replaced them.

Pesticides are now used on an extraordinary scale. Taking full advantage of the exemptions to planning and environmental legislation and the general regulatory failure at all levels of Government to control pesticide use, the industry disperses toxic chemicals in cowboy fashion over thousands of hectares above tree canopies, at high altitude and over very large and broad areas of land. The toxic drift then further scatters over household rooves that collect rainwater for families, into until recently pristine creeks and rivers, over and in town water catchments and temperate rainforest alike. Not one patch of Tasmania is likely to be protected from a poisonous mist and runoff that must surely play a large part in the alarming climb in overall cancer rates and other inexplicable disease epidemics here.

Countless complaints about drinking water contamination and likely impacts on adjacent food farming went almost entirely unheeded. Preventative actions, whether adequate or not, were only implemented when community action was particularly vocal or public. When Derby, Lorinna and West Calder drinking water became contaminated with the toxic triazines residents took action by establishing the Tasmanian Clean Water Network. Its purpose was to campaign for change in chemical use by way of warning the public about the breakdown of chemical regulation in Tasmania in particular.

In early 2004 a major oyster kill hit the aquaculture industry in North East Tasmania. The oyster growers lost \$1.5 million dollars worth of stock overnight. Dr Marcus Scammell, a marine biologist, published a report that with the help of unprecedented media attention rang alarm bells across the State. His writing aptly and further emphasised the vulnerability of people, industry and ecosystems from the effects of the uncontrolled use of pesticides in Tasmania. Subsequent testing of surface waters in the George River showed sections of the river were toxic to living organisms.

A local doctor in the area, Dr Alison Bleaney, supported calls by Dr Scammell for the implementation of the precautionary principle. She further highlighted the chemical dangers by bringing to public attention a surge in cancer and neurological cases in north-eastern Tasmania since 2002 which she believed was consistent with chronic low-level chemical exposure. However, no epidemiological studies have ensued to investigate possible cancer and other disease clusters that could correlate with pesticides.

State-wide changes in cancer incidence are raising deep concerns. Between 1980 and 1999 for instance there was:

- A 67% increase in the incident rate for non-Hodgkins lymphoma;
- An 86.4% increase in the incident rate for prostate cancer;
- A 273.4% increase in the incident rate for thyroid cancer;
- Since 1980 the incidence rates for all cancers combined has almost doubled in Tasmania.

The state also has the highest percentage of people suffering diabetes in Australia. with more than 5000 new cases having been recorded here in the last three years. That represents an "epidemic that has the potential to cripple the health system according to Christopher Stopp, Tasmanian chief executive of Diabetes Australia"

Multiple Sclerosis is 7 times more common in Tasmania than in Northern Queensland. And "Tasmania has much higher rates of coronary heart disease, obesity, hypertension and high blood cholesterol than other Australian States."

Industry practice hides behind the limited science of toxicology to justify dangerous practices. Citizens have no defence when the onus of proof of harm is placed on the unresourced families and children who suffer the pesticides not only in their food and water but also in their bodies.

The 2003 Total Diet Survey carried out by Foods Standards Australia New Zealand found residues of 36 different types of pesticides in a range of commonly eaten foods in Australia. But this was only a limited testing regime. Tasmanian and Victorian residents have raised concerns about pesticide take up by grazing animals including dairy cattle but media and Government action in this dilemma has been almost completely ineffective in terms of protecting people and the environment.

Ironically there are no long-term economic justifications for large scale and intensive use of pesticides. Such practices merely herald in the consequences of corporate absentee land ownership and the drive for such 'enterprises' to reduce the cost of labour and maximise profits in the short term. It's clear, from the large body of evidence already available worldwide, that we are now experiencing the effects of long-term exposure. This is likely to extend to future generations even in the unlikely event that pesticide use were to stop today.

By Brenda J Rosser, Tasmanian Clean Water Network, e-mail: rosserbj@bigpond.com, www.geocities.com/rosserbj, based on: "Tasmania Name Your Poison", Channel 9 Sunday Program, 26th September 2004; "Private timber reserves are exempt from the Land Use Planning and Approvals Act and the Environmental Management and Pollution Control Act"; "General Regulatory Failure of Pesticides in Tasmania and Australia", http://www.geocities.com/rosserbj/pesticides_generalinfo.html; "Pesticide Abuse in Tasmania", www.geocities.com/rosserbj; "Pesticide drift in the atmosphere", <http://www.geocities.com/rosserbj/drift.html>; "More Cancer and a Higher Mortality in Tasmania", http://www.geocities.com/rosserbj/cancer_rates.html; "Cancer in Tasmania 1980-1999", Tasmanian Cancer Registry, Menzies Research Institute, University of Tasmania, as cited from Pete Godfrey's submission on Review of Taxation Treatment of Plantation Forestry, 10/07/05; "State's Diabetes Dilemma", Mark Baker, The Examiner, Monday 8th August 2005, page 1 and 2; Christopher Stopp, Tasmanian chief executive of Diabetes Australia from the article op cited; Menzies Centre, Tasmania, Professor Terry Dwyer, released by Nicolas Turner; Tasmanian Department of Health and Human Services, <http://www.dhhs.tas.gov.au/publichealth/foodandnutrition/policy.html>; Limited science of Toxicology, http://www.geocities.com/rosserbj/toxicology_limits.html; No long term economic justifications, http://www.geocities.com/rosserbj/longterm_pests.html

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- Chile: The impacts of monoculture tree plantations on Mapuche medicine

Annexation of Mapuche territory by the Chilean State and the imposition of its legal system on all the indigenous peoples that co-exist in the country have marked deep changes in the way of life of the Mapuche people. Between 1881 and 1907, stripped of their territory, their autonomy and their assets generated as an agricultural and cattle-raising society, the Mapuche people fell prey to hunger and to disease that took around twenty thousand victims.

With millenary experience, the Mapuche people had known how to accumulate a wealth of knowledge in different fields, among them health. The concept of health is not to be found in the Mapuche conceptual repertoire, because it is integrated in all the occurrences of life itself. That is to say, being well, being unwell is health. In every moment lived, however humdrum it may be, the flow of life is evaluated. At each meeting between people, there is time to ask after their state of health, and thus this meeting becomes a constant self-assessment by people about themselves, their family and their surroundings. To be well or unwell consists of the individual as such being in equilibrium with him/herself and with his/her peers, family, and closest and dearest beings. You must also be in equilibrium with your social, cultural, political, environmental, territorial, religious and cosmic surroundings.

Based on this comprehensive concept of health, the Mapuche people developed a vast field of knowledge to help them resolve disease, based on the use of various medicinal resources mainly obtained in the forest. However, both these resources and access to them have been constricted insofar as the constructions of villages, towns and highways, the extension of the railway and the installation of large landed properties brought with them an increase in forest exploitation. Re-arrangement of the territory to suit the interests of the Chilean State also put an end to the traditional routes used by the various Mapuche identities, hindering the exchange of medicinal plants from different ecological environments.

To this was added the discredit that the vast diversity of specialists in Mapuche medicine were subject to. Throughout decades of intervention, from Christian churches and health institutions, real campaigns to discredit indigenous knowledge were carried out, causing a drop in the number of specialists and strong dependency on the official health care system: a discriminatory system, unable to satisfy the needs of the most underprivileged sectors and still less of the Mapuche residents in rural zones with difficulties in access due to the great distances and with barriers set up to ignore cultural diversity.

However, the Mapuche people, whenever possible, preserved wilderness areas or natural ecosystems that were reservoirs of their traditional medicine because they contained a wide range of medicinal plants. Gathering is done under cultural precepts traditionally defined by Mapuche customary law. From this perspective there are

places that can be used by human beings for dwellings and production, while there are other places that have “ngen” (a master spirit that looks after the elements that have been entrusted to it). In these spaces it is possible to observe a wide categorization related with the soil characteristics, presence of water, size and existence of certain species, where human beings must act with respect and reverence. If some element is necessary, permission must be asked from the ngen, taking out what is necessary, paying retribution with something, and praying for its effectiveness.

The existence of these spaces is vital for the continuity of Mapuche medicine, because it is there that the plants develop their *newen* (force or power) and because it is in some of these places that the Machi – the persons entrusted with carrying out therapeutic ritual and all those actions aimed at specific knowledge of the disease and its eradication – find their materials to prepare the necessary elements to carry out their ritual role (such as the *rewé* or *alter*, or musical instruments such as the *kultrung* whose rhythm marks the different phases of the struggle against the agents that have intervened in unleashing the disease).

Over the last few decades, the consolidation of the neo-liberal model has promoted an economic growth model based on depredation of the environment and the exclusion of various social sectors. With regard to the Mapuche people and their medicine, this has implied a considerable decrease in their therapeutic resources, and even the extermination of some species.

One of the main agents in this depredation has been the expansion of forestry companies that introduced themselves into Mapuche territory, taking advantage of the conditions generated by the Pinochet dictatorship. During this time, not only was the transfer of lands to private companies encouraged but land tenure deeds were granted to community members, thus disarticulating the community system and allowing sale of land to non-Mapuche people, harbouring deceit and abuse.

Forestry companies exploited many native forests and then replaced them with pine and eucalyptus plantations, species of greater profitability due to their rapid rate of growth. In a veritable forestry invasion, the plantations have spread to other spaces, such as the *mallines* (humid environments where natural grasses grow), grasslands and flat lowland plains (grasslands in zones where there is water) traditionally used for crops. The vast plantations surrounding the communities cause, on the one hand considerable decrease in water courses, aridity in soils and extermination of a great number of medicinal species. On the other hand, in many zones and as a consequence of spraying from the air to control organisms affecting the plantations, water is polluted and impacts are felt on fruit trees, medicinal plants that have managed to survive and on crops. Many animals, birds and insects that maintained the ecological balance have also disappeared. All this has caused disorders in the health of people and domestic animals, leading to a serious deterioration of the Mapuche families' economy.

Extermination of plants in many Mapuche communities together with difficulty in accessing them have currently become a recurring issue in the Machis' discourse, who find their work hindered:

“The remedies of the earth are very important but they no longer exist, they have been exterminated by the *wingka* (“the other”, white men) by fire and furthermore they have planted pines, they have planted eucalyptus, that is why the remedies have finished, there are no *lawen* (plants), they have gone” (a Machi from *Rüpücura*).

Since the arrival of the Spaniards, the Mapuche people have seen their world completely upset and have had to adapt to adverse circumstances in their communities. They have even been evicted to the belts around the cities, where most of the population is now concentrated. However the Mapuche continue to generate mechanisms for resistance to preserve their cultural, linguistic, political and religious characteristics.

Faced by the invasion of their territory by trees that are ending their medicinal resources while worsening health problems due to contamination, the Mapuche defend their territorial space, firmly express their demands, often having to face repressive forces.

Article based on information from: "Intervención Externa y Medicina Mapuche", Ivonne Jelves Mella, Centro de Documentación Mapuche, <http://www.Mapuche.info/mapuint/jelvesMella030325.html>; "Propuesta para una política de salud en Territorios Mapuche", Unidad de Salud con Población Mapuche, Servicio de Salud Araucanía Sur, Equipo Mapuche de Cogestión en Salud, <http://www.Mapuche.info/mapuint/sssmap020400.pdf>

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- Health Threats of Genetically Engineered Trees

The human health risks associated with plantations of genetically engineered trees, though virtually unstudied, are significant and further legitimize the call to globally ban GE trees.

The health risks can be broken down into the following categories: exposure to hazardous chemicals (such as the herbicide RoundUp) applied to the plantations; the harmful effects of inhaling pollen from trees that produce the bacterial toxin Bt; the risks associated with consumption of fruit from GE trees; and the threats of using antibiotic resistant markers in the development of GE trees.

The two traits in genetically engineered trees that are closest to commercial use are also the two traits that may have the most dangerous effects on health: herbicide resistance and insect resistance.

Trees are being genetically engineered to withstand applications of Monsanto's herbicide RoundUp. In agriculture, the use of so-called "RoundUp ready" crop plants has led to massive increases in the use of the herbicide of 300 to 600%. While most of the studies of the impacts of this herbicide have focused on its active ingredient, glyphosate, scientific studies have shown that the additional ingredients in RoundUp make it twice as toxic as glyphosate alone.

The Institute of Science in Society reported in July of this year that, "an epidemiological study in the Ontario farming populations showed that glyphosate exposure nearly doubled the risk of late term spontaneous abortions." They continued, reporting that several recent studies "suggested an association between glyphosate use and the risk of the cancers non-Hodgkins lymphoma... and multiple myeloma."

The environmental persistence demonstrated by RoundUp of up to 360 days in some ecosystems, coupled with the fact that it is commonly found as a contaminant in rivers lead to concerns for the health of people or wildlife that would live adjacent to future RoundUp Ready tree plantations. Even more serious, however, are the threats from inhaling the herbicide. Numerous studies have found that inhaling RoundUp is much more dangerous than ingesting it orally. RoundUp Ready GE tree plantations are anticipated to be sprayed with RoundUp from the air, where it would drift into nearby communities who would be thus seriously impacted on their health.

Trees are also being engineered to kill insects by producing the bacterial toxin Bt in every cell of the tree. Dr. Terje Traavik of Norway reports that on the island of Mindanao in the Philippines, an entire village living adjacent to genetically engineered Bt maize fields came down with "respiratory, intestinal and skin reactions and fever," during the time that the maize plants were pollinating. Antibodies indicating an immune reaction to the Bt maize pollen was found in their blood. When the people left the area, their symptoms subsided, but upon return to the village, the ailments also returned.

Engineering trees to produce Bt toxin could be far more dangerous. Pines, for example, are known for their extremely heavy pollination. They are also known to spread their pollen for hundreds of kilometers. The establishment of plantations of pines that produce Bt pollen could lead to widespread outbreaks of sickness.

Dr. Traavik further reports that scientific studies have also identified Bt as an "enabling agent, which increases a person's susceptibility to other allergens and immunogens." He questions if this fact may be related to the incredible increases in recent years of the numbers of people experiencing allergy symptoms in countries where GE foods are consumed. An additional concern arises from animal studies of the effects of Bt that found that Bt

remains active in mammals that have eaten it and may in fact bind to the intestines, leading to "significant structural disturbances and intestinal growth."

Further concerns about allergic reactions from GE trees come from consuming the fruits from those trees. In Hawaii and Thailand, for example, papaya trees have been engineered to resist the devastating ring spot virus. However, a study published in BioMed Central Structure Biology found that these GE papaya contain a ringspot virus coat protein that includes a string of amino acids identical to a known allergen. Because the GE papaya on the Big Island of Hawaii have contaminated over 50% of wild and organic papaya trees there, people have no way of knowing if the papaya they are eating has been contaminated by this potential allergen.

The final health concern this article will address is the threat from using antibiotic resistant markers to identify GE plants. In genetic engineering, antibiotic resistant markers are included in the genetic material inserted into the engineered organism. This enables scientists to easily determine if the genetic material has been successfully incorporated into the organism by applying antibiotics. If the organism survives, it means that it contains the genetic material with the antibiotic resistant marker.

The British Medical Association (BMA), in a November, 2002 report stated, "There is a significant risk that antibiotic resistance markers may progress through the food chain, possibly into pathogenic organisms causing human disease." Already doctors are being challenged by the emergence of contagious viruses that are resistant to antibiotics. The use of antibiotic resistant markers in genetic engineering threatens to exacerbate this already deadly situation. The BMA continues, stating, "the use of antibiotic resistant markers in GM foodstuffs is a completely unacceptable risk ... and we therefore believe that the use of antibiotic resistant markers in GMOs be prohibited immediately."

In a sweeping statement that could apply to all of the risks of GE trees listed above, the British Medical Association concludes, "We believe there is a greater need for more comprehensive risk assessment which include interactions between GMOs and the long term effects on health and the environment before field trials are taken any further."

By Anne Petermann, Global Justice Ecology Project, E-mail: globalecology@gmavt.net,
<http://www.globaljusticeecology.org/>

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- The unhealthy smell of money in forest fires

Indonesia's forests are once again on fire. Smoke from fires in Sumatra caused the worst haze conditions in Malaysia since 1997. An unhealthy smoky haze (a mixture of dust, ash, sulfur dioxide and carbon dioxide) has been covering Malaysia's main city Kuala Lumpur and 32 other towns. Schools were closed, and hospitals filled with patients complaining of respiratory ailments. Data from Indonesia's Riau Health Service reported that more than 1990 people have been experiencing upper respiratory infection and eye problems. Malaysia declared a state of emergency on August 11 as the air pollution index rocketed to extremely hazardous levels on its west coast. Rain and breezes scattered the smog last August 12, carrying it north.

Since the 1982-83 wildfires in Indonesia (which were recorded as the largest forest fires in that century), fire has been a recurring event in the country, causing massive damage within its borders as well as for its neighboring countries, such as Malaysia and Singapore.

In 1982-83, 1997-98 and 2002, millions of hectares of montane and lowland forests, of peat and swamp forest were burning while massive movements of population and animals fled the fires. The haze covered an area almost the size of Europe, disrupted aviation and shipping for months and caused serious health problems, choking even far distant cities where schools and airports had to be closed, and traffic slowed to a crawl as nothing could be seen beyond a short distance. The acrid smell of burning vegetation filled the air.

Though the El Niño event brought about in 1997 a severe drought, the fires were fuelled because many of Indonesia's forests have been badly damaged by logging: legal and illegal. Overexploitation opened up the forest canopy and, in the absence of rain, the forest became tinder dry.

On the other hand, the extensive forest conversion policy lies at the root of the forest fires problem. The Government of Indonesia plans to convert millions of hectares of forest to agricultural, oil palm and timber plantations. Every year, 1 to 2 billion metric tons of plant biomass is burned by plantation companies in their concessions as the cheapest tool to clear their land for oil palm and timber plantations. A large percentage of all wildfires result from that. In 1997, PT Torus Ganda, a plantation company operating in Riau, Sumatra, was the first of a large list of 176 companies publicly accused of starting fires to clear land.

Apart from crippling local economies, forest fires are major contributors of toxic gaseous and particle air pollutants into the atmosphere and are also sources of "greenhouse" and reactive gases, directly impacting on global warming and immediate weather patterns.

In 1997-98, forest fires in South-east Asia affected some 200 million people in Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore and Thailand. In Indonesia, 41,000 people had diarrhea and 24,000 respiratory infections, 200,000 people were affected by food shortages in West Papua, and 413 deaths from starvation and cholera were reported in the territory at that time. Forest peoples' livelihoods were devastated and, as a result, food shortages were suffered in some areas.

Warnings of the World Health Organisation about health impacts of the smoke relate to short-term and long-term cancer implications. The fires increase the risk of acute respiratory infections, a major killer of young children. The comparison of medical data reported during the 1997/1998 forest fire events in South-east Asia with corresponding data in 1995/1996 revealed the following impact of smoke on public health: the number of cases of pneumonia increased 5-25 times in South-east Kalimantan (Borneo) and 1.5-5 times in South Sumatra; the number of outpatient visits with respiratory diseases in Malaysia increased 2 to 3-fold; in September 1997 in Jambi (Sumatra), the number of reported cases of upper respiratory tract infections was 50% higher than in the previous month. In the 2002 forest fires, the health and lives of about 4 million Indonesian people were affected in Central Kalimantan. Thirty years from now they will suffer from the effects of smoke inhalation in the form of serious respiratory illnesses, including lung cancer.

Some put the blame equally on local farmers and large plantation companies for the present fires. Dayak indigenous peoples in Kalimantan, have been traditionally carrying out shifting cultivation for thousands of years in tune with their natural environment (so-called "slash and burn" agriculture). They have experiences and strict traditional rules of using fire to clear small plots of agricultural land. Those traditional and low-impact practices cannot be compared with large-scale land clearance by plantation companies through equally large-scale fires that destroy huge areas of forest.

According to the experience of past fires, a terrible toll on their health lays ahead for the people affected by the present one. Also in line with past experience, oil palm plantation companies –mostly of Malaysian origin- have been identified by the Indonesian government as being responsible for the present fires. As usual the profit of large plantation companies is at the source of this tragedy. Their fires have an unhealthy smell of money.

By Raquel Núñez, WRM, E-mail: raquelnu@wrm.org.uy, based on information from: Fact sheet N° 254, WHO, <http://www.who.int/mediacentre/factsheets/fs254/en/>; "Effects of Indonesia Forest Fire", TED Case Studies, <http://www.american.edu/projects/mandala/TED/indofire.htm>; "Forest Fires in Indonesia Blanket Malaysian Cities with Unhealthy Haze", *Associated Press*, August 3, 2005, <http://www.enn.com/today.html?id=8412>; "The trail of destruction: A chronology of the fires", *Down to Earth* No. 35, <http://dte.gn.apc.org/35su1.htm>
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