CFR 521 Current Topics in: Spring 2006

Environmental Justice

Resource Development,

Indigenous Rights,

and the

Ideology of Scientific Research

This course on environmental justice will cover the broad themes related to resource management, human rights and the ethics of performing research in developing countries. Examples from Suriname will illustrate the principles being considered. This course will give students the opportunity to explore topics of personal interest in four short essays. The essays will be used to develop skills in analytical reasoning and will be used to build three types of factual arguments and one evaluative argument.

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Suriname Indigenous Health Fund

In the Greenstone Belt region of Suriname, indigenous and tribal people are being poisoned by mercury from gold mining. Little effort has been made to provide the people in this region with the basic information needed to reduce their risk from exposure to mercury.

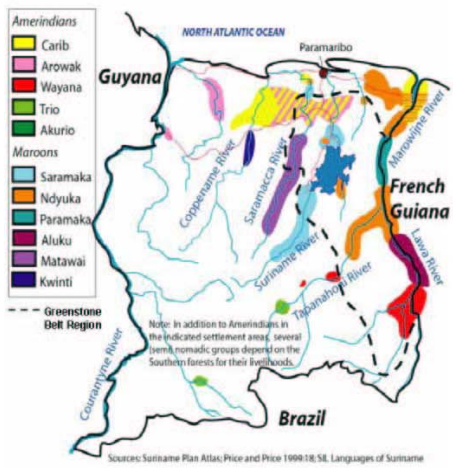
Mission:

We provide indigenous people in Suriname's interior Greenstone Belt region with the materials and technical support they need to self-diagnose the effects of mercury pollution from gold-mining on their community's and their environment's health.

Contact Us: Suriname Indigenous Health Fund
3841 42nd Avenue NE
Seattle, Washington 98105 USA
www.SIHFund.org or SIHFund@sihfund.org

Indigenous People Impacted by Gold Mining:

Five Amerindian groups (Wayana, Carib, Arowaks,Trio, and Akuiro) and five culturally distinct groups of Maroons (Ndyuka or Aukaner, Saramaka, Paramaka, Aluku or Boni, and Matawai) live along the main rivers in Suriname's Greenstone Belt region. They are now being poisoned with mercury as a gold rush draws thousands of foreigners who are mining their lands.



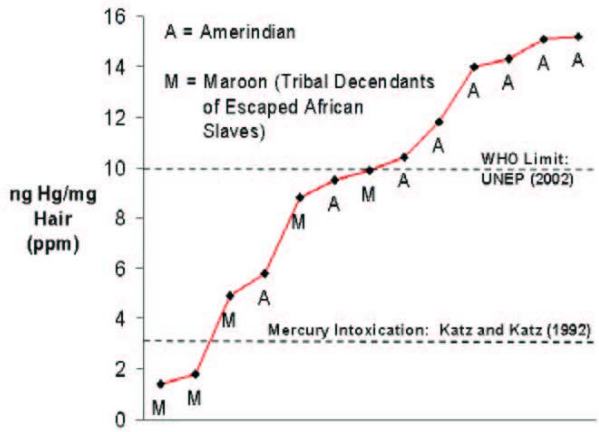
Mercury Pollution from Mining:

Miners adding mercury to sleuce box to amalgamate gold. Ninety-five percent of mercury used is released to environment.

Since the early 1990s there has been an explosive increase in gold mining activities in Suriname. It is estimated that between 10 and 60 metric tons of mercury are used in mining and released into the environment in Suriname each year. The indiscriminate use of mercury throughout the process is causing irreversible damage to the environment and exposes both miners and the general population living in the region where mining occurs to toxic levels of mercury.

The Effects of Mercury Pollution:

Hair analysis results indicate that the general population living in areas where gold mining occurs may be exposed to mercury. Mercury levels found in human hair in the volunteers from the southeast region of Suriname ranged from 2 to 15 ppm. Clinical signs of mercury toxicity were observed including ptosis, and impaired hearing, sight and speech.



The Solution:

Provide indigenous people in Suriname with the materials and technical support needed to self-diagnose the effects of mercury pollution from gold-mining on their community's and their environment's health.

For more information or to learn how you can help, contact:

Suriname Indigenous Health Fund www.SIHFund.org or SIHFund@sihfund.org

Environmental Justice . . .

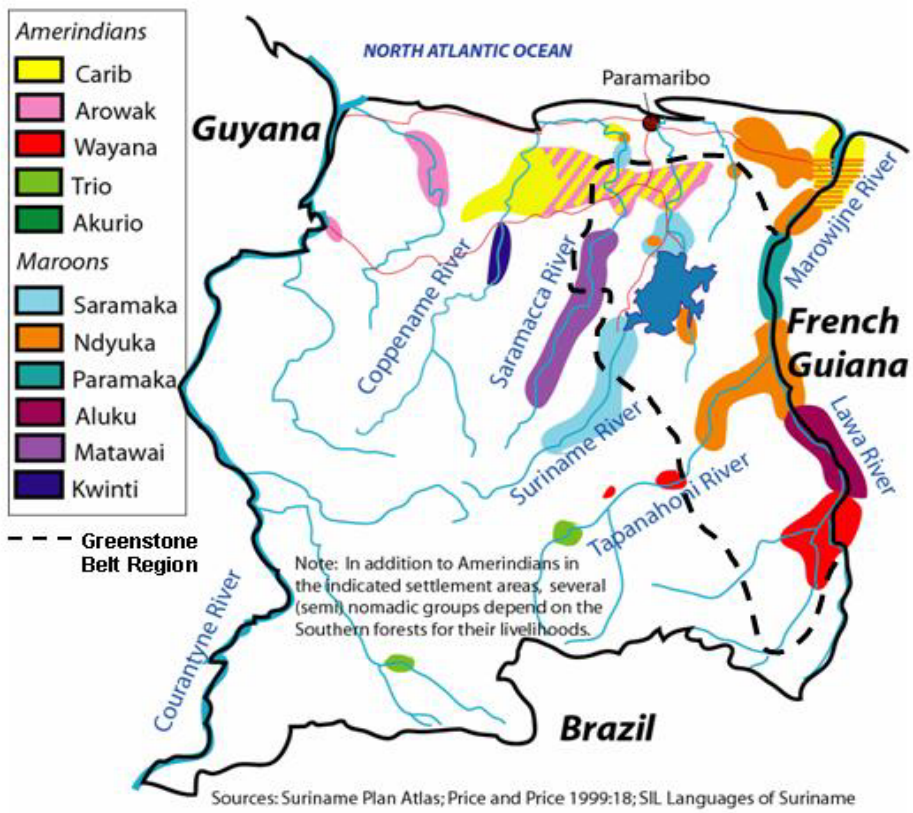
Definition #1:

Environmental
policies,
laws,
institutions
and practices

that are equitable with regard to
race, color, national origin, or income

. . . and the Persuit of Science

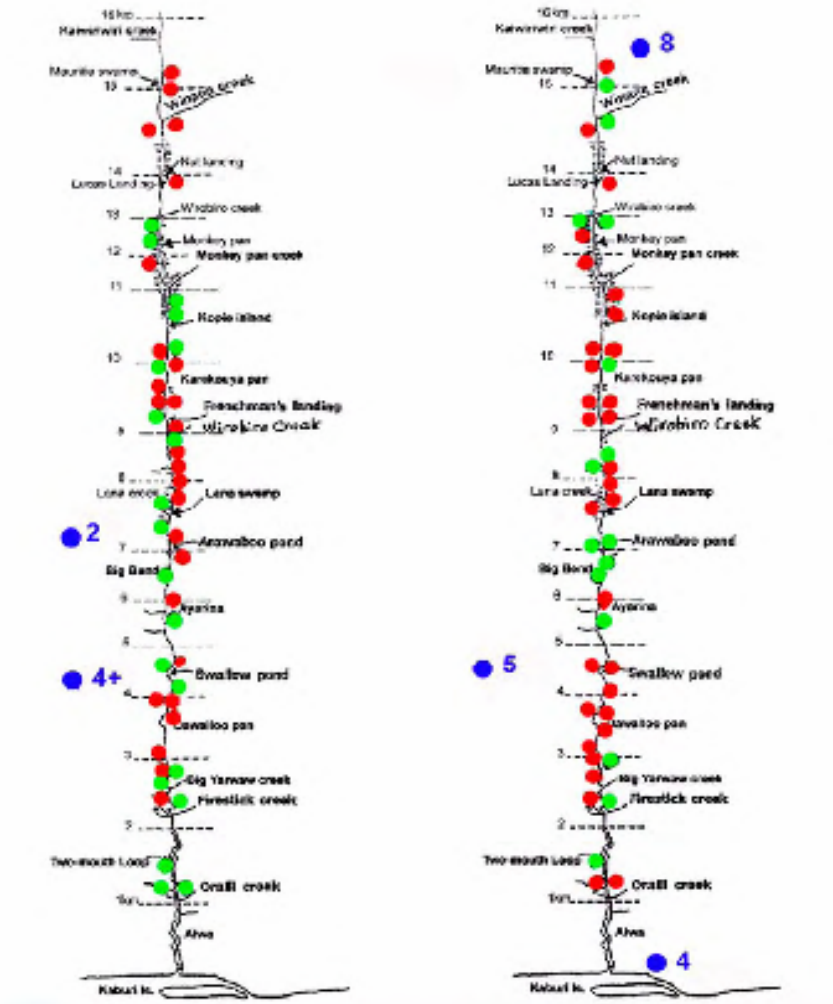
Case Study: Suriname



Biological Diversity in Suriname:

	Number Species	Number Endemic Species	% Total Endemic
Plants	20,000	7,000	35%
Birds	975	150	15%
Mammals	282	27	10%
Reptiles	280	76	27%
Amphibians	272	127	47%
Freshwater Fish	2,200	700	32%

Giant River Otter (*Pteronura brasiliensis,* Gmelin, 1788)



Giant otter Sites on Kaburi Creek, Suriname (map not to scale)
March 2002 (left), November 2002 (right)

KEY: ● = site in use, ● = site not in use, ● = otter sighting and number of otters seen

Mining

Prospecting

Use of Mercury

3 Reasons Why Mining Discriminates Against Tribal and Indigenous People

Geographic
(mining occurs where indigenous people live)

Procedural
(language and location of business)

Social
(Class structure of a society)

GEOGRAPHIC CAUSES of ENVIRONMENTAL INJUSTICE

Benefits: 100% of gold is exported

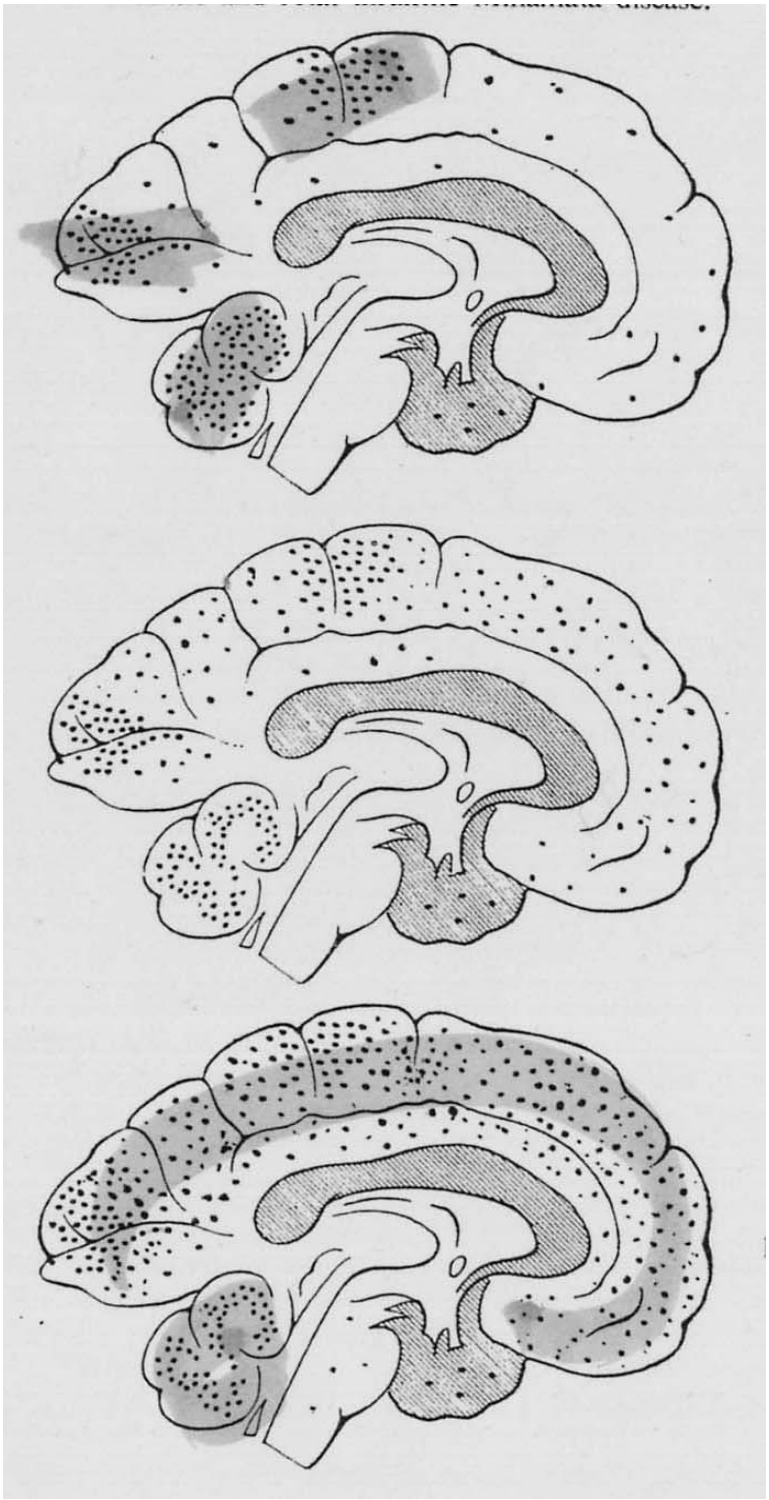
Employment Only < 17%
Interior "Tribal", 0% Amerindian

Impacts on tribal and indigenous communities:

Mercury, Cyanide, Water Quality, HIV/AIDS

Livi, 9

Distribution of Lesions



Adult Minamata Disease

Non-fetal Infantile Minamata Disease

Fetal Minamata Disease

Takeuchi, T. 1968. Pathology of Minamata Disease (Chapter 4). In: Minamata Disease (Ed. M. Kutsuma, Chief of Medical Study Group of Minamata Disease). Kumamoto University, Japan.

SOCIAL CAUSES of ENVIRONMENTAL INJUSTICE

Village leader of Apura:

“We are not against development, but our way of living has to be taken into account’

‘We are no longer allowed to hunt or fish in our own territory’

‘And we cannot go to a supermarket like people in the city, because we live from the forest.”

PROCEDURAL CAUSES of ENVIRONMENTAL INJUSTICE

1. Location

2. Language

    Dutch, English

    Not Sranan Tongo, Aukaans . . .

3. Suriname Land Management Plan (SLMP) Draft Mining Act:

    Drafted without consultation or informing tribal or indigenous people

Science-Based Policy Model

1. **Mining, mercury and conservation issues regarded as "scientific issues"**

2. **Scientific research funded**

3. **Experts report research results**

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4. **Policy, laws and institutions reformed**

5. **Programs Developed and Implemented:**

   Design program
   ***Educate target population, community**
   Program implementation
   Program assessment
   Improve program

*** Often the first time a community has contact with problem or its solution**

Regional Conference on Conservation, Paramaribo, Suriname, February 2004

Final Draft of GIS Model to Prioritize Conservation:

1. Preserve examples of natural ecosystems

2. Protect biologically significant areas
   - high levels of endemism
   - high levels of diversity
   - concentrations of endangered species
   - areas with natural or scenic beauty

Indigenous Representative to Conference:

"We are seeing deformaties in children we have never seen before . . . we would like to see a data layer for indigenous and tribal people in your GIS model?"

Responses to Indigenous Request:

"*We are the World Wildlife Fund, not the World People Fund*", WWF Biologist, February 2004

"*We are the Nature Conservancey, not the people conservancy*", NC Biologist, February 2004

"*If the strongest survive, perhaps they will evolve and develop a resistance to mercury*" UNEP Oct 2004

Scientists: insensitive, heartless, disdainful

Science is not a solitary activity
Science takes place in a social context

We provide a service to society
Therefore we are accountable to society

We are self-regulating
therefore must follow ethical code

Do not abuse, manipulate, harm, exploit, or decieve to achieve goals (Kant 1700s)

Four basic principles scientist should follow:

1. Nonmaleficence – do no inflict harm (to ourselves or others)

2. Beneficence – Promote the well being of ourselves and others

3. Autonomy – Allow rational individuals to make their own decisions

4. Justice – allocate resources fairly (equity and need, not merit, chance or utility)

Definition #2:
Environmental Justice

Eliminate inequities in:

Environmental
policies,
laws,
institutions
and practices

“Makandra” at Komisaris Kondre

Guidelines for Working with Indigenous Communities in Suriname:

- Communities direct work.

2. Communities and individuals are free to participate or withdraw without reprisal.

3. Final results are the property of the communities and individuals that participate in the project.

4. Results should not be published without the consent of the participants.

5. Communities should interpret data within their social and cultural context.
6. Publications and reports should be approved by the participating communities.
7. Reports and publications should acknowledge and include credit to the participating community and individuals for their contributions.
8. The communities and individual participants must benefit from the results of the research.

Community-Driven Risk Assessment



Community Goals:

1. **Ability to self-monitor mercury levels**

2. **Monitor mercury in different fish species commonly consumed**

3. **Health tests – effects of Hg especially in children**

Henry Miller in April 2005, *The Precautionary Principle: An Anti-Consumer Fish Story*

". . .*how valuable is 'self-diagnosis' in an uneducated and impoverished population*?"

Press coverage about the villagers' concerns and plans to monitor their own freshwater resources using test kits provided by SIHFund resulted in a meeting with Cambior officials in December 2005, who admitted that cyanide escaped from their treatment facility and contaminated Mindrineti Creek.