LAPORAN SIMPOSIUM ANTARBANGSA TENTANG KEBUDAYAAN DAN LINGKUNGAN (Bogor 21 - 24 Mei 1992)

DIREKTORAT SEJARAH DAN NILAI TRADISIONAL PROYEK PENELITIAN PENGKAJIAN DAN PEMBINAAN NILAI-NILAI BUDAYA DIREKTORAT JENDERAL KEBUDAYAAN DEPARTEMEN PENDIDIKAN DAN KEBUDAYAAN 1992 / 1993

LAPORAN SIMPOSIUM ANTARBANGSA TENTANG KEBUDAYAAN DAN LINGKUNGAN (Bogor 21 - 24 Mei 1992)

DIREKTDRAT SEJARAH DAN NILAI TRADISIONAL PROYEK PENELITIAN PENGKAJIAN DAN PEMBINAAN NILAI-NILAI BUDAYA DIREKTORAT JENDERAL KEBUDAYAAN DEPARTEMEN PENDIDIKAN DAN KEBUDAYAAN 1992 / 1993

DAFTAR ISI

	Halan	ian
١.	PENDAHULUAN	1
П.	KEYNOTE ADDRESSES	7
	2.1 Address by the Minister of Education and Culture of the Republik of Indonesia by Prof. Dr. Fuad Hassan	7
	2.2 Cultural Dimension of Sustainable Development by Prof. Dr. Emil Salim	11
III.	MAN ENVIRONMENT AND CULTURE	21
	3.1 Man in Nature : the Evidence for Optimism by John Reader	21
	3.2 Man Environment and Culture : From Traditionalism to Modernity by Harsya W. Bachtiar	33
	3.3 Connecting Culture and the Environment : Creating an Ecolo- gical Consciousness by Roy Williams	46
	3.4 Cultural Heritage and Environment by Nazimuddin Admed	60
IV.	MAN, NATURE AND SACRED	67
	4.1 Man, Nature and Sacred in Tibetan Tradition by Karma Gelek Yuthok	67
	4.2 Culture in Ecosystems – Australian Ways by Hellen Ross	78
	4.3 Man's Interaction with Environment : Care Study of Workers and Plantations by Syafri Sairin	89

iii

	4.4	The Reality of Peoples, the Myth of Law by Marvic M.V.F. Leonen	105
V.	DE	VELOPMENT, ENVIRONMENT AND CULTURE	120
	5.1	Development, Environment : The Dilemma of Development by W. Weyns	120
	5.2	Culture Values and Environment : the Dilemma of Development by J.R.E. Harger	136
	5.3	The Environment and The Regeneration of Culture by Wazir John Karim	165
	5.4	Nature and Society Net work by S. Boyden	175
VI.	KES	SIMPULAN	183
	6.1	Kelompok I : Man, Culture and Nature	183
	6.2	Kelompok II : Man, Nature and the Sacred	189
	6.3	Kelompok III : Development, Environment and Culture	196
Larr	pira	n 19	203
1.	Dec	laration of Belem	205
2.	Gen	eral Information	208
3.	Pro	grammes and Schedule of the Symposium Including Approved	
	Offi	cers	218
4.	List	of Participants	223
5.	Susi	unan Keanggotaan Panitia Antar Bangsa tentang Kebudayaan Lingkungan 1992	230

I. PENDAHULUAN

1.1. Latar Belakang

Manusia sebagaimana halnya dengan kehidupan lainnya, tidak pernah dapat dipisahkan dari lingkungan alam di sekitarnya. Di manapun dan bilamanapun mereka hidup senantiasa berpijak di atas bumi dan berkalang langit. Orang Minangkabau dengan tepat mengungkapkan keterikatan manusia dengan lingkungannya; "Di mana bumi dipijak di sana langit dijunjung". Akan tetapi berbeda dengan kehidupan lainnya, manusia sebagai mahluk yang berakal (Homo Sapiens) mengembangkan hubungan khusus dengan lingkungannya. Hubungan itu terwujud karena manusia tidak pernah puas dengan diri dan lingkungannya, serta dorongan kuat rasa ingin tahu segalanya. Karena itu, dalam proses adaptasinya dengan lingkungan, manusia bukan hanya mengembangkan peralatan sebagai penyambung keterbatasan jasmani mereka, melainkan juga mengembangkan pemikiran yang kemudian mewujudkan kebudayaan. Dengan mengacu pada kebudayaan sebagai hasil abstraksi pengalaman dalam proses adaptasi terhadap lingkungan secara aktif itulah manusia menghadapi tantangan dan mengembangkan pilihan strategi dalam hidupnya sebagai mahluk yang tertinggi derajatnya.

Kemampuan manusia menggerakkan kedua tangan untuk bekerja telah menghasilkan peralatan yang dapat membantu mempermudah mereka mempertahankan diri dan mengembangkan kehidupan secara aktif. Di manapun dan bilamanapun manusia senantiasa berusaha melengkapi dirinya dengan membuat peralatan. Karena itu, manusia biasa dinamakan sebagai mahluk yang membuat peralatan atau "tool making animal". Keberhasilan manusia membuat peralatan dan mengembangkan caracara pengendaliannya itu telah menimbulkan dampak yang besar terhadap kehidupan mereka selanjutnya. Hal itu terjadi bukan hanya karena setiap potong peralatan yang diciptakan senantiasa akan merangsang rangkaian perkembangan yang tidak pernah ada ujungnya di bidang teknologi, melainkan juga akan mempengaruhi sikap mental mereka yang menguasainya.

Dengan peralatan di tangan, bukan hanya adaptasi manusia dipermudah melainkan juga kepercayaan pada diri mereka untuk mendorong manusia kreatif dan tanpa ragu-ragu mengolah dan memanfaatkan sumber daya yang tersedia di sekitarnya. Pada mulanya pengembangan peralatan dan teknologi berhasil mempercepat upaya manusia membina kesejahteraan hidup mereka. Akan tetapi tanpa disadari – pengolahan dan pemanfaatan sumber daya dengan menggunakan peralatan dan teknologi tanpa kendali telah mempercepat penyusutan kekayaan alam. Kalau hal kesejahteraan hidup yang pernah dicapai. Sungguhpun dengan daya kreativitasnya manusia akan dapat mengembangkan peralatan dan teknologi lebih lanjut, dan karenanya mampu meningkatkan kembali kesejahteraan hidup mereka, namun pada giliran selanjutnya tidak akan mampu menahan proses pemiskinan lingkungan secara lebih cepat.

Dengan lain perkataan penguasa peralatan dan teknologi itu bukan sekedar menyambung keterbatasan jasmani yang mempermudah upaya adaptasi, melainkan juga menyebabkan manusia memiliki kepercayaan diri secara berlebihan. Kepercayaan diri manusia itu tercermin dalam dongeng-dongeng yang menggambarkan mahluk serba bisa yang akhirnya mati karena tingkahnya sendiri.

Tanpa disadari, perkembangan peralatan dan teknologi yang diciptakan manusia untuk menyambung keterbatasan jasmani mereka, pada gilirannya menguasai dan mempengaruhi perkembangan sikap mental manusia yang menggunakannya.

Sungguhpun demikian manusia tidak pernah dapat melepaskan diri dari lingkungan dan pengaruhnya. Adapun yang diperbuat manusia dalam proses adaptasi secara aktif, senantiasa mencerminkan pengaruh lingkungannya. Sebaliknya apapun yang manusia perbuat akan mempengaruhi lingkungannya yang dapat menghasilkan lingkungan buatan. Oleh karena itu boleh dikatakan bahwa sejak awal kehidupannya manusia harus mengarungi lingkungan adaptasi yang diciptakannya, bukan sekedar lingkungan alamiah sebagaimana yang dihadapi oleh makhluk hidup lainnya. Lingkungan buatan itu tercermin

dalam makna yang mereka berikan pada lingkungan alam di mana mereka dilahirkan, dibesarkan dan mengembangkan kehidupan sosial. Masyarakat manusia di manapun senantiasa memberi sebutan khusus terhadap lingkungannya, seperti "Tumpah Darah" tempat mereka dilahirkan. Demikian juga masyarakat Indonesia menggunakan sebutan "Ibu pertiwi" terhadap lingkungannya di mana mereka dibesarkan. Sedang sebutan "Tanah air" menunjukkan makna yang diberikan manusia terhadap lingkungannya yang menyediakan segala kebutuhan pokok bagi penghidupan mereka. Sebutan terhadap lingkungan hidup mencerminkan pengalaman dan pemahaman mereka peroleh dalam proses adaptasi terhadap lingkungan. Dengan lain perkataan sebutan terhadap lingkungan itu mencerminkan nilai-nilai budaya dan norma-norma sosial serta pandangan hidup yang mereka abstraksikan sebagai inti kebudayaan yang kemudian menguasai sikap dan pola tingkah laku masyarakat yang bersangkutan.

Sesungguhnya dengan peralatan di tangan, perjuangan manusia menyesuaikan diri dengan lingkungannya dipermudah dan diperingan: Penggunaan tenaga kerja manusia dapat diperkecil sehingga produktivitas meningkat. Seorang ahli Antropologi menyatakan bahwa sepanjang sejarah peradabannya, manusia mengalami revolusi kebudayaan sebanyak 3 kali, sehubungan dengan penemuan-penemuan peralatan yang mereka kembangkan. Salah satu revolusi kebudayaan itu terjadi setelah manusia menemukan kapak genggam. Dengan kapak genggam yang terbuat dari batu, pekerjaan manusia mengolah sumber daya yang tersedia di sekitarnya dengan lebih mudah diselesaikan.

Akibatnya lebih banyak perolehan yang dapat mereka kumpulkan dan lebih banyak anggota masyarakat yang dapat menikmati makanan hasil kerja mereka. Surplus produksi yang jauh melebihi kebutuhan hidup si pemburu akan merangsang perkembangan sistem pemerataan (distribusi) yang dengan sendirinya akan memperluas jaringan sosial. Hal itu berarti bahwa peralatan yang mereka kembangkan itu telah merangsang kegiatan ekonomi dan meningkatkan intensitas interaksi sosial yang pada gilirannya memerlukan aturan-aturan dan nilai-nilai budaya sebagai pedoman dalam membina ketertiban bermasyarakat.

Di lain pihak penemuan dan pengembangan peralatan itu selain memungkinkan lebih banyak mulut yang dapat disuapi makanan, juga dapat menghemat waktu kerja. Dikatakan bahwa para pemburu dan peramu itu hanya memerlukan kerja selama 2 jam setiap harinya (M. Harris, 19). Waktu

selebihnya mereka nikmati untuk bermasyarakat, dan mengembangkan kreativitas ke arah pembaharuan. Betapapun sederhananya para pemikir dan penemu mengembangkan kreativitas mereka yang dapat memperkaya kebudayaan yang bersangkutan. Oleh karena itulah setiap penggal penemuan peralatan akan merangsang pengembangan penemuan-penemuan baru, baik yang berupa peralatan-peralatan baru, pemikiran lebih lanjut maupun normanorma sosial dan nilai-nilai budaya yang terkait.

Seorang ahli Antropologi (L.A. White, 1949) sampai pada kesimpulan bahwa perkembangan suatu kebudayaan itu dapat dinilai dari jumlah tenaga kerja manusia yang dikerahkan. Semakin kecil jumlah tenaga manusia yang terlibat dalam proses produksi, semakin maju kebudayaannya. Akan tetapi karena besar kecilnya jumlah tenaga kerja yang harus dikerahkan itu tergantung pada perkembangan peralatan dan teknologi yang mendukungnya, maka maju tidaknya suatu kebudayaan itu dapat diukur dengan perkembangan teknologinya.

Pola pikir L.A. White, yang seolah-olah teknologi menjadi penggerak utama perkembangan kebudayaan, mendapat banyak tantangan. Dalam kenyataan banyak masyarakat yang teknologinya masih sederhana ternyata telah mengembangkan organisasi sosial dan nilai-nilai budaya yang lebih kompleks. Belum lagi kenyataan bahwa pesatnya kemajuan teknologi seringkali tidak diimbangi dengan pesatnya perkembangan norma-norma sosial dan nilai-nilai budaya. Karena itu seringkali terjadi apa yang disebut kesenjangan kebudayaan (culture lag), yaitu perkembangan kebudayaan materiil yang tidak diimbangi dengan pesatnya perkembangan kebudayaan non-materiil.

Beberapa contoh etnografi menunjukkan betapa masyarakat yang masih sederhana teknologinya mampu mengendalikan keseimbangan lingkungan yang menjadi suku penghidupan mereka secara efektif.

Sementara itu masyarakat yang teknologinya sudah maju terpaksa harus bekerja keras untuk memperlambat proses pemiskinan lingkungan yang terjadi karena pengolahan sumber daya tanpa kendali. Pengambilalihan oleh masyarakat yang sedang berkembang seringkali menyebabkan terganggunya keseimbangan lingkungan karena tidak diikuti dengan menghadapi kesulitan untuk mengembalikan keseimbangan lingkungan yang terganggu sebagai akibat penerapan teknologi modern yang cenderung menuntut pengolahan sumber daya dan sumber alam dengan melupakan kearifan lingkungan yang selama ini menjadi kerangka acuan nenek moyang mereka. Akibatnya upaya peningkatan kesejahteraan hidup itu disusul kembali oleh kesengsaraan karena proses pemiskinan lingkungan yang tidak terhindarkan. Sungguhpun kesengsaraan itu akan merangsang manusia untuk mengembangkan ilmu dan teknologi lebih canggih sehingga dapat kembali meningkatkan kesejahteraan hidup mereka, namun dengan demikian lingkungan akan mengalami kemerosotan kalau tidak dilakukan pengendalian secara memadai. Dalam kaitan ini peranan kebudayaan sebagai kerangka acuan dalam mengolah dan memanfaatkan sumber daya dan sumber alam yang tersedia menjadi sangat penting artinya.

Berdasarkan kenyataan tersebut dirasa perlu untuk menyelenggarakan pertemuan yang dapat memperjelas hubungan antara kebudayaan dan lingkungan serta masalah-masalah yang dihadapi oleh negara yang sedang berkembang dan berbagi pengalaman, di antara sesama anggota UNESCO.

Pertemuan tersebut diharapkan dapat mengidentifikasi permasalahan dan mencari pemecahannya dalam bentuk kebijaksanaan yang lebih baik mengenai pembangunan yang berdimensi kebudayaan. Untuk keperluan tersebut Direktorat Jenderal Kebudayaan bekerjasama dengan UNESCO Paris penyelenggaraan simposium. Antarbangsa tentang Kebudayaan dan Lingkungan, Simposium itu dibuka oleh Presiden Republik Indonesia di Istana Kepresidenan Bogor yang sekaligus meresmikan Hari Kebudayaan Sedunia yang pertama pada tanggal 21 Mei 1992.

1.2. Tujuan Kegiatan

Simposium Antarbangsa tentang Kebudayaan dan Lingkungan diselenggarakan untuk membicarakan masalah yang berkaitan dengan perwujudan upaya manusia meningkatkan kesejah teraan hidup dengan memanfaatkan sumber daya yang ada tanpa harus merusak keseimbangan lingkungan.

Melalui simposium itu telah diambil kesimpulan-kesimpulan yang pada dasarnya bertujuan memperoleh masukan yang diperlukan untuk menyusun kebijaksanaan pembangunan, menetapkan pengaturan dan peraturan dalam pelaksanaan pembangunan yang berdimensi lingkungan. Dengan kata lain masukan itu diperlukan untuk meningkatkan kesejah teraan hidup penduduk dibarengi dengan pelestarian lingkungan.

1.3. Tema Simposium

Adapun tema dalam Simposium Antar Bangsa Tentang Kebudayaan dan Lingkungan mengacu pada tujuan penyelenggaraan Dasawarsa Pengembangan Kebudayaan Sedunia, yaitu "Dengan memperhatikan dimensi kebudayaan kita membangun dan melestarikan lingkungan".

1.4. Ruang Lingkup Kegiatan

Kegiatan simposium dilaksanakan dengan mendasarkan pada efisiensi waktu, tenaga dan beaya. Oleh karenanya kegiatan persidangan disusun dalam 3 tahap.

Tahap pertama, merupakan sidang umum di mana para pembicara diberikan kesempatan seluas-luasnya untuk mengutarakan gagasannya. Dalam kesempatan tersebut diskusi hanya mengacu pada tema pokok yang dibahas pembicara. Pada tahap kedua, dilakukan sidang kelompok di mana peserta diberikan waktu sebanyak-banyaknya untuk mengadakan tukar menukar pikiran dan berbagi pengalaman. Dalam sidang kelompok itu para peserta diwajibkan memberikan masukan sebanyak-banyaknya. Tahap ketiga, dilakukan dengan sidang pleno untuk membahas kesimpulan dari masing-masing kelompok. Hasil dari sidang pleno dilaporkan ke UNESCO Paris.

1.5. Tahap Kegiatan

- 1. Persiapan penyediaan akomodasi, transportasi dan konsumsi.
- 2. Mengadakan jumpa pers.
- 3. Penyelenggaraan simposium.
- 4. Penyusunan Laporan dan Penyebarluasannya.

1.6. Peserta

Untuk menjaring masukan yang diperlukan, telah diundang peserta yang terdiri dari pakar, pejabat pemerintah, wakil organisasi masyarakat, dan perorangan dari 20 negara yang mempunyai p perhatian atau pakar di bidang kebudayaan dan lingkungan baik sebagai pembicara maupun sebagai peserta aktif (nama peserta terlampir).

II. KEYNOTE ADDRESSES

2.1 ADDRESS BY THE MINISTER OF EDUCATION AND CULTURE, OF THE REPUBLIC OF INDONESIA TO THE INTERNATIONAL SYMPOSIUM ON CULTURE AND ENVIRONMENT BOGOR (INDO-NESIA), MAY 21, 1992

by : FUAD HASSAN

It is indeed a pleasure for me to have the opportunity to make some remarks regarding the theme you are going to deal with by holding this international symposium. I like to express my sincere appreciation to the initiative taken by the UNESCO's Director General, Dr. Federico Mayor, to assign this distinguished forum with the task of discussing significant issues pertaining to manifestations of cultural development; not less important are those urgent problems of safeguarding our natural environment.

Nature and culture are two dimensions of the realm in which human nurture takes place; both are resources for man's survival in order further to have a meaningful existence. Nonetheless, one cannot deny the fact that the progressive trend of civilization has left its impact on both dimensions. While other organisms remain to be what biologist J. von Uexkull called monodic beings, humans turn to become nomadic, never stop expanding and exploring in search of novelties and discoveries; man's world is indeed one of ventures and adventures. Man's world is notjus a real world, but a world of possibilities; human beings transcend the real into the possible, and consequently his world is not just one of perceived facts but moreover of projected images. In every encounter with reality man tends to find an *apertura* which stimulates his desire for further exploration; this must be the reason why man never experiences his present condition as a terminal state, but rather a *status quo* to proceed further into the world of possibilities.

The fact that man is also a tool-making animal is definitely supportive to his drive towards the expansion and exploration of his world. In the course of history, his tool-making capabilities develop in a wide spectrum of modes and varieties that eventually ends up with the mastery of innumerable technologies, enabling him to manipulate his world and transforming it into an environment of comfort and convenience to suit his needs. In the longer run, it is this drive to expand and manipulate his world beyond conceivable limits that blur the distinction between need and greed; and it is only in recent times that mankind has become aware and cognizant of the terrifying effects of his own deeds. Globally wide-spread scenes of decay, death and disasters tend to become the main course of our daily menu presented in the most vivid manner by the information media.

We live in an era of technological advance and breakthroughs, we even tend to glorify technological progress as the crowning of human achievements ; to an extent this tendency is justified, since numerous technological novelties and inventions are indeed constructive to the enhancement of the quality of human survival. However, one must not overlook the fact that it is also owing to the indiscriminate employment and application of various modern technologies that often leads us towards situations of defects and deteriorations of nature which actually is a resource for survival, for us as well as for our generations to come.

Successive forums have been held in the last decade to study and discuss ways and means to prevent further deteriorations of our planet earth; gatherings of students and academics, experts and officials, and soon the Earth Summit in Brazil next month, indicate the urgency of the issues to be dealt with concerning the preservation of our environment for sustainable development.

The pressing challenge facing us today is how to transform the recommendations resulting from those deliberations gradually into concerted programs of action on a global scale. In this regard we should refrain from inclinations to be extra-punitive or embarking on scapegoatism. If the problem is ours to share, then it should be one of our common concern for which we also share responsibility. With this attitude we will not forget the global dimensions in searching for an agreeable and a mutually acceptable solution of the problems concerned.

Let me now turn to the question of culture as an all-encompassing feature of human existence. Indonesia welcome the idea of the United Nations' proclamation of the World Decade for Cultural Development. I am sure that the message of President Soeharto reflects our sincerety to take cultural phenomena into consideration in spite of rapid social changes as a consequence of national development efforts. In fact, this is affirmed by a clearcut formula in our Guidelines of State Policy, namely that "national development is in essence cultural development".

In a nation characterized by cultural pluralism we have learned how to enrich ourselves by the high frequency of cultural encounters; it is also through this process that we learn how to appreciate varieties and nuances of cultural manifestations. Therefore, to be Indonesian does not necessarily mean to be alienated from one's primary cultural matrix.

However, our enthusiasm about culture as a matrix on which we maintain our identity is not seldom disturbed in the case of encounters with alien cultures, expecially when the utilization of advanced communication and information technologies can create imbalances in terms of influence. In my address at the Plenary Session of the 26 th General Conference of the UNESCD last year. I made a remark about the fact that the capacity to produce and to distribute information varies widely from country to country. particularly among developing countries, where present imbalances in the flow of information material has turned many of these countries into mere consumers of information produced and distributed by a few vastly superior centers backed by advanced and sophisticated technologies. Such imbalances naturally contribute significantly to the formation of perceptions with respect to other nations and cultures, and in turn having bearings on shaping cultural and other interactions among nations. Through audio-visual means of broadcasting programs, our youth is increasingly overwhelmed by the continuous exposure to alien behavioral and cultural manifestations, under which influence they become more and more attracted to alien behavioral norms and cultural values, and eventually ending up by glorifying alien lifestyles.

I think that cultural encounters are enriching in so far it initiates a process of mutual understanding and mutual respect, characterize by tolerance rather than any desire for dominance. Considering contemporary realities, Indonesia's response is to enhance cultural resilience by designing a culture policy that encourage the preservation of traditional cultures and concurrently

provide ample room for the development of our shared national culture. A segment of this formula is reflected in our language policy; while the existence of local languages is acknowledged and is still taught in elementary schools as local content of the curriculum, the Indonesian language is by policy further developed and has become effetive as a national language in the real sense.

However, more is needed than just designing culture policies of individual nations; the problem we are being confronted with is how to give significance to the UNESCO-sponsored and UN-proclaimed Decade for Cultural Development. I presume that this should imply a universal approach in which UNESCO can play an active role in concert with its member-countries. What should and can be done has been clearly stipulated in existing documents concerning the Decade; a special Secretariat for the Decade has been established; regional conferences has been held to formulate action programs to be implemented during the Decade; what else should follw if not concrete steps to be taken to initiate a momentum of self-propelled world cultural development as aspired by all of us.

Time does not permit me to be more elaborate about this issue ;however I will in all modesty make myself available as a resource person when necessary. I think the problem is important for all of us; the more so since nowadays the tendency is to measure development in terms of economic performance and technological achievements. One should not overlook the fact that the objective of development is man, not only as an individual and social entity, but moreover as a cultural being.

I do hope that this distinguished gathering will result in the formulation of action programs designed to give meaning to the Decade of Cultural Development; in that case, this first day of the celebration of the World Day for Cultural Development will have its significance. I have no doubt that this Symposium will succeed in achieving its goals.

> Jakarta, 21 May 1992 Minister of Education and Culture, Of the Republic of Indonesia.

Fuad Hassan

22. CULTURAL DIMENSION OF SUSTAINABLE DEVELOPMENT

(Paper delivered to the International Symposium on Culture and Environment, May 21th, 1992 in Bogor, organized by the Ministry of Education and Culture of the Republic of Indonesia, in cooperation with UNIESCO, Paris).

by : Emil Salim

10.00

Like any other developing countries, Indnesia was initially an agricultural based economy. Its population strives on folling land and forest for their living. Its total number of population was small and fully sustained by the nature's carrying capacity.

Nature played a dominant role in such communities. All creatores, including man, are part of a great chain of being with God at the top and man's subordination to nature.

Initially the non-explainable forces of nature, such as, the fires of the mountain, the rice growing capacity of the earth, the capability to provide fish by the sea became part of mysticism.

There is a God of fire, a God of agriculture, a God of the sea to whom people shows their gratitude.

Man is taught to live in harmony with all creatures and the environment. This teaching was strengthened by the entrance of religions into Indonesia, such as Buddhism, Hinduism, Islam and Christianity.

Religion entered into Indonesia through the adaptation of local customs. Therefore we experience religious ceremony which is affected by customs and culture.

In Bali there is a special day devoted to pray for the animals, water, trees and changing seasons, to express gratitude for what mother nature is providing to mankind.

In the Maluku's, local custom communities establish "local custom police" called the Keruang Corps to watch that certain custom's laws are being followed, such as "sasi" the prohibition to fish in rivers during certain period to give them the opportunity to lay eggs and breed. The same rule applies in West Sumatera.

In Irian Jaya one may not filth the rivers, because rivers are the main source of food and water. The same rules apply in the Badui region in West Java, where rivers are kept clean and are most drinkable at the source.

Men are expected to act in accord with their nature, both human and external, And men's behaviour is guided by the teachings of religion. The most important principle of the religious teaching is that man has to live in harmony with God the Creator, with the society and with the natural environment.

As a consequence of this principle, man's search is not to strive for materialism only, or spiritualism only, but to strive of the proper balance between materialism and spiritualism. And such an equilibrium is to be embodied into the concept of "the wholesome man".

The achievement of such a concept of wholesome man is currently the official goal of the Indonesian long term development plan. In order to achieve this goal, emphasis is given not only to material development, but also to spiritual development as well.

The alim of a harmonious way of life with God the Creator, with the social and with the natural environments, opens the way for a pattern of development which comprises all dimensions of life, including environmental considerating popularly known as "sustainable development".

This pattern of development that Indonesia likes to follow, deviates from the conventional pattern of development as launched in the Industrialised countries.

The conventional type of development has been successful in raising the material welfare of the Industrialized nations by a factor of twenty between 1900 and 1990.

Such manifold increase in material welfare has been made possible due to a thirty fold increase in the use of fossil fuel energy and a fifty fold increase in industrial production.

Energy, transportation and industry were the major driving force of conventional development in the industrialized countries.

But the price to the globe is high, We are experiencing to day world wide environmental destruction such as :

- (1) global warming;
- (2) sea level rise;
- (3) acid rain;
- (4) climate change;
- (5) cost of blodiversity,
- (6) pollution of the sea;
- (7) land degradation and desertification;
- (8) urban slums.

And because of such a global wide environmental destruction, the United Nations deemed it necessary to convene the Earth Summit in June 1992 in Rio de Janeiro, Brazil to discuss ways and means to cope with these problems.

These global environmental issues are mare consequences and symptoms of development. The causes of these issues are manifold.

Linked to cultural dimensions of these environmental issues there seems to be at least five major forces at work underying the pattern of conventional development.

It implies that :

First, is the strive for materialism, the fruits of development are captured in the notion of gross natural products, which include mainly quantifiable goods and services.

Second, the notion to prefer more rather than less. More production and consumption is preferred than less. The whole economy, especially through advertising, is pushed towards preferring more rather than less.

Third, in the process of development, considerations are short, because as Loard Keynes mentioned "in the long run we all die", Economic policies are aimed at short term goals to be reached in a short term period.

Fourth, the process of development is centred on goods for individual consumption. The price mechanism captures individual demands as revealed in the market, such as most consumer goods, But Social demands such as nature and the environment are not sufficiently revealed in the market. Fifth, rationalism is the major driving force in conventional development. Values based on culture or religion are subsumed under the notion of "ceteris paribus". Development is conceptualized into rational models, which are quantifiable and hence computable.

These than are the five major considerations that have set the conventional pattern of development.

Under these circumstances natural resources are being separated from their role as part of the ecosystem. Natural resources are treated as an indepencent factor of production. Development has an effect on natural resources which is considered in isolation from the ecosystem.

But he working of ecosystems are based on certain principles. These are:

- the principle of interdependency, in ecosystems every item depends on everything else;
- the principle of diversity, the more diverse the ecosystem the more stable the ecosystem becomes;
- the principle of equilibrium, all items of the ecosystems are in equilibrium;
- the principle of efficiency, each item in the ecosystem functions efficiently,
- the principle of sustainability, each items sustain each other within the ecosystem.

With conventional development these principles ceased to function. And this explains why conventional development has degraded and brought destruction to the environment.

Such an awareness has created the need to search for a new pattern of development; namely sustainable development. A development which is technically feasible, economically viable, environmentally sound and social-culturally acceptable.

It is development that recognizes resources as being part of ecosystem. And as such uphold the principles of interdependency, diversity, equilibrium, efficiency and sustainability in the functioning of ecosystems.

Development should therefore maintain the functioning of the ecosystem by maintaining the application of these principles. It also means that sustainable development requires the modifications of the five underying forces of conventional development.

It implies that:

First, the strive towards materialism needs to be balanced by non-materialistic values in order to achievy a balance between the needs for the body and the mind;

Second, the strive for sufficiency in particular is related to the carrying capacity of nature and society. Consumption and production may not overburden the carrying capacity of nature and society.

Third, short term consideration should be balanced by long term considerations. Short term development should be integrated with the aims of long term development.

Fourth, individual needs must be put in balance with community needs. Social consumption needs and aspirations must be met.

Fifth, while rationalism is necessary, it is not sufficient. If must be complemented by religion.

These then are the five major driving forces that will be released through the development of the cultural dimension of sustainable development.

And this is to be implementaed in the course of sustainable development to reach the concept of the wholesome man who recognizes the need that man must live in harmony with God the Creator, with society and with the natural environment.

||

It has always appeared incontrovertible and obvious that cultural dimensions must be taken into consideration in the pursuit of sustainable development. But how this is to be done has always been in need of an explicit definition and articulation. Such a need is particularly felt today as many developing countries enter their third or fourth decade of development.

The problem is not limited to the developing world as even in countries that are not generally classified as developing, recent developments have shown the volatile interaction between culture and politics. This is in reference to the countries in culture and politics. This is in reference to the countries in the eastern part of Europe where we are witnessing a resurgence of cultural and perhaps even primordial sentiments. That resurgence seems to have affected policies and other developments and has unfortunately led to violence.

Even in the more advanced, industrialized countries, increased attention is being directed to the cultural aspirations of their so-called indigenous population groups, especially as of their so-called ed indigenous population groups, especally as such groups have become more politically articulate. In such a context there has been a growing activism on behalf of the native Americans and Inuits (or Eskimos) in North America, the Lapps in Scandinavia, the Maoris in New Zealand, and so on.

Also in the industrialized countries — and to some extent also in less advanced countries — there is the problem of population groups, indigenous as well as migrant, which are on the margins of the cultural mainstream. Such groups have not only been marginalized, but many among them have also been relegated to the lowest reaches of a country's social structure, forming what may be called an underclass that threatens to become a permanent feature of the social structure.

Howerver, in the international context most attention seems to be focussed on the cultural aspects of development in developing countreis, especially in countries possessed of multi-cultural or plural societies. Such a plurality can generally be seen in apatial terms, in terms of diversity on a horizontal plane. But in several instances it has also become manifest in terms of the vertical dimensions of a social structure.

The foregoing points at the complexity of the problem of considering the cultural dimensions as we pursue development 1 a problem that must be looked at in different spatial, temporal as well as in different social contexts as in the examples cited above. There seem to be at least 4 basic types of social contexts, marked respectively by :

- A renewed or resurgent cultural assertiveness in the wake of, and accompanying political change,
- A regained sense of cultural identity on the part of ethnic minority groups, generaly dwelling in specific locations, as the result of an emancipation which has previously been denied, obstructed or even suppressed,

- The presence of servere cultural frustrations on the part of disadvantaged minority groups that are marginalized in cultural, social and economic terms, or
- -- Conditions pertaining to plural societies.

As the focus of the concerns that are presently felt seem to be directed towards plural societies I would like to raise some considerations in that context.

First, we must recognize that in many cases developing countries emerged into independence while encompassing a diversity of cultures into a new nation-state. This resulted in the formation of plural societies.

A plural society requires that there is a unifying or integrative force which keeps society together as a nation-state. National integration might be rooted in having a common and shared history and this has transcended cultural differences between the groups constituting the new nation-state. It might also be further enhanced by a shared perception of common aspirations and a common future.

Having inspired and motivated the nationalism which has given birth to new and independent nations, the strength of the sense of national integration forms the bedrock upon which to further build and develop the nation. The task of nation-building is essentially the task of constantly strengthening national integration and overcoming disintegrative or centrifugal forces which might drive apart a nation's constitutent cultural groups. It is also a task of developing a common, national culture able to transcend the constituent sub-cultures.

This does not mean that sub-cultures are to be discarded. On the contrary, the national culture ought to be the cumulative totality of all subcultures; a total which is bigger than the sum of its parts. This is what Indonesia's national motto of "Unity in Diversity" stands for. To make all cultures flourish through encouraging cultural participation and cultural expression is a major element of nation-building.

All of this does not mean that the path of nations with plural societies into their respective futures will always be smooth. It is inavoidable that there will be a dynamic tension between centrifugal and centripetal forces in all plural societies. Buch a tension should be managed and kept within Properlimits through various means. Animportant means is an approach which emphasizes 2 major and essential aspects, and these are :

- -- the rigorous application of the principles of equity in policy-formulation and especially in the distribution of development projects and their implementation.
- --- the minimization and management of adverse social impacts that may arise in the wake of change and development.

Focussing on those aspects implies the recognition that a major potential source of tensions is the presence of discontinuities in terms of well-being and the quality of life between different population groups. Such discontinuities or gaps may be found along the horizontal plane as well as along the vertical dimensions of the social structure. Another implication is the need to protect the rights of different population groups and communities and the advancement of their interests.

In Indonesia the pursuit of such an approach is manifested in the distribution of development projects and the distribution of budgetary allocations for infra-structure development. In this context the Government will shift the emphasis of development from the Western part to the Eastern part of the country.

To deal with adverse social impacts, Environmental Impact Assessments -- legally required for all projects -- must have a component pertaining to social impactes. In a larger context, social impact analysis will be carried out when formulating policies.

An approach which incorporates the pursuit of equity and the management of social impacts must take into consideration the very important aspect that developing countries and their constituent cultures and subcultures are undergoing rapid change. Moreover, the pace and the character of change may differ from culture to culture. Therefore, in trying to minimize adverse social impacts, the capability of a given culture to absorb change must also be taken into serious consideration.

Whereas the foregoing pertains mostly to conditions as these are found in developing countries with plural societies I believe that the approach proposed above would also be relevant to most other countries experiencing cultural and social tensions. In such a broader context and in recapitulation,

The chimpanzee is our closest related species, same skeletal structure, same musculature, some 95% of the genetic makeup in common. The two evolutionary lines split from the ancestral primate stock about five million years ago – this was the moment when one might say that people first appeared on Earth.

By three-and-a-half millions years ago our ancestors were striding confidently across the landscape.

At what is now Laetoli, in Tanzania, they walked across a mudpan and left a unique trail of footprints to be fossilised beneath the ash then showering from Lemagrut, a nearby volcano.

In the best preserved section it can be seen that more than one individual had walked across that mudpan three-and-a-half million years ago. Two — possibly three — were involved, there being some belief that the larger prints represent a double trail where one individual had walked in the steps of another — follow-my-leader fashion.

Extrapolating from the evidence just a little further, some authorities have speculated that what we have here is not only evidence of the antiquity of the bipedal gait, but also evidence of the nuclear family at 3.5 million years bp. Male on the right, female on the left, the latter apprently carrying a load (the prints are deep for bodysize), paerhaps a child on the hip

The famous Lucy, from the Afar region of north-east Africa, dated at 2.4 a widespread and long-surviving species.

The famous Lucy, from the Afar region of north-east Africa, dated at 2.4 million years -40% of an entire skeleton, confirming - if confirmation were needed - the upright bipedal gait of the human ancestor at that time - and here's the Taung skull from the southern end of the cotinent - dating a bit of a problem, probably around two million - noted as the type specimen of the taxon, the first australopithecine to be described, by Raymond Dart in 1925 - Australopithecus africanus.

The australopithecines were slight figures in the pristine landscape. Lucy, for instance, was 110 cms tall and weighed no more than 27 kgs, the largest of her kind were about 150 cms tall, and may have weighed up to 68 kgs. They were small, weak, and lacked any kind of physiological atribute which would have given them an edge in the survival stakes. No. claws, no sharp teeth, no wings, no great speed on the run, not especially good at climbing trees – yet they thrived in an environment at least as wel populated with big dangerous animals as it is today. How ?

Lucy is the star of the Afar collection, but it includes a wealth of other important material. Fossil handbones, for instance, here combined with modern examples, indicate that the australopithecine hand was no different from our own – no less able, 2.4 million years ago than it is today.

But tools of a regularly manufactured pattern don't appeat in the archaeological record for another half-a-million years plus. The earliest are reckoned to be the work of Homo habilis – Handy Man' – and the arrival of technology in human affairs was thus given generic distinction from the australopithecines.

Homo habilis was found at Olduvai Gorge, in the 1960s, in the lowest beds, which are dated at 1.9 million years bp in the 1970 specimens were found nearly 1000 kms further north, in fossil beds adjoining Lake Turkana in Kenya.

But here was someting different. Along with Homo habilis, specimens of two other hominid taxa were recovered from deposits of the same age -1.6 million years - indicating that three putative ancestors of the human line had lived at the same place, at the same time.

On the left, Homo habilis; on the right, Australopithecus; in the centre, Homo erectus.

Homo erectus is the most widespread and longest – surviving of the fossils. The oldest-known is this East African specimen, at 1.6 million, and the youngest is from China, less than 300,000 years old. The species is also known from Europe, but the first specimen to be described came from the banks of the Solo river, near Trinil here in Indonesia; found in excavations led by a Dutch army doctor, Eugene Dubois in the 1890 s.

This is Dubois' own photograph of the memorial he had erected to commemorate a discovery which he considered to be of major importance. The find consisted of a tooth a thigh-bone — with a curious outgrowth, also found in modern man, as shown here, and a calotte, a skullcap. Dubois made a reconstruction of the human calotte, a skullcap. Dubois made a reconstruction of the human ancestor he believed he had discovered — giving it the divergent toes and therefore tree-climbing ability which he felt must have found. Since Dubois' day we have learned that the human ancestor was striding purposefully across the savanahs of East Africa long before Homo erectus arrived on the scene. Indeed, although erectus was certainly a descendent of the earlier forms, and seems likely to have migrated out of Africa around 700,000 years ago, those migrants were not the ancestor of modern humans. Homo erectus out of Africa eventually became extinct.

In Africa the hominid line continued, with little evidence of evolutionary change until about 200,000 years ago, when modern humans arrived on the scene. Whether this was a sudden event or a gradual development is still a matter of conjecture. Enlargement of the brain was certainly a factor, and the significance of this could only have have been reinforced by the advent of language.

At this stage in the story genetics take over from fossils as the best means of elucidating the progress of human evolution. Fossils can indicate generic and specific relationships, but the genes can provide information on relationships within species, between populations and so-called racial and ethnic groups.

Over the last decade or so, comparative analysis of genetic material from individuals around the world has shown that we are all much more closely related than appearences might suggest. Furthermore, the entire human population of the Earth is descended from a group which migrated out of Africa about 100,000 years ago. The differences in appearance and behaviour which have assumed such significance in historical times are potent expressions of the capacity for physical and behavioural adaptation that we all possess. They are not differences so much as symbols of what we have in common -a talent for adaptation: that is our survival strategy.

The migration of modern humans out of Africa began around 100,000 years ago. Whether this was a single migration by a relatively large number of people, or a steady trickle over many years is not known. What we do know, is that the migration and its descendents had populated Europe by 35,000 years ago, south-east Asia and Australia by 40,000 years ago, and had crossed the Bering Straits into the Americas by 15,000 years ago.

In no more than 3 percent of the hominid's entire evolutionary history modern humans found ways of inhabiting every feasible ecological niche that the globe has to offer. Universally, they employed the survival strategy of

species: adaptability - the capacity to perceive a problem and conceive a solution.

The world today presents innumerable examples of this talent in operation; here are just a few of them:

Hunter-gatherers – certainly the primary food-production strategy of the species, carried on the Kalahari and also.

In the Ituri forest, where the Bambuti adapt different materials to basic need of people everywhere – shelter.

The Rendille of northern Kenya cover their huts with mats of woven grass and.

transport their goods by camel.

in Oman, where oil wealth has changed many things, the Harassis still live in the desert.

but camels are often transported by truck.

The Fulani herd longhorn zebu cattle in the Sahel.

Cows are sacred in India, and no wonder, when – among other things – their dung provides the energy–equivalent of 68 million tonnes of firewood each year. That spares a lot of trees from the fire.

On the Nilgiri Hills of southern India, the economy and culture of the Toda people are founded on domesticated buffalo.

above the arctic circle, in northern Finland the Lapps still utillise the reindeer.

and preserve a nostalgic vision of their past.

The potato one of the best bundles of nutrition known to man: consuming sufficient potato to fulfill carbohydrate needs also provides an adequate protein intake. It was originally domesticated in the Andes, where it is grown up to 4500 metres above sea level.

Wild varieties still abound in the region and cross-pollination between wild and cultivated varieties maintains a high level of diversity.

Farmers recognize more than 400 varieties, each with distinct characteristics of suitability to particular cultivation situations, and of disease resistance etc and will customarily plant several varieties in a single field.

Taro, breadfruit and banana, can only be propagated by human intervention in their cultivated form, and have sustained Pacific islanders for centuries. the olive and fruit were fundamental to the economies of rural mediterranean communities

Rice feeds three out of every five people on Earth and its cultivation is truly the art of life in Bali.

The adaptive strategies behind most of those illustrations were concerned with food production and supply. But that's only the beginning of the story. With food supply identified, adaptation moves into the realms of social strategy and culture, developing practices and beliefs which serve to ensure continuity in a given ecological situation – both of food supply and future generations. This requires some sound appreciation of ecological realities, of the relationship between organisms and their environment, and of humanity's absolute dependence upon the well-being of the Earth. And indeed, we find that culture and environmental well-being of the Earth. And indeed, we find that culture and environmental well-being are not only interrelated but also self-sustaining in all long-established societies. Furthermore, although the social and cultural practices found among societies around the world may differ greatly, and even appear contradictory, their basic function is likely to be very similar - related to some way to the ecological realities of maintaining a human population in a particular environment. Where environments differ so may cultures - for purely ecological reasons. For instance:

The Samburu are semi-nomadic pastoralists on the extensive rengelands of northern Kenya.

When Lemangan was to be married Samburu custom obliged his family to give the bride's father a small herd of cattle including a fine bull.

when the ceremonies were over, Lemangan (accompaied by his bestman) led his bride back to his home compound, over the route along which he had driven cattle the day berfore,

Next morning, Lemangan's family presented the new bride with sheep, milk cows and calves — the nucleus of the herd upon which Lemangan a his bride would found their independence — a new familly line.

By contrast, the Bhiyaran family living near Jodhpur in India, must accumulate a significant amount of wealth for each of their daughters to take into

marriage.

The Bhiyaram family are Bishnois, among whom it is customary for the bride's family to provide a dowry; among the Samburu the groom's family must pay brideprice. Wealth changes hands in both cases, but moves in opposite directions. Why the difference ? The explanation is ecological.

The Bhiyaram family's relationship with their environment is one of intersive agriculture. They farm 22 hectares in a region where there is little or no land to spare for the establishment of new family lines. The dowry serves to restrain population growth by making marriage expensive for the bride's family.

Samburu landuse is extensive, with continuously high labour requirements, especially of children, for herding small stock. Mothers are highly valued even sought after — hence marriage is expensive for the groom's family.

It is intersting to note that in both instances, whichever way the wealth is flowing, it must be derived from accumulated surplus. This in turn implies efficient landuse – and striking a balnce between maximum output and sustainable yield. Getting it right ensures continuity. Furthermore, an accumulating surplus is always available as a reserve in hard times.

Continuity is a notable feature of Torbel, a village inthe Swiss Alps. The land area available to Torbel for farming totals about 800 hectares, and it has been in use for close on 1000 years. In effect this is a vertical archipelago, with the land rising from 900 metres in the valley, to over 2000 metres on the alp. There is a climate gradient up the slope, permitting a renge of crops – grapes in the valley, potatoes in the mid-scopes, barley and dye at higher elections, and lots of grass.

The length of the growing season declines with altitude – from 18 - 20 weeks in the valley to 10 to 12 weeks on the allp. With no primary production available – nothing coming out of the ground for 30 weeks of a year, Torbel operates on a storage economy. Cows turn grass into milk which is stored as cheese; farmers store hay to feed the cows through the winter – and they need a lot of hay. The cows spend 7 months in the barns. Each consumes about 3 tonnes of hay, which means that each hectare of meadow must produce 8 tonnes of hay in 3 to 4 months. That's a lot of work.

As the grass begins to grow in the late spring they are driven up to the alp, to be herded and milked by one appointed villager and young hellpers, while

among the people presently living at Torbel. All 12 of those names can be found as signatories to regulations concerning landuse which were set out in 1483. In fact there are 15 names on the document -3 family lines have died out in the last 500 years. No new ones have been created.

Drawing up regulations and writing them down is an effective way of avoiding the lesson of failure — which can be a problem: when a system is working well how do you convince people they should keep operating it that way ?. Rules and regulations are required. They can be written down, or they can be incorporated in a system of beliefs — as in Bali for instance.

Science got around to understanding the ecology of wet-rice cultivation only in the past 20 years or so — but the Balinese and others have understood its potential and particular requirements for centuries. The nitrogen-fixing role of the little water fern, azolla, was assessed by Singh and Singh in 1990, for example, but Vietnamese rice-farmers founded temples in its honour long ago.

Bali offers ideal conditions for rice growing – with volcanic soils, consistently high temperatures and rainfall it is possible to produce three harvests in a space of 14 months.

 but such production is very labour intensive: calling for and average of around 1500 man – or woman – hours per hectare for each harvest. In addition, the mountainous terrain of the island poses problems as well as offering opportunities.

Here we see more than one stage of production on a single slope. A most efficient way of maintaining maximum production, but requiring a good deal of regulation. Water must be channelled so that terraces can be flooded and drained, ploughed, planted or harvested in sequence, for example, so that production cascades down the slope, as it were. A complex network of drivers dams and canals controls the water supply to the rice terraces and management of these is hendled by a secular authority – the subak – but the actual operation of the system is set in the context of religion ritual – the transcendental authority of the rice goddess – Dewi Sri.

Each stage of rice production, and of water control — flooding, ploughing, planting, draining, harvesting etc is marked by a religous ritual, determined by a calendar which serves to coordinate production among the subaks.

the rest of the village gets on with the business of making hay.

The cows are privately owned, these fields are also private property, but the alp is common land — which immediately brings to mind the issue raised by Garrett Hardin in 1968: what he called the tragedy of the commons. Individuals could be expected always to exploit the common land for private gain. In Torbel this might be by sending up an extra calf or two, which they would sell in the autumn.

The Torbel villagers thought of that problem a long time ago. In 1517 they drew up a regulation stating that no one is permitted to send more cows to the alp than he can winter'. Thus use of the common resource – the alp was neatly tied to effective use of private landholdindg, ensuring the proper management of both. This impressive piece of environmental regulation was written on parchment and is still in force,

along with other edicts controlling landholding rights, marriage patterns, inheritance and so on — some of these date back to the 13th century. Together, they are responsible for a remarkable degree of continuity in Torbel.

This is three generations of the Seematter family, one of 12 family names There are temple ceremonies marking major events in the calendar and farmers customarily erect temporary shrines in their fields.

Religion in Bali is an extremely complex affair which seems to have its own end but it is nonetheless clear that religion here also has a functional role, in that it serves to maintain rice production at the highest possible level, principally by keeping water use consistent with water supply throughout the year – never over-taxed, never under-utilised.

Religion, and therfore rice, pervades all of Bali, creating what western our operators like to describe as a rich traditional heritage. There is an idea that traditions are timeless, fixed and immutable. But no. They fade and disappear if they cease to perform a functional role, and they can change too, very rapidly if their functional role begins to have a negative effect.

The Toda for instance, herd buffalo on the Nilgiri Hills. Traditionally, they were the uppermost in 3 distinct bands of human activity on the hills – those closest to them were agriculturalists, below the agoics were artisans and traders. The 3 groups maintained a symbiotic relationship – trading their produce.

The Toda effectively deified their buffalo. They maintained a sacred herd, owned by all, but herded by clans in rotation, usually by those on hard tunes, in need of aditional produce for a time — the sacred herd was a form of mutual insurance.

Their temple is also a dairy, but the priest — also a rotating responsibility — churns surplus milk to butter for distribution among the community. They operated a polyandous marriage system, that is, a woman took several husbands and kept paternity a secret. Each husband bore social responsability for his wifes offspring, and perhaps cherished ideas of biological fatherhood.

Polyandry served to limit the establishment of new family lines and concentrated wealth as if moved from one generation to the next, rather than dispersing it among offspring.

But in modern times the Toda are not as isolated as they were. The symbiotic economic links with the other groups on the Hills have broken. A cash economy prevails. Furthermore, fertility declined, birthrates have fallen – the tradition of polyandry saved no useful pinpose – indeed if exercise a negative effect – tradition changed.

Ponnaye had three fathers, and now he has two wives. Toda tradition remains polygamous, but in one generation it has moved from polyandry to polygyny.

Tradition is a bit of a mixed blessing in the context of western recreation On the Queen Charlotte Islands on the Pacific coast of Canada, for instance, the haida indian villages are long abandoned, mortuary poles falling, their occupants merging back into the environment.

tradition is alive and well, however, in the hands of artists, flourishing in a modern cash economy.

In the eastern highlands of Papua New Guinea however, the persistence of traditional practices – very largely as a response to outside interests: tourism and so on – has a seriously deleterious effect.

This was a region where swidden agriculture flourished. Swidden an oldenglish word meaning forest clearing is better-known, if rather pejoratively, as slash-and-burn. At its best swidden is a functional imitation of the natural environments, transforming the natural forest into a harvestable one by replacing the diversity of the natural vegetation with an equally broad diversity of the natural vegetation with an equally broad diversity of edible plants.

In a classic study of swidden agriculture in the Philippines Harold Conklin recorded more than 1600 plants that were used at one time or another, including 430 cultivars, of which up to 150 may be planted during the first year of cultivation in a new clearing. 40 crop plants ensured a continuous year-round food supply. Inter-planted, their distribution replicated not only the diversity, but also the canopy architecture of the forest they temporarily replaced.

Much the same strategy was employed on the Nembi Plateau. Pigs were an important adjunct – serving as receptacles for surplus prod, in a region where storage is a problem and becoming the basis of a reciprocal exchange system – moka, which reinforced social obligation and inspired the phenomenon of the bigmen.

All very fine, until the arrival of the sweet potato. A crop which pigs enjoy very much and which now dominates nembi agriculture.

The pigs are doing well, the bigmen too, with the added attention of tourists, but the women are suffering. Nutrition levels have fallen, workload has increased. Not surprisingly, birthrates have dropped. So in the end human biology will correct the cultural aberration.

These examples have all come from rural communities, mostly operating in a subsistence economy. What, if anything does the interdependence of culture and environmental wellbeing in rural areas have to say for urban society?

Well, cities do not exist in isolation.

Their form reveals something of the broader context -

market industrial business suburban

and their residents possess a range of talent and an enormous reservoir of the human potential for adaptation.

The knowledge and the technological capacity abound – the issues have been indentified and disseminated. 3.5 million years of evolutionary history is eloquent testimony of humanity's capacity for adaptation and, by implication, grounds for belief that the species will identify and apply the regulatory controls so patently needed if its survival beyond the present crisis is to be assured.

3.2 MAN, ENVIRONMENT AND CULTURE :

From Traditionalism to Modernity

By : Harsja W. Bachtiar University of Indonesia

Introduction

This short paper is an endeavor to seek more understanding and sympathy for the plight of many dispersed small communities of human beings and their respective cultural traditions on which they have been relying for many generations in maintaining what they consider to be appropriate relationship with their natural environment. External forces are encroaching on their inherited territories with but little concern for their traditional way of life, sometimes providing them with monetary compensations which they cannot handle since the ability to manage money is associated with a culture not sufficiently known to them.

It is written in the context of the World Decade for Cultural Development undertaken, amongst others, to encourage a greater acknowledgement of the cultural dimension of development.

The People and Their Environment

Ours is a world inhabited by territorially based societies of large and small sizes and of innumerous sizes in-between, each associated with at least one culture. The large societies, including Indonesian society in this extensive archipelago, are ordinarily associated with a diversity of cultures, usually including a dominant culture which keeps the many peoples who constitute the larger society together as one social, and usually also political, entity.

The human beings who toegether constitute a small societal community, a rapidly disappearing social species, necessarily live in a natural environment which consists of a complex web linking the land, air, water, plants, animals and other life forms to each other and to these human beings.

They have to adapt themselves, more or less, to the realities of their natural environment to enable them to survive and live as members of their territorially based community. Throughout the historical past of their community they gradually acquired more knowledge about their natural environment. They expanded their knowledge about the types of things which they could gather from the jungle to sustain themselves, the species of animals to hunt and the techniques of hunting, the techniques of catching fish from the rivers and the seas, the slash and burn techniques of agriculture, and the domestication of certain species of animals.

They maintain close relationship with their natural environment, having acquired detailed konwledge of it, and cannot conceive of themselves as being separated from this environment.

The People and Their Cultural Tradition

The cultural tradition of each of such a community contains ideas about the environment which the members of the relevant community have inherited from the earlier generations. These ideas consist of certain beliefs about the universe and the place of human beings in this universe. These beliefs explain the many things which cannot be explained otherwise. The cultural tradition also contains cognitive knowledge, ideas about the perceived realities of the immediate environment of the relevant human community which its members have collectively acquired. Furthermore, the cultural tradition also consists of values and norms which the members of the relevant community refer to when evaluating objects or relationships and which provide the accepted guidelines as to how to behave, how to think and act, in relation to the environment which, it should be emphasized, includes other human beings.

There have been much appreciation on the part of the more traditional human beings, who usually lived together as small communities, for their natural environment. The few inhabitants of the relevant territories were dependent on their immediate natural environment for their food and other necessities. However, they did not have the capacity to cause much damage to their natural environment, their empirical knowledge and technology still being very primitive in comparison with modern scientific knowledge and technology.

Thus, each territorially based community of human beings developed its own cultural tradition, the product of a seemingly slow historical process, giving the impression as if nothing changed in a traditional community.

In the last centuries, however, in certain areas of the world, particularly in Europe and North America, these evolutionary processes in cultural development accelerated in speed sometimes involving revolutionary changes,

such as when the wheel was invented, or nuclear reactions were discovered.

The Teachings of the World Religions

Of much significance, although all too frequently ignored in discussions on environmental problems, is the presence of world religions in the daily lives of the uncountable number of aggregates of peoples referred to as societies, particularly in the Asian and African continents and surrounding islands.

'Teach of the world religions is based on statements contained in its sacred books. We all know that the basic teachings of Hinduism are contained in the Vedas and Puranas; the basic teachings of Buddhism in the Sutras; the basic teachings of Roman Catholicism and Protestant Christianity in the Old Testament and the New Testament; while the basic teachings of Islam are contained in the Holy Qur'an.

The world religions, especially the revealed religions, have spread across the globe, converting the so-called heathens into believers. At present, taking statistical figures of mid–1990, this global spread of the world religions has created alltogether a reported number of 995,780,000 believers of Roman Catholicism; 935,000,000 believers of Islam; 705,000,000 believers of Hinduism; 363,290,000 believers of Protestantism; and 303,000,000 believers of Buddhism; 166,942 believers of Orthodox Christianity; and others.

The adoption of a given revealed world religion by a given territorially based human community generally brings about the gradual destruction of the traditional more local beliefs which are not in conformity with those of the revealed religion.

There is a persistant demand among the believers of any given world religion for more close attention to their religious doctrines in thoughts and actions. Religious functionaries teach and preach, at regular intervals in the presence of a captive audience in mosques, churches, temples and other places of worship, to communicate to the devout the teachings of their religion concerning what they are expected to do or not to do, frequently by reminding them about the blessings which they can acquire through strict adherence to the religious rules or the damnation which they will have to suffer, in this world or in the world hereafter, if they violate these rules.

Strict adherence to the teachings of any of the revealed world religions usually requires the complete rejection of other beliefs, beliefs which are not part of the religious doctrine of the relevant religious community. The beliefs of their respective inherited traditional culture become identified as silly or fanciful superstitions which have to be banned from the thoughts of any one who claims to be a good believer of his or her religion.

The inherited cultural beliefs constitute, of course, the roots of the entire inherited cultural tradition of the community concerned, including traditional ideas about the natural environment. Unwittingly traditional norms, created in the distant past in respons to concrete experiential problems concerning the proper treatment of the natural environment are not heeded anymore. Consequently, many problems with respect to the relationship between human beings and their natural environment which have been overcome in the past, re-emerge as new problems which are sometimes not perceived as such by the locals until the appearance of modern knowledge on the scene.

Nevertheless, it should immediately also be noted that actually the revealed world religions contain favorable ideas concerning the relationship between human beings and their environment. The universe, being conceived as the creation of God, has to be treated with much respect so as not to destroy God's creation.

The Moral Community and Its Environment

A moral community consists of individuals who are united as adherents of the same set of beliefs and practices.

The moral community manifest itself as a territorially based collectivity of acting individuals who tend to give primacy to the community which constraints them in their activities but also provides the means to deal with the problems they are faced with. Their natural environment as an existing reality which provides the much needed sources of livelihood to sustain the relevant human beings requires thorough knowledge and understanding of how nature works.

Common beliefs pertaining to the natural environment provides the members of the relevant community with the source of moral authority, promoting regularity of conduct among them, or a certain discipline, if you will.
In perceiving their environment, whether natural or social, the members of the community are conditioned to accept the prevailing cultural tradition as the ways of perceiving the environment. They share more or less the same ideas about it. Even when they think individually as rational human beings they are bound to think in the same manner as do their fellow members of the community.

The same cultural tradition also provides the meaning to be attached to the relevant realities of the environment and prescribes the norms which all members of the community are expected to adhere to in their activities with respect to these realities. Thoughts and actions considered to be the product of individual initiative can indeed be individualized and particularized but at the same time retains the element of commonness.

Enter the State

The emergence of the state as a political structure and its growing bureaucracy imposes a gradually more dominanting new culture on the human beings who happened to inhabit parts of the territory now claimed by the state as its political territory. This new culture tends to be clearly manifested in the form of a legal system which is supported by a variety of offices, ranging from the office of the King/Queen or President through offices in the government bureaucracy, the judiciary, the military and the police, to an expanding number of other offices.

At present, each state is constantly engaged in the institutionalization of its legal system. Many states have also developed a national ideology with a few basic values as the core of such an ideology, providing the necessary legitimation for the legal system of the relevant state and a meaningful worldview for their respective citizenry.

The culture of the state has particular bearing on property rights, defining the property rights of the state itself as well as the property rights of its individual citizens. Certain property rights become the monopoly of the state.

Of much importance are the legal norms imposed by the state to regulate land rights. The legal norms pertaining to land rights as imposed by the state usually do not conform to the land rights as formulated by the more particularistic traditional cultures of the more limited traditional communities. The bearers of these traditional cultures usually have no power and no means whatsoever to defend what according to their own traditions, are their rights. To protect their inherited rights, they usually cannot relate themselves very well to the dominant state culture which is being imposed on them and therefore easily become the victims of the newly imposed legal norms.

The culture of the state also tends to alienate the children from the more tradition oriented parents through the obligation to study in the modern schools where they are introduced to the larger national culture, the culture of the state. Their own cultural tradition becomes a conservative burden which they tend to associate with the older generations.

Enter the Modern Business Enterprises

The state is not the only external cultural influence which tnds to undermine the more particularized traditional cultures. Th inclusion of the more local economy as part of the much wider world economy necessarily introduces another culture to the relevant helpless small communities, the culture of capitalism.

The world-wide expansion of the capitalist system is associated with the spread of a distinct international culture, rooted in the market mechanism of the modern economy.

The nature of business corporations, the core of the capitalist system, is qualitatively different from anything found in other cultures. Business corporations are profit-oriented economic enterprises, or enterprises which are established and developed solely for the acquisition of endless profits, if they succeed in the competion among similar enterprises in an open market.

One of the business enterprises which directly effects the small traditional communities is the logging industry in which vast stretches of land are purchased or leased by such enterprising companies to exploit the wood of the growing trees. Suddenly the pieces of land which in the past had been the land of the members of the relevant small human communities within the newly built fences has become prohibited land where none could gather wood or other forest products without permission from the company which now has authority over the land. The culture of the capitalist system has imposed itself on all inhabitants who have been living relatively peacefully on the newly expropriated land. The original inhabitants have to adapt themselves to the dominating culture of the more modern business enterprise as part of its unskilled workers or to go elsewhere to seek a more hospitable environment which becomes increasingly more difficult to find. Another example of a type of business enterprise which tends to push human beings from the land of their ancestors is the mining industry, whether the minig of oil, coal, tin, nicle, diamond, or any other valuable nonrenewable resources. For mining activities, which strips th earth of its stored riches, vast stretches of land are also expropriated with consequences to the indigenous inhabitants not unlike the consequences of the logging industry.

Furthermore, the formation of an increasingly large number of industrial development centers transforms the previously rurallooking landscapes into increasingly larger areas where modern technology dominates the scene and where, with the exception of laboring human beings, biological forms, such as grass, trees and animals have been replaced by machineries made of iron and steel enclosed by architectural structures made of stone and mortar.

From Collectivism to Individualism

These processes tends to cause a weakening of the community. Individual members of the community who previously gave priority to the interest of the community above their own particular interest gradually transform themselfes to become more and more individualistic, giving priority to their own individual interest rather than to the common interest of the community.

With this weakening of community sentiments and traditional social relationships, there is also a decrease of social awareness about the natural environment. More and more members of the community forsake their close relations with the natural environment. It becomes increasingly more difficult to get children and older youngsters interested in their natural environment. They tend to turn themselves away from knowledge which is part of their own cultural traditions and concentrate on knowledge taught in their schools, knowledge which originates mostly from educators who are brought up, live and work in the urban centers where truly natural environments are becoming a rarity.

The widening of the previously still traditional communities to become part of large scale more modern societies, eventually leads them to become part of one global eco-system. In suc a global eco-system the more modern cultures, such as the culture of the state or that of the giant business enterprises, encroach much more effectively upon nature, altering their environments, than the traditional cultures. Accompanying the inclusion of the previously traditional communities to become part of larger modern societies, there is the emergence of the cult of individualism and the idea of individual freedom without close linkage to the demands of social responsibilities.

The world-wide dissemination of the idea of human rights expressed in individual terms, emenating from the already modern, advanced, industrial societies, is received with mixed feelings by many leaders and knowledgeable members of society of the more traditional, newly modernizing societies, particularly in Asia and Africa, where the leaders are still fully concerned with national development endeavors to lessen the very disadvantegeous discrepancy between general conditions in their own societies and those of the already fully modernized societies.

Penetration of Scientific Thinking

One of the significant characteristics of modern cultures is the prevalence of scientific thinking, which may or may not be part of the culture of the state.

Instead of just endeavoring to ajust oneself to the natural environment, modern human beings are expected to be able to control nature, to exploit nature.

The near absence of scientific thinking in traditional cultures causes their bearers to be identified as ignorant traditional people who have no knowledge whatsoever about even their own natural environment.

In relation to these obviously ignorant traditional peoples, frequently referred to as primitive peoples, the scientist considers himself or herself as vastly more superior, as a superior scientist steeped in confirmed knowledge about the relevant empirical realities.

In his or her search for more and better knowledge and frequently also in the application of his or her scientific knowledge, the scientist tends to receive support from the giant corporations and governments.

With support from interested corporations or and the government the scientist enters the lives of the local tradition oriented inhabitants and influences their thinking, replacing many elements from their cultural tradition with elements rooted in what is known as scientific thinking.

The modernization of the national economy and its inclusion in the world economy contributes to the formation of more and more giant corporations, and even more lesser corporations, in search of endless profits.

The agents of the government, guided by the prevailing ideological doctrines and legal prescriptions which regulates the relationship between the citizens and their state (the latter not infrequently held to be identical with the Government), tend to be more concerned with the effectiveness of government administration and the sacrosanctness of the state than with the appropriate relationship between the citizens of the state and their natural environment.

In this manner all individuals who by law are citizens of the state have to submit themselves to the ideological doctrines and legal norms of the state, subordinating religion and cultural tradition, including traditional norms which regulate the relationship between human beings and their natural environment, to the increasingly effective demands of the state. The common people in the village communities, and even more so in the towns and cities, are forced to gradually shed off their inherited cultural traditions and to replace these traditions by the more modern beliefs, knowledge, values and norms of the emerging national culture, a process which the more thoughtful leaders, more aware of its negative effects on the roots of national culture and national identity, endeavor to slow down.

On the Necessity to Respect Traditional Cultures

Traditional peoples need not necessarily be ignorant about environmental problems but they may perceive the relevant relaties rather differently from the perception of outsiders, modem scientists, government administrators, enterprising businessmen, agents of law and order, and other perhaps well-meaning parties.

The interests of the government and giant corporations are certainly also legitimate. Particularly in the developing countries, such as Indonesia, it is in fact imperative to rely on the government and the giant corporations to effect the necessary rapid growth of the national economy which, in turn, may also benefit the common people, their general welfare and the quality of their life.

However, it should be possible to work out a more reasonable and more just balance between the requirements of the more traditional relations between those human beings who are still attached to their inherited cultural traditions and their environment and the demands of a modernizing society, dominated by science and technology, the government and increasingly larger corporations.

There is a need to pay more respect to traditions cultures of the smaller communities while at the same time bringing about the necessary changes in these cultures to adjust thoughts and actions of their bearers to the demands of a more modernizing society. Such a desired situation can be fortcoming if more tradition oriented communities also have developed effective arrangements to deal with their respective natural environment.

Their present seemingly negative activities in terms of the preservation of the natural environment is to a great extent caused precisely because of their dominance by much more powerful external forces, spiritual, intellectual, normative, administrative, political and, at times, sheer physical power which do not give them much room to think and act in accordance with their respective traditional cultures in their relations with the natural environment.

BIBLIOGRAPHY

- 01. Bellah, Robert, N., Beyond Belief: Essays on religon in a post-traditional world. New York : Harper & Row, 1970.
- 02. Bendix, Reinhard,

Nation-Building and Citizenship: studies of our changing social order. 2nd rev. ed. Berkeley, CA: University of California Press, 1977.

- 03. Durkheim, Emile, The Elementary Forms of the Religious Life. Translated from the French by Joseph W. Swain. New York: The Free Press, 1965.
- 04. Eisenstadt, Shmuel Noah, Tradition, Change and Modernity. Reprint of 1973 edition. Melbourne, FL: Robert E. Krieger Publishing Co., 1983.
- 05. Harris, Marvin, Cows, Pigs, Wars, and Witches: riddles of culture. New York: Random House, 1974.
- 06. Hawley, Amos H., Human Ecology: a Theoretical Fassay. Chicago, IL: University of Chicago Press, 1986.
- 07. Kroeber, Alfred L., Anthropology: Culture Patterns and Processes. New York: Harcourt Brace Jovanovich, 1963.

- 08. Koentjaraningrat, R.M., ed., Villages in Indonesia. Ithaca, NY: Cornel University Press, 1967.
- 09. Lappe, Frances M., and Joseph Collins, Food First. New York: Ballantine Books, 1979.
- 10. Parsons, Talcott, The Evolution of Societies. Englewood Cliffs, NJ: Prentice-Hall, 1977.
- 11. Parsons, Talcott, Social Systems and the Evolution of Action Theory. New York: The Free Press, 1977.
- 12. Parsons, Talcott Action Theory and the Human Condition. New York' The Free Press, 1978.
- 13. Polanyi, Karl,

The Great Transformation: The Political and Economic Origins of Our Time.

Reprint of 1944 edition. Boston: Beacon Press, 1957

- Ridgeway, James, Who Owns the Earth. New York: Macmillan, 1980.
- Schneider, Louis, and Charles Bonjean, ed., The Idea of Culture in the Social Sciences. Cambridge: Cambridge University Press, 1973.
- Schumpeter, Joseph A., Capitalism, Socialism and Democracy. Reprint of 1942 edition. London: Allen and Unwin, 1977.
- Shils, Edward, Tradition. Chicago, IL : University of Chicago Press, 1981.
- 18. Weber, Max, The Sociology of Religion

Translated from German by Ephraim Fischoff. Boston, MA: Beacon Press, 1964.

19. Weber, Max,

Economy and Society: An Outline of Interpretive sociology. Edited by Guenther Roth and Claus Wittich. Berkeley, CA: University of California Press, 1979.

3.3. CONNECTING CULTURES AND THE ENVIRONMENT : CREATING AN ECOLOGICAL CONSCIOUSNESS

A Paper Presented at the UNESCO International Conference on Culture and the Environment Bogor, Indonesia, May 21 – 24 1992

by : Roy Williams University of Sussex UK

Aspects of the Culture – Environment Relationship

One of the more significant realisations to arise out of my work on the European project was a gradual awareness of the connection between culture and the environment – both constructions existing in an historical dialectic interrelationship. For many environmentalists, it is the sphere of eco-development and its segments of economic activity and political decision-making which demand attention if our ecological well-being is to be assured. And this is the context in which conflicts and tensions over issues and policies arise and rage. I don't think that I need to elaborate on such matters here. But to focus exclusively on this contextualization is to omit, or gloss over, an equally pertinent and powerful dimension, one which contributes more subtley and more deeply to the creation of a state of ecological consciousness – that of culture, which Tylor (1871) defined as :

"that complex whole which includes knowledge, beliefs, art, morals, law, customs and any other capabilities and habits acquired by man as a member of society".

۲

To this comprehensive form of definition I would want to add another dimension, that of symbolic interpretation and expression, since, as Freud has shown, our thoughts, or conceptual structures, about the world in which we live are redolent with symbolic images and meaning schemes, expressive of collective values, but often implicit and unanalysed.

Thus we experience our environment through two systemic milieu; as it were – the system of direct experience and interaction governed by the political, economic and social ordering of what is the immediate, everyday milieu; and the system of symbolic interpretation and representation of the world, widened and enhanced by the historical experience, the weight of customs and tradition, the enlightenment of the arts and travel, transformed by innovation and popularised by technology and made meaningful through consciousness. In 'the shaping of our ecological consciousness, the interdependence of the relationship between the two systems is crucial if we are to understand how that consciousness is created and the power it exerts over human perceptions of and behaviour towards the non-human world.

Martin Weiner (1985) in his study of 'English Culture and the Decline of the Industrial Spirit 1850 – 1980' provides a particular insight into what might be seen as formative influence on the construction of English ecological consciousness. Weiner writes of two competing 'metaphors' the Northern and the Southern – that informed the conscious perception of what he termed the 'English way of life'. Both metaphors assumed that ''Britain is best', but the Southern metaphor won and established the view in the English consciousness that the uniqueness of the English cultural inheritance rested upon what the English *were* rather than upon what they *did*.

Embedded in this notion of being, was an elevated sense of the heritage and elitist traditions and institutions of the nation, of the superiority of the 'old' against that of the new or modern. The shift to urbanism that took place during the nineteenth century paradoxically evoked a reverence for an reevaluation of the rural and the re-discovery of roots in the countryside, which for some writers meant a return to the smaller-scale, more beautiful. and more humane life of the fourteenth century. This passion for the past was taken up by writers and artists and contributed to the idealization of the countryside so much so that England was conceived of as a garden. occupied by lords and squires in their country hosues and peasants in their thatched conttages. Raymond Williams (1973) pointed to the 'cultural importance of rural ideas' underlying the postive role of the countryside in the psychic economy of the middle and upper classes. "Country writing" came to form a distinct literary genre and with the growth of literacy and urban populations, its widespread influence was assured in the later years of the century, creating what amounted to a 'deep vein of rural nostalgia' and a form of symbolism that is easily discerned today in popular British culture.

The myth of an England, essentially rural and unchanging, undoubtedly informs that element of our national culture which most closely interfaces with the protection and conservation of our landscape. The Southern metaphor helped shape not only our consciousness as to what the landscape should look like and the place of people within it, but also our behaviour and value positions towards it. This combination of imagery, behaviour and values, in turn, became ingredients in the make-up of our national, cultural identity. The English character was set long ago by 'the yeoman farmer', the common ancestor, and though the growth to industrialization has marred the essential values of this character, it has not effaced it. The historical interchange between culture, land, landscape determined the essence of Englishness — the forms of its behaviour and the ethics of its way of living.

Though each culture is distinct and unique, many share similarities alongside their differences. The coming together of human cultures and our better understanding of their diversity of relationships with their environments is one means by which we can begin to understand the formation of ecological consciousness.

The example of the cultural construction of the 'English way of life' with its informing metaphors and mytaphors and mythologies that helped create a particular meaningful consciousness underlines an important aspect of the culture-environment interrelationships and the processes by which this becomes reified in both collective and individual identities, especially in the process of nation building.

National identity comprises both a cultural and political identity and resides in both. The cultural dimension of our national identity is one of the windows through which we view our world. It possesses its particular forms of expression, ceremonies and symbols, accepted by a community over the growth of its historical culture. A contributory actor in the shaping of the historical culture is the territory, the land, the countryside, the landscape of mountains and forests, seas, lakes and rivers, plains and valleys and the flora and fauna that live upon it. The transformation of land and countryside from an economic and biological resource base to an emotive symbol of the cultural homeland together with a sense of belonging to and allegiance was part of the challenge to the intelligenstia charged with the creation of the nation-state. The sentiments, aspirations, ideologies and symbols they manipulated in the process of construction were related, in Anthony Smith's view ('National Identity', Penguin 1991), to three main referents: territory, history and community. To these ends they employed two main strategies: the use of landscape or poetic spaces and the use of history or golden ages – both used to good effect as we have seen in making the English way of life.

My intention in the first section of this paper was to outline the connection between culture and environment within two frames of thinking. The first attempted to show that culture and environment feed off and nurture each other and that in this process different structures and actors in a society contribute to and sustain this dynamic interrelationship. This is particularly important in the creation of cultural identity formulated within communities initially, but utilized powerfully in the building of nations. If I may refer back to my introductory remarks on the forging of an integrated Europe and with it a European identity arising out of its sense of history and culture. the environment will necessarily become an actor in the shaping of that identity and the values that this sense of identity engenders will in turn determine behaviour and action towards the environment. The importance of the culture-environment relationship is well underscored by Paul Harrison who, in his most recent book 'The Third Revolution' (1992) sees the destruction of culture proceeding hand in hand with the destruction of nature. This point is perhaps further reinforced by the remark of Jean Monnet, the founding father of the European Economic Community, who, shortly before his death, said that if he were beginning again he would wish the EC to be founded not on economics but on culture.

In deciding the title for this paper, I purposely used the verbs in the present continuous tense – 'connecting' and 'shaping'. This was partly due to the view of culture and environment existing in an historical, dialectical relationship but also to the notion of a culture possessing its own ecology in the sense of its diversity being shaped and governed by several influences – geo-physical, political, economic, social, religious and so on. But, perhaps, impinging on the formation of a cultural ecology as much as anything else, is the process of historical change, and I would like to bring in at this stage the concept of 'ecological revolutions' as advanced by Carolyn Merchant in her important book "Ecological Revolutions: Nature, Gender and Science in New England". (1989).

Carolyn Merchant explores the ecological transformations that took place in New England as European settlers took control of the land. The change from a 'colonial' world view to a 'capitalist' world view with their respective modes of production, reproduction and forms of consciousness is analysed from the perspectives and principles of environmental history. Merchant reveals the dense network of links between the human realm of economic regimes, social structure and gender relations as they are conditioned by a dominant world view, and the ecological realm of plant and animal life. The integration of the Indians with their natural world was shattered by the Europeans who engaged in exhaustive methods of hunting, trapping and logging for the market and in widespread subsistence agriculture. The consequence of these events was to bring about ecological revolutions - a colonial one in the period 1600 to 1780 and a capitalist one in the period 1780-1860. Each revolution or transformation changed the relationship between culture and the environment within which it existed. The Native American culture had created and sustained harmony between the people and their land for over 2500 years which was to be radically transformed in less than 250 years by the implanting of two successive different cultures. These, in their turn, were to give rise to forms of ecological consciousness, growng out of the changing modes of production and reproduction that the new revolutions implemented.

The perspective offered by environmental history is crucial to understanding the ways in which our ecological consciousness is shaped from the dialetical interaction between culture and the environment. Environmental history possesses the capacity to synthesise the disparate dimensions, forces and scenarios of experience that actively interweave within a society over time. It further offers a means to interpret the meaning schemes or ways of understanding which condition the values, beliefs and behaviours of a community and to anlyse their collective contribution to the cultural consciousness of a particular community. In the construction of its own specific world view, environmental history is not dissimilar from the natural sciences in asking key questions about the relationship between the human and the natural worlds. Such questions are :

What concepts describe the world ? What is the process by which change occurs ? How does a society know the natural world ?

and predicate that a partial or limited set of perspectives and understandings such as received *only* from the natural sciences, or the social sciences, or the

view ('National Identity', Penguin 1991), to three main referents: territory, history and community. To these ends they employed two main strategies: the use of landscape or poetic spaces and the use of history or golden ages – both used to good effect as we have seen in making the English way of life.

My intention in the first section of this paper was to outline the connection between culture and environment within two frames of thinking. The first attempted to show that culture and environment feed off and nurture each other and that in this process different structures and actors in a society contribute to and sustain this dynamic interrelationship. This is particularly important in the creation of cultural identity formulated within communities initially, but utilized powerfully in the building of nations. If I may refer back to my introductory remarks on the forging of an integrated Europe and with it a European identity arising out of its sense of history and culture. the environment will necessarily become an actor in the shaping of that identity and the values that this sense of identity engenders will in turn determine behaviour and action towards the environment. The importance of the culture-environment relationship is well underscored by Paul Harrison who, in his most recent book 'The Third Revolution' (1992) sees the destruction of culture proceeding hand in hand with the destruction of nature. This point is perhaps further reinforced by the remark of Jean Monnet, the founding father of the European Economic Community, who, shortly before his death, said that if he were beginning again he would wish the EC to be founded not on economics but on culture.

In deciding the title for this paper, I purposely used the verbs in the present continuous tense – 'connecting' and 'shaping'. This was partly due to the view of culture and environment existing in an historical, dialectical relationship but also to the notion of a culture possessing its own ecology in the sense of its diversity being shaped and governed by several influences – geo-physical, political, economic, social, religious and so on. But, perhaps, impinging on the formation of a cultural.ecology as much as anything else, is the process of historical change, and I would like to bring in at this stage the concept of 'ecological revolutions' as advanced by Carolyn Merchant in her important book "Ecological Revolutions: Nature, Gender and Science in New England". (1989).

Carolyn Merchant explores the ecological transformations that took place in New England as European settlers took control of the land. The

change from a 'colonial' world view to a 'capitalist' world view with their respective modes of production, reproduction and forms of consciousness is analysed from the perspectives and principles of environmental history. Merchant reveals the dense network of links between the human realm of economic regimes, social structure and gender relations as they are conditioned by a dominant world view, and the ecological realm of plant and animal life. The integration of the Indians with their natural world was shattered by the Europeans who engaged in exhaustive methods of hunting, trapping and logging for the market and in widespread subsistence agriculture. The consequence of these events was to bring about ecological revolutions - a colonial one in the period 1600 to 1780 and a capitalist one in the period 1780-1860. Each revolution or transformation changed the relationship between culture and the environment within which it existed. The Native American culture had created and sustained harmony between the people and their land for over 2500 years which was to be radically transformed in less than 250 years by the implanting of two successive different cultures. These, in their turn, were to give rise to forms of ecological consciousness, growng out of the changing modes of production and reproduction that the new revolutions implemented.

The perspective offered by environmental history is crucial to understanding the ways in which our ecological consciousness is shaped from the dialetical interaction between culture and the environment. Environmental history possesses the capacity to synthesise the disparate dimensions, forces and scenarios of experience that actively interweave within a society over time. It further offers a means to interpret the meaning schemes or ways of understanding which condition the values, beliefs and behaviours of a community and to anlyse their collective contribution to the cultural consciousness of a particular community. In the construction of its own specific world view, environmental history is not dissimilar from the natural sciences in asking key questions about the relationship between the human and the natural worlds. Such questions are :

What concepts describe the world ? What is the process by which change occurs ? How does a society know the natural world ?

and predicate that a partial or limited set of perspectives and understandings such as received *only* from the natural sciences, or the social sciences, or the

humanities, will be insufficient. If culture is as Tylor defined it and if the relationship between culture and the environment is as I have outlined, then the introduction of an ecological approach to the history of a cultre reasserts the idea of nature as an historical actor in the process and redefines its value and power in the formation of our cultural consciousness.

Creating an Ecological Consciousness

Clifford Geertz in his "Interpretation of Cultures" (1975) believed with Weber that "man is an animal suspended in webs of significance that he himself has spun" and took culture to be those webs. The analysis of culture should, in Geertz's view be an experimental science in search of law, but an interpretative one in search of meaning. It is a form of knowledge defined by the intellectual effort that it is and he illustrates this process with the application of a notion from the philosopher Gilbert Ryle – *thick description*. Ryle's concept of 'thick description' is of value in clarifying the territory pertinent to the making of ecological consciousness. Ryle defined 'thick description' as

"a multiplicity of complex, conceptual structures, many of them superimposed up on or knotted into one another, which are at once strange, irregular and inexplicit – and which we must contrive somehow first to grasp and then to render "

This concept is the prerequisite, or starting point, for the creation of ecological consciousness.

The remainder of this paper is an attempt to substantiate this position and, at the same time, to illustrate its application by reference to different examples of the interplay between culture and the environment and how they inform each other as a consequence of their interaction. This, in effect, will be to bed the theoretical assumptions of the first part of this paper within a more concrete framework.

In his book 'The Roots of Modern Environmentalism' (1984) David Pepper sees man as responding to his environment as he *perceives* it: the perceived environment will usually contain some but not all of the relevant parts of the real environment, together with elements imagined by man and not present in the real environment. The real environment is thus seen, in part, through a 'culture filter', made up of attitudes, values, beliefs, philosophies and histories. Perceptions of the environment differ in different cultures and at different times.

I have already referred to the nineteenth centrury cultural conceptualization of England and how the perception of the countryside became a social and a cultural force. The polarity of cultural visions about 'Englishness' identified with pastoralism (the green and pleasant land) and "industrialism' (the dark Satanic mills) still remains in the modern consciousness as a legacy of Blake's power of expression. The vision of the machine invading and blighting the countryside is an image to be found not only in literature and art, but in many forms of popular mass culture – children's books, advertising, songs and illustrations. The accumulation of such cultural capital over time becomes part of the heritage of the nation and also part of its consciousness. It helped inform our values and our behaviour towards the countryside and towards nature, filtering out Dicken's Coketown and replacing it with Kipling's Sussex or Hardy's Wessex, powerful myths in the making of patriotic ruralism.

English pastoralism was a particular expression of ecological consciousness – elsewhere in Europe other forms emerged. These were articulated through different cultural forms of expression and conditioned by place and time as well as by belief and mythology. Over the centuries, from the shifting cultural mosaic of Europe there grew new paradigms to inform and shape consciousness, and each shift of paradigm effected an ecological revolution which, in its turn, altered human consciousness. Great movements such as the Reformation, the Renaissance, the Enlightenment, Romanticism, Colonialism and events like the voyages of discovery, the French and American Revolutions, the Industrial Revolution caused major paradigmatic shifts; as did individuals, Copernicus, Lavoisier, Newton, Darwin, Marx, Freud and Einstein. Lesser mortals also made their contributions in cultural domains such as landscape painting, to take one example.

The Renaissance response to nature and the natural world can be assessed from the evidence that exists for it – through painting, literature, the design of yardens and the siting of houses. In painting, landscape had been long subordinate to figures, but from the middle of the fourteenth century there was a growing tendency to give a representation of a real tract of countryside rather than to create a decorative background to a celebration of man's relationship to God.

52

Once landscape became unified, it could be used to express a personal feeling or a particular mood. Through the works of Mantegana, Bellini, Giorgione, Michaelangelo and Leonardo da Vinci, landscape became a true subject of painting. In 1537, Aretino wrote to Michaelangelo: "In your hands lies hidden the idea of a new nature".

This new nature was as far removed from an earlier perspective from which Dante could proclaim that 'mountains were fit only be the gates of hell' as was that of the later distaste of Dr Johnson for 'the hopeless sterility of the Scottish hills' in comparison with the Romanticist's enthusiasm for wild and mountain scenery, precipitous crags, roaring waterfalls and rushing torrents.

It required a profound change in attitude to produce the rise in landscape painting from the Renaissance onwards. This was followed by other padadigm shifts that informed ecological consciousness - the Englightenment, Romanticism. Industrialisation. Even within these broad structures of thought there occurred lesser shifts - the objective idealisation of nature and with the subjective. Romantic identification. This was a far cry removed from the natural world as it existed in the Medieval mind, wherein mountains and forests were associated with thieves and wild animals and a superstitious dread of the unknown. The emotional reverence which the Medieval world has reserved for God was now extended to the vastness of space and to the great oceans, mountains, forests and deserts of the world. Nature was recreated through culture which it had itself helped shape; it became the sublime informer, teacher, regenerative power; wilderness became no longer a place to be feared, but an inspiration, a seat of contemplation, a place for enlightenment. In this respect it moved closer to the representation and interpretation of it by Far Eastern poets and painters. Taoism, Buddhism and Confusianism held to a reverence for life and saw man at one with the inner life and harmony of nature. Nature itself was awesome and divine, of its own creation, and did not exist in competition with a divine creator. The desert landscape in which Judaism, Christianity and Islam was born and their nomadic way of life defined man as an animal with a soul, subject to the authority of God; an unique organism separated from mundane nature, over which he was given domination. As these religious forces shaped his consciousness throughout the great human revolutions - agricultural, industrial and technological man changed from a creature within a landscape to a shaper of landscapes, altering his surroundings to satisfy his needs, requirements and desires.

53

But the perception of the world of nature of the great writers, artists, thinkers and philosophers were not necessarily the same as those of the mass of ordinary people. Their cultural-ecological consciousness would be fed by different experiences of reality and filtered through different perceptions. As an explanation of this separation of consciousness within a culture, the history of a particular 'ecological' experience and the common perception of it may be of value to the general premise of this paper.

It would appear that at a time of crisis or disaster, or severe change and dislocation, our cultural percpetions take over from rational understanding and explanation. The history of the deadly epidemics in the global spread of cholera in the nineteenth centruy provides an illustration of this. Up to 1800 outbereaks of cholera were confined to the Indian sub-continent. Between 1800 – 1830 it spread to areas in the Far and Near East and North Africa. Later it reached Russia, Germany, France and Britain before eventually crossing the Atlantic to the Americas. The state of medicine during this period was deficient in both explaining the cause of the disease and its spread. What took its place was a set of cultural explanations derived from irrational beliefs, myths and histories. Cholera became portrayed as the wrath of God, an evil that came out of the East, the revenge of the savage against civilization and colonial exploitation, a new Black Death emanating from a Brown continent. The plitical masters dithered about what to do; they called for prayers and a national day of fasting. Doctors, too, were similarly helpless in the face of the epidemic. They advised sprinkling vinegar on the floorboards of houses and the wearing of heavy woollen garments. The Victorian experience of cholera found its way into the literary culture of the period. Dicken's evocation of a foggy, fetid London, dark, dank and disease-ridden, was symbolic of the nightmare of havoc that cholera had wreaked. Even when the cause had been found and when, by 1880, Europe's cities had been cleaned up, the disease still haunted the cultural imagination. In Thomas Mann's novel 'Death in Venice', the story suggests that cholera is a punishment for illicit sexual desire.

The history of this deadly disease in Europe reveals both the reality and the perceived reality of the disaster and the cultural face of the latter. As it rampaged through France and England, the poor accused the rich of poisoning their drinking wells, while the rich reproved the poor — the great unwashed = -- for their filthy habits and filthy morals. The Church blamed it all on sin. In Russia there were riots in which doctors were stoned to death. It was always someone else who was to blame, the cholera victime wa snot only sick, he was evil; the disease was a punishment.

The European cultural reaction to cholera reveals in its forms of explanation and absorption of the experience, something of the means by which ecological consciousness is constructed. This process of creating a filter for explaining and dealing with natural phenomena or establishing the nature of a relationship with the non-human world, its powers, its mysteries, its fearful events, is culturally conditioned. The British obsession with the weather and attitudes towards it, well illustrates this factor.

One writer recently observed that the British may have lost G od but they still have the weather and this new found deity is a vengeful one. This inhuman power is both vital and alien to life at one and the same time. It can work miracles like tornadoes, which can drive blades of grass into stones. The air surrounding us suddenly becomes dangerous; water is stronger than rock. Such forces must be placated.

These perceptions of the weather are revealed in popular, everyday culture. The songs of children emplay a curious magic in attempts toward of less desirable aspects, as do adults. A man builds an ark in a London garden in anticipation of the deluge that is to come. A streeet preacher prophesises the return of Biblical flood. He speaks with passion and certainty.

Weather is strange, frightening, unpredictable, sent down from the sky and the mountains. An ancient and informing mythology showed a proper regard for its power. The word 'ZEUS' derived from the Sanskrit roots for 'Sky Father' who punished mortals with its thunderbolts. The true home of the weather is to be found in those high places where the hermts have searched for and found God.

The medieval conception of mounteins and forests as mysterious and fearful places is till part of the cultural legacy that has come down through the centrueis. These are the places where 'the wild things are' and even today exist as a powerful imagery in children's literature as one successful writer and illustrator of children's book can testify to.

In the exploration and comparative examination of the many and varied cultures that exist in our world, we are able to uncover countless examples of the interplay between cultural systems and ecological systems and how this interplay has created cosmologies that define the nature, extent and power of the human-environment relationship. In the final part of this paper I want to touch upon some elements from these separate cosmologies as means to demonstrate their influence in the making of our ecological consciousness.

From anthropolgical studies of the North American Indians we have learned something of their ecological consciousness as it derived from the nature of their close and interdependent relationship with their environments. We learn, for example, that their sense of identity was intimately related to their belonging to a particular landscape, that in their systems of belief, human beings were part of the environment in which they lived, connected with the trees, rivers, rocks and hills and with no sense of domination over them. The notion of wilderness was alien to the culture of the Indian but not to the European settlers who brought a mythology which reconstructed the landscape and the people within it into a state and being of primitive savagery. They also brought a culture that rationalised (reified this transformation), the economic culture of trading with its technology and artefacts, the metal forms of the latter attaining symbolic meaning for the natives. Land was to be possessed and competed for in this new culture and this confronted the Indian perspective of the land as an indestructible resource, more valuable than money and therefore not for sale.

The destruction of the American Indian, through dispossessing him of his land, through the slaughtering of his means of existing, through forced geographical dislocation, through disease and deliberate acts of genocide, has resulted in the modern American Indian struggling to realise his own identity. The history of this cultural transformation has separated the Indian from his beautiful landscape, distorted his ecological consciousness, turned him into a cultural and ecological refugee. Indian identities are now embedded in a past that is recounted in story telling from generation to generation, a past that lives only in the culture.

For the modern Indian it is as Kierkegaard said: we must look fowards but understand backwards.

The confrontation between the animism of the North American Indian and the Protestant-Catholic colonisation of the European settlers and traders with their different ecologies is an example of the global clash of cultures. But even with nations, cities even, we see distinctive and conflicting paradigms and perspectives which shape the environmental values and behaviour of human beings. In his exacellent and comprehensive study of Hamburg during the European cholera epidemic of the late nineteenth century, Richard Evans (1987) provides illuminating insights into the play of political, social, economic, medical forces that were significant actors in the death toll of the citizens of Hamburg during a six-week period; a fatality total of 10,000 people which did not occur in any of the other great cities where disease had struck.

The catastrophe of Hamburg points up cultural divides and reveals attitudes and values that impinged not only on social, political and economic relationships but also on the ecology of the city as well. Evans' analysis reinforces Carolyn Merchant's view of history as a tool for analysis and interpretation of the conditioning of our ecological consciousness. His general approach was to approach the past from below seeing the history of the environment as the history of people's changing perceptions of it. During the period 1850 - 80 the growth of concern about the environment was part of a general growth in the consciousness of Hamburg's middle-classes. The values which moulded their lives included not only hard work and thrift, but also orderliness and self-discipline. Dirt was disorder and the bourgeois perception of dirt was in part a symbolic identification of an opposite against which they could measure the extent of their own social achievement. The common people were perceived as smelly, dirty and unhygenic; a perception reinforced by the rapidly-spreading use of perfumes and deodorants to which it gave rise. The middle class in addition to distancing themselves from the working class also began to distance themselves from their own bodily functions as well: modesty, shame and ultimately prudery, became the bourgeois equivalents of the aristocratic code of honour.

These perceptions were not merely conditioning influences on the physical sense of smell. They embodied a more general fear of the mob. It was not lack of cleanliness that would lead to revolution; rather dirtiness and its stench was the outward expression of an inner rejection of bourgeois norms and so of bourgeois society and its culture. The most general perception of environmental pollution, whether it was of evil-smelling rivers or dung-strewn streets, could be a metaphorical translation of the fear of social discorder as well as embodying an attempt to banish it from the public space inhabited by the bourgeoisie. Environmental pollution was real enough in late nineteenth century Hamburg; but for Hamburg's dominant classes it was not so much a consequence of the capitalist expansion which they had done so much to create, as the symbolic expression of the threat from below which was bringing that expansion and its culture into question.

It has been the intention of this paper to show that culture arises out of social actions, elements of which involve the interrelationship of human beings with the natural world and the world which they themselves create. The exploration and analysis of culture is an interpretative one in search of meanings, meanings conditioned by the array of forces which operate upon and shape the nature of the relationship. Different environments help create different forms of culture and in turn these cultures impact back on the environments through the attitudes, values and behaviours they engender in the people.

The Amazonian Indians believe that everything they do and say throughout their lives should be in harmony with nature. This is the bedrock of their culture. Unfortunately this is not the foundation of many other cultures, especially those that have flowed from the influence of Europe. But perceptions are changing and history is at long last, seemingly on the side of the environmentalist.

References

- Bramwell, A., *Ecology in the 20th Century A History*, Yale University Press 1989.
- Merchant, C., *Ecological Revolutions: Nature, Gender and Science in New England*, University of North Carolina Press, Chapel Hill and London 1989.
- Pepper, D., The Roots of Modern Environmentalism, Croom Helm 1984.
- Geertz, C., The Interpretation of Cultures, Hutchinson, London 1975.
- Weiner, M.J., *English Culture and the Decline of the Industrial Spirit*, Pelican 1985.
- Bazarov, K., Landscape Painting, Octopus Books 1981.
- Rude, G., Europe in the 18th Century: Aristrocracy and the Bourgeois Challenge, Cardinal Books 1974.
- Smith, A.D., National Identity, Penguin 1991.
- Rader, J., Man on Earth, Penguin 1988.
- Harrison, P., The Third Revolution: Environment, Population and a Sustainable World, Tauris Ltd 1992.
- Schafer, D.P., 'The Character of Canadian Culture' (monograph), World Cutlure Project 1990.
- Williams, Raymond, The Country and the City, Paladin 1975.

Evans, Richard, Death in Hamburg, Penguin 1990.

3.4. CULTURAL HERITAGE AND ENVIRONMENT

BY : Nazimuddin Ahmed, Bangladesh

The evidence of man's existence in the world can be traced back to the geological Era of Pleistocene, corresponding to about 600,000 years back. Then followed 3 major glaciations. Man has so far, survived 3 interglacial periods when the enormous bulk of glaciers slowly melted and the weather became warmer. Hundreds of species of physically stronger than man perished during the Ice Age while man survived because of his greater adaptibility and ability to exercise some control over his changing environment. Prehistoric man survived the rigours of climate and environment by constantly improving his equipment and even adjusting his environment to his need. Man's equipment however, differ greatly from other animals. Animals often carry their whole equipment about them as part of their body like snail. tortoise, tiger, bear, sheep etc., but man uses his fabricated tools, extracorporeal fittings which can be discarded at will like pick-axe, shovel, spade, clothes, houses etc. The detachable human equipment has the advantage of being more convenient and adaptable than other animal equipment. A particular species of animals fit in, in particular environment like the mountain goat and bear for their thick fur-coats in snow-clad hills but man can adjust his clothings with the changing climate and environment. By devicing suitable equipment a human being can fit himself to live under almost any condition. He can endure arctic cold and tropical heat equally well.

In response to peculiar environment each society may evolve distinctive devices but these do not remain confined to the region where they were evolved, for societies may migrate to regions which evolved other inventions and discoveries. The migrant society does not forget its traditional equipment while adopting to its new home; more often the immigrant and the native traditions blend together. The new inventions do tend to diffuse beyond the bounderies of locality where it originates despite all obstacles of space and language. In fact, the richness of our cultural tradition is largly due to diffusion and blending of ideas created by many distinct groups of societies.

A child does not antomatically inherit the fruit of long experience and knowledge of the members of the society in which he is born, "the experience which the generations of his forefathers had acquired and learned by trials and errors, impressions noticed, remembered, compared and observed". A modern child today is the oritically heir to the accumulated experiences of all his forerunners of all ages. However, practically it is different, for mankind does not form one society today but is divided into many distinct societies, not unlike the past. Under varying conditions of climate and environment, various societies in the past developed different traditions of tools and equipment making. Archaeologists classify objects of their study not only by functions into knives, axes, huts, tombs and so on, but also into different types of those objects. The totality of recognized types current at the same time in a given area is termed as a 'culture' (G. Childe what Happend in Hist. P. 19). Whereas 'civilization' implies a higher level of political organization, a complex social and economic order of a literate society and a stage of human development evolved from village to town and from town to city.

Social and cultural anthropologists, archaeologists and historians study the past history and various aspects of man in time and space from the available written records or from his material remains. But man's material and cultural progress through ages can not be studied in isolation, divorced from the environment in which various social groups lived in different parts of the globe in different ages. In order to obtain a complete picture of a particular social group it is essential to study the countryside in which it lived, the food and drink it consumed, the dress it wore, the type of its habitat, the climate it enjoyed, the natural resources it exploited and in short, the particular type of natural setting in which it grew up, for man's destiny and cultural attainment chiefly depended on his environment.

The primitive communities in the past were especially more dependant on geographical environment, for this vital factor determined the settlement pattern and distribution of population. It also hastend or delayed the diffusion of new ideas and new techniques from one community to another. In fact, the environment largely dictated and still largely shapes the life style of man. In the arctic zone the Eskimos live in domical Igloo houses of ice-cubes and feed on Seal and walrus fats. They are accustomed to this type of lifestyle, food and habitat, whereas the denizens of arid or tropical lands will prefer a different type of habitat, food and life-style. In general, the people eking out their hard living in an inhospitable environment are prone to be more hardy and often migratory in nature than the people living in an agreeable environment. Again, any change of geography and climate of a

61

particular area may correspondingly affect the distribution pattern of human settlement.

The dreaded Sahara desert is now without any human habitation except on its peripheral oasis but there are evidences that in ancient time it was inhabited by men when its climate was more friendly and there were source of water supply to sustain its population. Its desiccation began earlier, reached its final phase in 34d/45h century A.D. Desiccation of the area is largely due to indiscriminate deforestation by man.

Likewise the present Gobi and Taklamakan desert on the ancient Silk-Route were dotted with flourishing trading settlements in 7-10 th century when these were fed by numerous mountain springs, now dry. These settlements have now been completely engulfed by encroaching desert sand as the source of water supply from the hill springs dried up. The rigours of cold climate and stony waste in Baluchistan always retarded permanent settlement and urban centres in the prehistoric period. These environmental conditions still largely remain unchanged. At present a large part of the population of the population of Quetta, its capital city, migrates to Sibi, a warmer area at the lower height in order to escape the hardship of the environment and hostile climate. As such, a large part of the dwellings are of temporary nature. In short, the difference of landscape, geography, climate and environment create different types of living conditions and cultural traits of men inhabiting these areas.

All great civilizations flourished on the bank of some large rivers like the Indus, the Yellow river, the Tigris—Euphrates and the Nile for the obvious advantage of availability of life-giving water for drinking, irrigation and communication. The abandonment or destruction of the ancient civilizations were largely due to the shift in the hydrographic system. Early human settlements needed constant supply of water and a favounrable climate. Where these conditions were absent, man could at best live temporarily as a hunter following his game or as a herdsman following the seasonal pasture, but he could not settle permanently. The land with harsh, too thickly wooded or too arid or too uncertain season, seldom attracted habitation. So while the early civilizations were growing chiefly on the great river valleys, a different way of living — the nomadic life — a life in constant movement from winter pasture to summer pasture was also going on simultaneously.

The Indus valley civilization unquestionably ranks as one of the geratest civilizations of the prehistoric world with the Egyption, Mesopotamian and Chinese. The focus of the civilization was on the two principal city sites in Pakistan, locally known as Mohenjodaro in Sind and Harappa in the Punjab. Mohenjodaro, the better preserved city in central Sind flourished on the bank of the Indus river about 5000 years back. The area is now arid but formerly it was densely forested and had a heavier rainfall in prehistoric time as testified by the abundant use of burnt bricks in building houses, a network of covered drains, baths and the portrayal of a large number of aquatic animals on the seals. But the indiscriminate deforestation in the area by man and possibly due to the damming of the river by tectonic upheaval near Sehwan, the area around Mohenjodaro, eventually became barren. It also resulted in slow submersion of the city. This unnatural flooding of the whole of the lower Indus basin by tectonic uplift necessitated building of earthen embankment around the city and frequent rebuilding of dwellings on higher level in order to ward off the advancing inundation of the Indus. The ancient city is now buried under the Indus silt of about 7 metres deep while the subsoil water has risen dramatically in the area. Both climate and environment in the area have changed astonishingly in last 5 millennia and it has become arid.

Recently United Nations special agency has forecast a gloomy picture of the global change of climate within next few decades and its disastrous effect on the countries of South East Asia. It warns that a large part of the population of the region will be forced to migrate from their present habitat to other places as a result of the 'Greenhouse effect' or the effect of increasing heat generation from certain gases like Carbon Dioxide, Mithen etc. created by constant pollution of atmosphere by industrial waste, smoke etc., in the cities. This will result in temperature rise from 3 to 4 degrees celsius and corresponding rise in the level of the sea water to about one metre. The U.N. report predicts that in Thailand and Malaysia about 5000sq. km. area and in the strings of islands of the Indonesian ARCHIPELAGO about 10,000 sq. km. areas are likely to be either totally submerged or laid waste.

Its possible effect on the agriculture, fisheries, rubber plantations, shrimp cultivation and rice production in the countries of Far East in next 3 decades, the UN report says, would be dismal. Perticularly west Zohor in Malaysia and the densely populated littoral of north Java would be hit hard. In Indonesia alone about one million ton of rice products will fall. Corresponding with these unhappy prospects arising from the possible climatic, geographic and environmental change, a larga number of noble cultural legacies of man in this region, is also likely to disappear for ever. The prospect is certainly not reassuring.

In the age of our rapidly changing environment and living conditions in society it is essential to preserve a fitting setting in which to love, where we remain in contact with nature and the legaeies of our civilization bequeathed to us by past generations. A nation is often known and judged by the standard of respect and effective measures it takes to preserve its cultural heritage and the value it attaches to the cultural relics to which it is an heir. To this end, every country should associate cultural and natural heritage with active function in community life and to integrate into the overall policy, the values of the past and the beauty of nature.

The preservation of historical monuments which constitute a major part in the cultural legacies of a country however, can not be achieved in isolation or in total disregard to the immediate environment in which these were built. It is therefore, equally important to protect the environment of monuments from unplanned development in the area. The environment can be advisedly affected by various factors such as : atmospheric pollution, industrial developments, unplanned building activities or heavy vehicular traffic. The original landscape of an agrarian belt around a monument may drift towards urban expansion, often with stereotype modern highrise buildings, as against the traditional building style. In many historic towns the erection of such multistoried blocks of buildings is steadily spoiling the harmony of the setting and destroying the relationship of man to his environment.

On the occasion of celeberating the first commemoration of the world Day for Cultural Development, May 21, 1992 this International Symposium on Culture and Environment proposes to encourage development of Cultural and Environmental dimensions on the basis of national as well as regional cooperation. UNESCO's two recommendations pertaining to this subject, as adopted by the General Conference in Paris on 11 December 1962 under the title "Recommendation Concerning the Safeguarding of Beauty and Character of Landscapes and Sites" and the other under the title "Recommendation Concerning the Protection at National level of the Cultural and National Heritage" as adopted by the General Conference at Paris on 16 November 1972, are worth noticing here in brief. These Conventions observed

64

that since men have often subjected the beauty and character of landscape and sites, forming part of their natural environment, to damage and thereby impoverising the cultural, aesthetic and even vital heritage of the whole region everywhere in the world, every nation should not only endeavour to ensure the preservation of the original aspects of natural, rural and urban landscapes and sites, but also restore them. In order to counter the threat of modern life to landscape and sites "preventive" and "protective" measures should be taken to regulate activities liable to impair them. It is also necessary to incorporate special provisions in urban and regional development plans, scheduling by zones, creation and maintenance of natural reserves and national parks. In order to implement these, vigorous educational actions in schools and out of schools should be undertaken in order to inculcate pride and respect for their heritage. In particular, provision should be made to ensure the protection of certain urban landscape and sites which are threatened by modern expansion of building operations and land speculation. While doing so, certain traditional and picturesque forms may be ensured in harmony with the general environment which it is desired to safeguard. The recommendation also includes regulating indiscriminate installation of electric lines, advertizing and illuminating signs, deforestation, pollution of air and water, working mines and guarries and disposal of waste products etc. near the protected landscape and sites.

The other Convention emphasizes that the cultural and natural heritage represents a national wealth, the protection, conservation and presentation of which impose great responsibility on the country in which it is situated. While performing these responsibilities the measures taken to ensure their safeguard should not be dissociated from its environment. The Convention therefore, recommends that since the ultimate purpose of protecting, conserving and presenting the cultural and natural heritage is the development of man, the member states should direct their works in this field in such a way that the cultural and natural heritage may no longer be regarded as a check on national development but as a determining factor in such development. It further visualizes that the protection, conservation and attractive **presentation of the cultural** and **natural heritage should be considered** as one of the **essential aspects** of regional development plans and planning in general, at the national, regional or local levels. The harmony established between monuments and its surrounding is of the greatest importance and should not be disturbed or destroyed. The isolation of a monument by demolishing its surrounding should not be usually authorized, nor should the moving of a monument from its original site be planned unless under some exceptional exigency. An inventory and plan should be prepared by every country for protection, conservation, presentation and limited restoration of groups of buildings of historical and artistic interest. It should include peripheral protection belts, lay down the conditions for land use and specify the buildings to be preserved and the conditions for their preservation. This plan should be incorporated into the overall town and country planning policy for the area concerned.

In order to enforce these recommendations some suitable legislative provisions need to be made by every state. These legal provisions should be in conformity with the prevalent procedures of each country. Ideally no incongruous new building should be erected and no demolition, transformation, modification or reforestation carried out on any properly situated on or in the vicinity of a protected site if it is likely to affect its appearance, without authorization by the specialized Government agency.

IV. MAN, NATURE AND SACRED

4.1. MAN, NATURE, AND THE SACRED IN TIBETAN TRADITION

by : Karma Gelek Yuthok, Dharamsala, India

BACKGROUND

Humankind, nature, and the sacred according to Tibetan tradition are inseparable from one another both in terms of their definitions and interrelationships. Tibetan traditional heritage, which is known to be over 3,000 years old, can be distinguished as one of the foremost world traditions in which these three essential constituents of our cosmic existence have consistently co-existed, and withstood human chaos throughout the world history.

The secret of success in establishing and maintaining a unique harmony among humankind, nature and the sacred in Tibetan tradition lies, not in the human species and land of Tibet, but in the spiritual and moral traditions which the people of Tibet inherited over the last three millennia.

Historians divide the Tibetan civilization into two main periods: the pre-Buddhist era of Bon and the era of Buddhism. Bon and Buddhism are historically regarded as different spiritual traditions, but their concepts and moral principles in relation with humankind, nature and the sacred are astonishingly identical. This basic proximity between Bon and Buddhism has greatly contributed to the harmonious co-existence of humankind greatly contributed to the harmonious co-existence of humankind and nature in Tibet for centuries, inspite of a series of historical changes.

67

HUMANKIND : A TIBETAN PERCEPTION

Precious Species

According to Tibetan religious traditions, the human species is not only regarded as a higher form of life gifted with natural endowments, but is also distinguished as the most suitable life form for achieving spiritual liberation from the cyclic existence of life and death. Being endowed with special faculties of intellect and wisdom, it can discriminate good from bad and right from wrong; and having fallen to its lot to experience a mixed quality of life, it can feel and understand the suffering and happiness of other fellow beings.

Tibetan religious traditions describe the human life as an extraordinarily precious life which is extremely difficult to find. To explain the preciousness in this context, most of the traditional sources use the example of the wishfulfilling jewel. Just as a wish-fulfilling jewel is regarded precious not just because of its rareness, but because of its capability to fulfil great purposes, if properly made use of, in the same way, the human life is regarded precious not just because of its rareness, but because of its capability to accomplish great goals of life, if properly made use of.

Rare Species

The rareness of human life is best expressed in traditional Tibetan Buddhist sources with a beautiful but unimaginable example. The example goes like this. There is an old blind frog in the depth of a great ocean, and the frog pops out its head from the water surface once in a century hoping to be out of it. There is also a wooden plank, with a single bull's-eye-size hole at its centre, in the ocean floating and moved indefinitely by violent tides across the ocean surface.

The great coincidence of the blind frog's head striking into the hole of the floating plank while popping out its head suddenly after each century is clearly almost impossible and unthikable. However, the possibility of such a coincidence can not be categorically ruled out. The chance of ignorant beings finding a human life has been described as difficult and rare as the chance of the blind frog's head striking into the hole of the floating plank. There is an elaborate and meaningful interpretation of the example, but may become irrelevant here to present. The frog being old and blind, its lot to live in a limitless violent sea against its wish, and its desperate but seldom effort to escape from the sea are all significant and meaningful.

Although we now say that our planet is getting overpopulated with over five billion human beings, but when compared to the number of other living beings sharing the earth, it is negligibly small. The sources indicate that if the number of non-human living beings is compared to the number of particles in a pinch of sand held between two finger tips.

It is not difficult to realise the truth of this traditional illustration in reality. The number of a single species of fish in Indian Ocean alone, and the number of insects beneath a single acre of ground, separately, must be several times greater than the total number of humankind in the universe.

Purpose of Human Life

Tibetan religious and ethical traditions preach that the human beings, beings, while they have somehow found the precious human life, should take its best advantage and make it purposeful. While the traditional sources indicate three levels of purpose of the human life, the supreme and ultimate purpose of it has been pointed out to become a fully enlightened and goodhearted guide and guardian of all living beings by means of the path of self-perfection. In other words, it is the achievement of the supreme perfection of heart and thought by means of a dual path system of discriminative wisdom and altruism.

The two lower goals of human life as indicated in the works of traditional masters are to achieve liberation from the cycle of worldly life by elimination of passions and mental impurities, and to achieve higher life forms of humankind and god by forsaking unvirtuous thoughts and deeds and practising wholesome deeds. In fact, the entire religious and ethical tradition of Tibet is subsumed under or ends in seeking a meaningful purpose in the human life.

Misuse of Human Life

Inspite of the above facts, the worldly beings, as long as they remain imperfect and ignorant, it would not be surprising to often find major misuse of almost everything, including human life, that is originally regarded as good and purposeful. Among others it includes knowledge, power, principle, religion, system, natural resources, capability, and things.

For instance, production of nuclear weapons is a major misuse knowledge; invasion of smaller nations by bigger ones is a major misuse of power; regionalism is a major misuse of principle; preaching sectarianism is a major misuse of religion; legalization of social evils is a major misuse of system; deforestation is a major misuse of natural resources; biased writing is a major misuse of capability; and production of chemical weapons is a major misuse of things.

Therefore, seeking a lifelong happiness for one's own self, or causing harm and problem to other fellow beings are regarded as insufficient and improper use of the human life. In fact, all above mentioned misuses of the human life. Unlike other species and as well proved by history, humankind bears a high capability of accomplishing good deeds as well as of causing inconceivable suffering and destruction.

Moral Responsibility

To sum up Tibetan traditions perceive the humankind as a rare and precious higher form of life, which is not only capable of but bound by natural moral responsibility to act as a loving guide and guardian of all life forms.

If the guardian figure forgets its moral duty and starts acting as if everything else on and around this planet exists for its exclusive use and exploitation, then no one on earth or heaven can safe this world from total degeneration and destruction. There is no other way to set the world right except by setting the human attitudes and acts right.

NATURE: A COMMON HERITAGE OF ALL LIVING BEINGS

Concept of Nature

Nature according to traditional Tibetan concept consists of two main divisions: the physical habitat and the inhabitant beings. In religious terms it is called the Cyclic Existence (Skt. samsara) with the two divisions called the Physical Cyclic Existence of Habitate and the Inner Cyclic Existence of Inhabitants respectively. The former division includes all heavently bodies,
space, air, water, and land; and the latter division includes all kinds of living beings. The realm of living beings is further classified into five major species of gods, humankind, animals, hungry spirits, and hell-beings.

Common Home and Resource

The physical habitats together with their natural constituents, before being anything else, are regarded as common natural abodes of all living beings who are born and live on them. As to their origin, Tibetan religious traditions of Bon and Buddhism say that all physical aspects of nature have come into being by the force of the collective deed (Skt. karma) of all those living beings who share them as habitats or resources for some time.

Tibetans neither belive nor support the idea that the physical world is a property of humankind alone. Instead they advocate that it is a common property of all those who have natural access to it. Humankind has conquered the world, but there is no way it can acquire an exclusive moral right to misuse and destroy its resources without due respect and concern for other living beings with which it shares the world. The consequence of breaking natural moral laws is believed to be much graver than breaking the laws framed my man. History is a strong evidence for this.

Tibetan Perception of Environment Problem

The Tibetan ways of seeing at and interacting with nature are based on universal facts as taught by great religious traditions and have proved relevent and effective for over three thousand years. Most of the essential measures for safeguard and protection of the physical world are inherently contained in the centuries old Tibetan tradition.

Eversince the question of environment became a serious matter, numerous new studies and theories rushed up all over the world spending billions of dollars to investigate and report on a series of unprecedented aminous facts experienced by our good old planet. The facts included falling of flavoured rain and dyed snow, disappearing of stars from the sky, appearing of a big hole in the depth of space (from where the heavenly flavoured rain and coloured snow might have found their way down, and from where the truant stars might have found their way up to take leave after aeons of duty !!), disobeying the nature's time table by four seasons, and mountains and forests striking out naked to demand for better treatment.

Hasty Approaches for Solution

Although it was not difficult for the sientists to quickly identify incautious and irresponsible human attitude as the sole cause for nature's unknown symptoms of sickness, modern science having little knowledge and experience in the science of transforming human attitudes, turned for help from the traditional schools of religion and philosophy on the matter.

As a result, while many real traditional treasures were revealed, a group of scholar-figures lacking proper background intervened in the process to start a new genre of shallow, artificial, and clever renderings of the profound traditions in an effort to make them relevant to the new issue environment. Certain self-titled Buddhist experts presumed that Buddhists believed mountains and rivers as holy, and trees as living like animals, and thus regarded sinful to exploit them. Others not finding ample direct references in traditional sources, seriously doubted if Tibetans are really for environment.

Living traditional masters regarded the prevailing new trend unfortunate as they amounted to misinterpretation of a profound tradition and misinforming the contemporary world audience. Tibetan masters would find such interpretations not only incorrect but also unnecessary. As presented earlier, Tibetans see the physical environment as the natural home and resource of all living beings, and its protection is critically necessary for the protection the living beings. Buddhism begins and ends in the well being of the living creatures and its concern for the physical world is but an expression of the same concern. It's concern is clearly not for the well being of mountains and rivers as living creatures.

Artificial Presentation of Traditions

Further more, presenting a traditional theory or fact as it stands would be much more effective and relevant to the cause than trying to enhance it by addition of artificial religious or scientific flavours. For instance, for protecting a specific tract of forest, there would be three ways of elaborating it.

a) We should protect the forest because it is a home of hundreds of wild animals and many other living species.

- b) We should protect the forest because it is regarded as the abode of a god, or because it contains tens of thousands of living trees.
- c) We should protect the forest because a scientific study reported that it is a zone of 255 plant species, 37 animal species, and 104 bird species out of which 26 plants, 6 animals and 19 birds belongs to the near extinct rare species.

Although the two latter ways of presentation seem to have become quite fashionable among the present environment advocates, the former style of presenting the fact and purpose in a simple, natural, and earnest manner would be far more releveant and effective in the long run.

THE SACRED : SUPREME GOAL AND PURPOSE OF LIFE

Pillar of Harmony and Stability

The image and influence of the sacred in Tibetan tradition are allpervasive and predominant is all walks of Tibetan life and culture. In Tibet's case the sacred is fully embodied in and represented by her religious doctrines of Buddhism and Bon which are historically different but doctrinally identical. While Buddhism was first found in Tibet in the second century (C.E.) and officially established in the seventh century, the Bon doctrine existed in Tibet as early as seven centuries before Buddhism came to Tibet from India.

Although sectarian rivalries between Bon and Buddhism and among contemporary Buddhist schools were not unknwown, the basic philosophy, the path system, and the final goal of all Tibetan religious traditions were identical. There was not any real base and condition for major interreligious or sectarian conflict in Tibet eversince her dawn of history. It was for this reason that traditional Tibetan historians described Tibet as having remained permanently under the spread of "one single white sheet" of the sacred doctrine.

Apart from the late communist suppression, the doctrine in Tibet remained, not only stable and flourishing, but also relevant throughout the last thirteen centuries. During the last three decades, despite her unfortunate national tragedy, Tibet's religious tradition saw the peak of its popularity and recognition throughout the world. The secret to this prosperity should be now other than the tradition's correct approach to the ever persisting universal questions. Tibetan tradition's approach to these questions were doctrinally scientific and ethically humanistic.

Purpose of the Doctrine

All living beings are equally under one basic situation, that is wishing to achieve happiness and avoid suffering. But what they do all the time are directly and completely against what they naturally wish for. They wish happiness, but do not engage in what would bring happiness. They do not wish suffering, but are always engaged in what would simply bring suffering. They are totally ignorant of the ways and means to achieving happiness and avoiding suffering. They are in need of masters who could guide and help them in as to what and how they should do to be out of the pitiable situation.

It is here that the need and role of the sacred doctrine come in. The purpose of the sacred, therefore, is to free the living beings from all kinds of suffering and to provide them with an everlasting state of happiness by means of a systematic procedure of spiritual training.

Basic Philosophy

The basic philosophy of the religious doctrine as prevalent in Tibetan tradition is essentially subsumed under what the Buddhist scriptures refer to as "The Four Great Seals of the Doctrine". They are indicated as follows:

- a) All compounded objects are impermanent;
- b) All worldly things are suffering-natured;
- c) All phenomena are void and selfless; and
- d) Nirvana (liberation) is the supreme sufferingless and virtuous state.

Buddist and Bon philosophies of impermanence, selflessness, four noble truths, two truths, dependent arising, emptiness, and liberation are all enunciated by the above four-line teaching.

While the traditional Tibetan philosophy consists of numerous theories, extensive interpretations, and many divisions and subdivisions, the heart and central theory or philosophy is the law of "Dependent Arising" which explains the absolute and relative natures of all phenomena. The theory explain the absolute or ultimate nature of phenomena with the philosophy of selflessness or emptiness, and it explains the relative nature of phenomena with the theories of 'Cause and Effect', 'Karma' etc.

The Doctrine: Dual Path System

The nature of the sacred doctrine according to Tibetan religious traditions of Buddhism and Bon is of a closely coordinated dual path system. The two systems of path are the path of discriminative understanding literally called the Prime Knowledge (Skt. prajna) and the path of good-heart or altruism literally called the Technical Skill (Skt. upaya). The paths are first generated separately, and then practised together in a closely coordinated manner till they mutually become spontaneous fore-runners of the other. At very high stages the two paths are said to become virtually united and inseparable.

The significance behind the dual path system lies in the fact that the perfection of a personal being explicitly mean the perfection of its powers of understanding and good-heart together. One sided perfections, although doctrinally impossible, would be somewhat like a very intelligent person without goodheart, or a very goodhearted person without the power of understanding. Just as both these persons would face problems to handle a affair in a human community, a person with a lop-sided spiritual development would not be able to face the most challenging task of handling the unruly beings.

The actual practice of the doctrine takes place in a staged manner beginning with taking refuge from the heart in the Buddha, the Doctrine, and the Sacred Community. It is then followed by generation of a genuine thought of renunciation of the world through a series of trainings. Taking these two preliminary practices as foundation, the person is then led into the practice of the aforesaid dual path system.

The practice of the path of prime knowledge consists of understanding the natures of impermanence, two truths, selflessness, dependent arising, emptiness, suchness, the truth of cessation, and the suchness body of the fully enlightened beings. The practice of the path of altruism consists of trainings in generating the thought of equanimity, seeing all beings as mothers, remembering their kindness, generating thought of repaying the kindness, generating love for all beings, generating great compassion,

generating a special commitment to liberate all beings, generating the thought of exchanging self with others, and generating the great of enlightenment (bodhicitta).

When the two path systems are actually generated, they are further developed through a series of intensive trainings by means of concentrative and investigativ meditations until the paths arise and abide in one's heart as spontaneously as the worldly passions would do in an ordinary person. The development phase of the two path systems is said to pass through several stages like the Five Paths to Liberation and the Ten Bodhisattva Grounds (Skt. bhoomi) with numerous higher practices like the Six Perfections (Skt. paramita). After passing through all the above mentioned stages and practices, the practitioner finally attains the ultimate goal of the great state of full enlightenment and becomes a Buddha.

Buddhahood: The Final Goal

The final spiritual goal according to Tibetan religious traditions is the Buddhahood or the ultimate Great State of Full Enlightenment. It is a supreme state of cessation of all negativities in perefect union with the great state omniscience. It is also a union of the phenomenal suchness of the omniscient mind and the state of the great cessation. The Buddhahood also known as the Supreme Body (Skt. kaya) is classified into three bodies. They are the Phenomenal Body (Skt. dharmakaya), the Joyous Body (sambhogakaya), and the Emanation Body (nirmanakaya).

The phenomenal body of Buddha is the phenomenal aspect of its supreme nature, while the joyous and emanation bodies of Buddha are its personal aspects. Joyous Body, which is the real personal form of a Buddha, arises out of the nature of phenomenal body and it in turn emanates the emanation body from it. Buddha Shakyamuni of our era is an example of Buddha's emanation body.

After achieving the full enlightenment, the appearance of the emanation bodies, accomplishing activities of turning the wheel of doctrine and placing millions of beings on to the sacred states of path, liberation and enlightenment, are all said to take place effortlessly and spontaneously unto the end of the realm of cyclic existence, wherever and whenever the good fortune of living beings are ripe.

CONCLUSION

Tibetan perception of humankind, nature, and the sacred have, thus, apparently remained valid, relevant and effective to the well being of living beings and the physical world for centuries. The scientific approach and humanistic attitude of Tibetan traditions to the universal questions are today attracting attention more than ever, and they are known to possess an undiscovered potential to contribute to the remedy of our present degenerating world. Let us hope that the traditional wisdom of the east will finally remedy the modern madness power and materialism.

Submitted at the International Symposium on Culture and Environment, Bogor, Indonesia, May 21–24, 1992.

> todt 122610 19760 09160 111 10 16191 1 191 She | 901161 where is no: mos TW UNES May 1 Canbe

60 CB

otai

916W

4.2. CULTURE IN ECOSYSTEMS – AUSTRALIAN WAYS¹

by : Helen Ross² Fellow

PEOPLE OF THE LAND

A group of Aboriginal spirit children are playing near a small waterhole, left behind when the river dries up between rainy seasons. They jump and splash in and out of the water, laughing and chasing each other around a large overhanging tree and some rocks. Suddenly they pause. Some women are coming near, carrying their digging sticks to gather yams, or perhaps to catch a goanna if they see one. It is time. One of the spirit children jumps into one of the women. That night, back at camp, her husband dreams that she will have a child, and it will have the freshwater mussel totem associated with the waterhole the spirit came from.

As Nambiyin grows up, she is often taken to the area surrounding that waterhole, and she comes to know it as her 'country'. Her personal name is that of her country, Lamboo, meaning paperbark (melaleuca tree) country, though most of the time she is known as Nambiyin. This is a 'skin' or classificatory name, which shows where she fits into her society. Her parentage makes her a Nambiyin, and being a Nambiyin tells everyone which categories of men she could marry, which men and women she must avoid or treat very respectfully, and which people she will have an especially close relationship with.

As she grows up, she learns everything that a woman should know about her country, and also about neighbouring country where she has relatives. She learns how each of the landscape features was made. The river and range of hills which pass by the waterhole along the river represents a place where the snake camped for a night, and urinated in the morning. (She is not allowed to know much of that story, it belongs to men.) A gap between some low hills was made by the little rock wallaby, running northwards with the kangaroo as they chased the men who had killed the blue-tongue

^{1.} Paper presented to Symposium on Culture and Environment organized by UNESCO and Indonesian National Commission for UNESCO, Bogor, Indonesia, 21–23 May 1992.

^{2.} Centre for Resource and Environmental studies Australian National University, Canberra.

lizard. A misshapen tree represents a stopping point of the eaglehawk on his travels. A white rock in the sandy river bed is used for grinding anthillsto reach the honey inside, but is dangerous for children to go near.

She learns the songs and stories of many of these great Ancestors, songs which take days to sing and dance right through when performed in a ceremony. Each song tells of an Ancestor's travels, what she or he, or sometimes a pair of Ancestors, did in each place. The routes of these Ancestors link places, and the Aboriginal groups which own their Dreamings, for thousands of kilometres across the country. It is said that just by knowing the right song, an Aboriginal person can survive in areas they have never been, knowing where to find water and food and how to find their way. Every plant and every creature has its song, even the insects which smash against the windscreen when her grandfather drives them out bush.

She grows up knowing the moral lessons and the practical knowledge left by these Ancestors, directly in the landscape and told in the songs, why she must marry a Jangarri man, why she must share food with others, how to use fire to regenerate the bush and create a better habitat for animals, and how to cook a each type of food, As she becomes a woman, and ready for marriage, she is taught more songs and dances, which men are not allowed to hear. She learns of relationships between men and women, and in time will be able to 'sing' for the attention of the men she desires.

All this is known as the Dreaming, or in her language, Waljiri. What a poor translation for the great past and everlasting present, in which ancient Ancestors and spirits continue to guide human nations. The spirits send new messages, even new ceremonies, through dreams - only last year a few of the wise older members of her community reveived a new ceremony this way. The Dreaming is also the Law. All the main prescriptions and proscriptions for people's behaviour were set out by the Ancestors in their travels long ago, and their messages are embodied in the landforms they made.

Nambiyin has always considered herself literally part of her environment; her existence has meaning, and she has personal and group identity, in reference to the land. She has no concept of owning the land, but she knows deep responsibilities towards it payable even with death if the spirits think it necessary. The land feeds her and her children, but she does not so much

consider it a 'resource' as part of her being. Some non-Aboriginal people, perhaps awkwardly, describe the relationship as 'the land owning her'.

In Nambiyin's world view, culture and environment are inseparable. Landscape forms are the reference point - and she believes the point of origin for all cultural beliefs and behaviour. The landscape is also a cultural one every landform, plant and animal is named and has cultural meaning. History, the stories of the Ancestors, ties culture and environment together. And what a history! Evidence of some of those larger-than-lifesize Ancestors, animal forms personified with human motivations and actions, has been found in fossils of giant emus, kangaroos and a wombat (Diprotodon) alive 50,000 years ago. A third of these giant herbivores and marsupials were extinct by 15,000 years ago (Lines 1992: 9). The dinosaur's footprint at Broome in the northwest, for example, coincides with the final earthly step of the giant emu.

Nambiyin's people are now struggling to look after the country the way the Ancestors insisted. In the first parts of Australia to be taken over by white people, a lot of the knowledge was lost. Aboriginal sicieties were decimated by massacres and disease, and the remainder scattered to Christian missions and government settlements, often far from the country which provided the 'texts' for young people's learning. The old people had to hide their knowledge from white authorities, but struggled to pass on what they knew. In the twentieth century, whole generations of children were taken away from them, and missed the chance to learn from their elders and their country.

Those children whose rights to knowledge were denied still have a strong sense of Aboriginal identity however, and an emotional sense of kinship with the land. They are findings ways to assert their culture, and bring other Australians to understand the land too. Nambiyin's people are trying to explain to non-Aboriginal people that the land cannot take the treatment that non-Aboriginal people give it. The grasslands deteriorate if they are not burnt regularly; many small marsupials have died out because their habitats have changed. Digging in the ground for minerals is very dangerous, especially where angry Ancestors lie underground. If we treat the land wrongly, the ecosystems on which all animal life depends will stop working, and we will all suffer. If the Ancestors are disturbed, they will cause fires, floods, earthquakes, or volcanic eruptions, which could kill

everyone. Aboriginal people do not need to think about 'sustainable development'. They have always assumed that the only way to live is 'sustainably', and their culture continues to emphasise modest material needs and the sharing of food, clothing and shelter as a result. For Aboriginal people, quality of life comes from appreciating one's country, and a lively religious and social life. Material possessions are not essential to enjoy life.

PEOPLE APART FROM THE LAND

Kylie is growing up in an Australian city. She thinks her food comes from the supermarket, and has never thought to ask where it came from before that. She knows her parents work to earn money to buy things at the supermarket and other shops, but thinks it's a pity they are always so stressed and busy, and can only spend a little time with her in the evenings. She's not quite sure what they actually do, except go to an office, but she's noticed that they don't understand each other's jobs either !

Kylie's school has decided to teach the children about the environment, in a week-long special course in the country, Through games, they learn about food chains, how each animal eats another animal which eats a plant. which takes its nutrients from soil and water, so that if you pour poisonous wastes from your house into the garden soil o down the sink, it ends up in someone's food chain. It might poison some animals or people, and upset a local ecosystem in which animals and plants depend on one another. When they talk about this back at school, she is amazed to realise that whole valleys had to be dammed to provide the clean water that flows so freely from the household taps, and that when the water goes down the drain afterwards it has to go through some very expensive treatment plants before going back into the river. Over hundreds of kilometres of river, that water is used again for other towns' water supplies, and also to irrigate the vast agricultural lands it passes through. She can now understand why they don't like drinking the water at the last town on the river. She is most upset to learn that some of her favourite furry animals are threatened in parts of the country, because their homes are being cut down for paper and woodchips. Kylie goes home full of enthusiasm to mend the family's ways, but is confused because her parents don't seem to know much about the problems.

Fortunately, Kylie's parents have been meaning to learn more about the environment, and take Kylie's enthusiasm as their opportunity. The trouble is, when they were at school, they weren't taught about ecosystems. They were taught more about giving latin names to plants and animals and soil types, than about the processes and interdependencies which link them. They had dissected frogs in biology class, and so remember vaguely how their digestive systems and muscles work, but had no idea that trogs are considered indicators of the health of land, and that there is world-wide alarm about the rate at which frog species are disappearing. They consult a lot of books, magazines and advisory groups, and try not to think about the number of koalas' and possums' homes which had to be cut down to provide this information.

The family is full of good-will, but when they try to change their pattern of living, they find lots of difficulties. They manage to cut down on their use of paper, and to recycle what they use, but cannot stop the flow of junk mail coming each day. They think of catching the bus or cycling when they go out, but calculate that it would take so long to get to and from work that they would hardly see Kylie at all. The parents can't even share a car. because they work different hours at different locations. They consider moving closer to their offices, but don't want to lose their neighbourhood friendships and support networks, and realise that some other family would just have to make the long journeys instead. They think about the foods and other goods they buy at the shops, but realise that if they choose things which don't have to be transported far or be processed and packaged so much, someone in a developing country or elsewhere in Australia will be put out of work. They agonise over the smallest decisions - is it better to buy their milk in cardboard cartons, which can't be recycled because of their plasticised surface, or in glass bottles which can be reused but use a lot of non-renewable materials and energy in their manufacture? Their society and economy is so complex, and they are so dependent on the system which supplies all their daily needs, that it is hard to change. Still, they try, hoping that if enough other families do the same they might cut a feww percentage points off the amount of resources used, delay the need for the city's water supply to be enlarged, and create economic incentives for new businesses to produce new, more environmentally sound products.

Their dilemma arises because their culture originally saw itself as separate from, and far superior to, the land and the other forms of life it supports. Their ancestors thought their role was to 'tame' nature, rather than to live with and nurture it. Their neglected national religion, Christianity, teaches wonderful values about other people, but says little about the natural world or how it works. In centuries of reinterpretation of the Judaeo-Christian messages, the culture has linked the 'taming' of the environment with its 'Protestant work ethic' to come up with the notion of 'development'.

DEVELOPMENT AND WESTERN CULTURES

Development, when you think about it, is a rather curious concept.

In its original meaning the word refers to the way a potential is realised. Thus a child will develop into an adult and a seedling into a mature plam. In these instances the process is intherent but there are others where action is necessary to achieve realisation or where it can increase that potential. Thus a composer can take a melody and develop it into a complex musical pattern . . .

The use of the term 'development in relation to economic matters is relatively new but in the last few decades if has become dominant in the study of an economy as a system – the ways in which it is organised, responds to external influences and can be modified to change its potential. Processes which are believed to promote an increase in that potential are referred to as 'development' (Coombs et al, 1989: 3).

The development ideology is central to contemporary Western culture, and the motivating force underlying the world industrial and trade economy. In its strongest form, 'development' is treated is an imperative – because a resource is there, it must be developed if the economic conditions (prices and cost structures) are suitable. In material terms. Western cultures have become dependent on a complex web of international transactions which distance them many steps from the environments from which their materials actually originate. The system meets not only people's subsistence and material needs, but has also come to underpin their demographic and social organisation. Through forms of work and recreation and the esteem these are given in Western cultures, the system also provides the means of meeting many of people's abstract personal needs for recognition, personal achievement, stimulation and self-esteem (after Maslow, 1954). Development is often taken to include 'human development' (sometimes referred to as 'human resource development' which speaks for itself). Here, however, the emphasis is on health and education and creature comforts, which like Western culture seem to treat us more as individuals to make our own way in the world, than as societies and cultural beings. Only 'community development', favoured by many aid NGOs, emphasises a societal dimension as well as improving material well-being.

Development is linked with concepts such as industrialisation, modernisation, and thence westernisation, which have combined to incorporate other countries and cultures into the economies and cultural ways of Europe and the Americas, and hence into unbalanced north-south relationships. Economically, 'development' has the capacity to destroy ecosystems and use up specific natural resources. Socially, it has the capacity to transform cultures by breaking or altering special nexus between each culture, each social group, and its environment. Local communities may lose their livelihoods directly while the businesses which destroyed their forest or agricultural ecosystems, or dammed their valleys, move on to another place or another industry. Otherwise, they may be transformed beyond recognition by their incorporation into national and world market economies, and the environmental and social impacts their new economic 'niche' brings. It is hard to change production, to industrialise, and urbanise, without changing some of the fundamentals of culture.

Western science has an important role in the distancing of Western calture from the environment. It is supposedly 'neutral' and 'objective', but its fields of interest actually stem from the Western cultural world-view. Unlike the knowledge systems of indigenous peoples, which emphasise ecology and spiritualism, it has emphasised parts rather than wholes (reductionism). The connections between living things are still poorly understood. Western technology, by contrast, shows a mastety of complex physical and chomical interactions, which combined with creativity and inventiveness, have provided us with the engineering fets and communication tools to build and maintain the world economic and social systems. (Aboriginal people now appreciate and use some of this technology, turned to their own cultural ends).

Western culture has downplayed spiritual needs, and religious beliefs, it values logical abstract thought, but is not comfortable with the unprovable.

As a result, it has trouble accepting its own Christian mythology, and utterly rejects the beliefs of other cultures or considers them 'quaint' but illogical. Being a very literal culture, it has trouble accepting the stories of the other world religions as metaphors and parables carrying sophisticated moral and environmental lessons.

CULTURE AND ENVIRONMENT

Culture makes us the sort of individuals and communities that we are, and what we help our children to become. It conditions how we use the land, and with it the plant and animal worlds, to feed and shelter ourselves but also to nourish ourselves spiritually. Because of our 'capacity for culture' (Boyden, 1987) we have the most ability to reorganise, and even destroy ecosystems, of any species on this planet. We can use this ability constructively, as Aboriginal people did, or disruptively.

Our cultures are shared systems of belief or meaning, which shape our behaviours and the material changes we produce. The characteristies of the environment we have altered and the products we have made then affect our future behaviours, which in tum either reinforce or promote changes in our mental systems. Thus what we believe or value, in the cultural mental realm, affects how we treat the natural environment, while the characteristics of the environment enable or constrain how we behave (Michelson, 1970).

I am arguing that each culture's mind-set, its belief systems and the behaviour it encourages, shapes the way that culture relates to the environment. Aboriginal Australian culture is based on an equal and respectful relationship, which generally encourages abstemious use of other forms of life and only the most careful changes to the natural environment. Non-Aboriginal culture, of Western origin, has a dominant relationship. It sees technical and economic, but seldom moral, limitations to its use of the environment. Yet both cultures are dependent on natural environments, as is every world culture.

I argue that 'development' is a once-western, and now international, cultural concept which works to destroy ecosystem living and also threatens cultures. Development emphasizes the material and individual, and denies the spiritual and cultural. It addresses the 'basic needs' of Maslow's hierarchy of human needs, and the security ones, but falls short on the higher levels

for belongingness and love, esteem and self-actualisation (Maslow 1954: 80-106). 'Development' therefore neglects the qualitative richness of human life – social bending, spiritual feelings, diversity of cultures and individual character.

'Sustainable development', the new international concept, holds some premise of chan ing this trend. The debate so far, however, still emphasises forms of production and subsistence, far more than social and cultural considerations. I believe we need to think in term s of sustaining cultures and communities, not just meeting the subsistence needs of individuals or sustaining 'development' in a modified form (as the current Australian process towards Ecologically Sustainable Development could easily be taken to mean).

Sustainability can be achieved only if we put 'culture' more firmly back into 'development'. By this I mean that the way we relate to environments needs to be controlled by appropriate cultural values, and that those cultures which already have a balanced and knowledgable way of relating to the environment should be given the freedom and encouragement to do so. Instead of world westernisation and industrialisation, we need to think in terms of world multiculturalism and a respected of variety of careful ways of meeting out subsistence needs.

Canada's Department of the Environment has talked about how its mainstream culture needs to learn from its indigenous culture, in the intersts of sustainable development. Australia is beginning to learn from Aboriginal knowledge of land mana ement, but so far is more interested in practical knowledge and the specific techniques such as fire management, tracking and conservation, than in the value system which made the ecological knowledge and ecological management techniques important. White Australians may appreciate the Aboriginal value system, at least in theory, they scoff at the Ancestral beliefs which Aboriginal people hold to explain and maintain the values. By dismissing the belief system, they miss the logic behind the value system. The question is, how can we assimilate such a useful value system, without a bilief or ideological system which firmly maintains those values? Then even if we could resolve to adopt a value system which respected the environment, could we restructure our world economic and production systems sufficiently to live out those values? Can we really change our

consumption patterns sufficiently to 'live lightly on the earth'? (Boyden et al, 1990).

Sam Butters, an Aboriginal friend in the East Kimerley, described the relationship between our culturess in terms of tuning into radio frequenciest 'we can get your stations clearer than you can get ours'. Aboriginal people can understand our culture, and see the relationship between our values and behaviour, much more clearly than we can understand theirs. This needs to change.

I welcome this first World Day of Cultural Development, and this Symposium, because I believe it is by appreciatingone another's cultures, and larning from them, that we stand most chance of turning towards. 'sustainability' looking after the ecosystems we are part of and depend on, more respecifully.

Notes

- This description of Aboriginal culture and places is typical of the Aboriginal sociedes of the arid lands of Australia. As cultural details and names vary between language groups, I have illustrated from the Jaru language group of the East Kimberley.
- 2. For those unfamiliar with Australian animals, a goanna is a type of lizard and possums and koalas are tree-living marsupials, animals which carry their young in a pouch.
- The second description draws on the work of my former student, Meg Keen, on environmental education, including the 'Sunship Earth' Program at the Birrigai Outdoor Education Centre.
- 4. My model of the relationship between culture and environment draws on work for my PhD thesis, inspired by Personal Construct Theory (after George Kelly, the Psychology of Personal Constructs, 1955), and the works of Ames Rapoport, J. W. Berry and W. Michelson.

References

Boyden, S. (1987) *Western civilisation in biohistorical perspectives patterns biohistery.* Oxford: Oxford University Press.

Boyden, S., Dovers, S. and Shirlow, M. (1990) *Our biosphere under threat ecological realities and Australia's opportunities.* Melbourne: Oxford University Press.

Coombs, H.C., McCann, H., Ross, H. and Williams, N. (1989) Land of Promises, Aborigines and Development in the East Kimberley. Canberra: Centre for Resource and Environmental Studies and Aboriginal Studies Press.

Isaacs, J. (ed) (1980) *Australian Dreaming: 40,000 years of Aboriginal history Sydney:* Lansdowne Press.

Lines, W.J. (1992) *Taming the Great South Land: a history of the conguest of nature in Australia*, Sydney: Alien and Unwin.

Maslow, A.H. (1954) *Motivation and personality*. New York: Harper and Brothers.

Michelson, W. (1970) *Man and his urban environmen*. Phillipines Addisen Wesley.

.

4.3. MAN'S, INTERACTION WITH ENVIRONMENT:

Case Study of Workers and Plantations¹

by : Sjafri Sairin²

INTRODUCTION

The aim of this paper is to discuss relationship between plantation workers and their environment. This is based on a study carried out in North Sumatra in 1985. The province of North Sumatra, particularly the former area called East Sumatra, is well known as the plantation belt of Indonesia and is famous for its Deli wrapper tobacco leaf. The history of the development of commercial agricultural crops in this area began when Nienhuys, a Dutch tobacco cultivator, and his colleagues opened the first tobacco estate in East Sumatra in 1863. The first crop of 1864 yielded 50 packs and was brought to Rotterdam where it was sold for 48 guilder cents per 1/2 kilogram. In 1865, 149 packs were produced and exported to Rotterdam and these sold at a higher price of 149 guilder cents per 1/2 kilogram. In 1865, 149 packs were produced and exported to Rotterdam and these sold at a higher price of 149 guilder cents per 1/2 kilogram (Tabak: Tabakscultuur en Tabak- producenten van Netherlands Indie, 1925, 124). Because the profit abtained from the sale of Deli tobacco in Europe was enormous, more and more planters were attracted to the region to establish estates. To acquire land, they simply reached an agreement with a Sultan. It was shown that the soil and climate of the region were well suited to the cultivation of tobacco and Deli tobacco was able to achieve a monopoly in the world market and to command a very high price because of its quality.

INDENTURES WORKERS

Following the success of tobacco planting in Deli, a number of foreign companies began to open estates in East Sumatra. They also planted coffee, coconut, rubber, oil palm and other crops. However, the establishment of

¹ Presented to International Symposium on Culture and Environment held by Indonesian National Commission for Unesco, Ministry of Education and Culture on May 21-24, 1992 in Bogor, Indonesia.

² Teaching Staff at Department of Anthropology Faculty of Letters and Senior Research Staff Population Studies Center Gadjah Mada University Yogyakarta, Indonesia.

large plantations gave rise to a problem of worker shortage. One of the essentials for the plantation system was the provision and maintenance of a large quantity of cheap worker (Gordon 1982: 174). However, few indigenous people of the region were interested in working as workers, as their own land provided them with an independent livelihood. Therefore estate companies were forced to recruit workers from outside East Sumatra. initially from China. When it was no longer feasible to import Chinese workers due to the policy imposed by the Chinese government to limit the exportation of indentured workers to Southeast Asia, the plantations turned to Java. The recruitment of wage workers from Java began in the early 1870's (Broersma, 1922: 246)³. During that same year East Sumatran planters also started to recruit South Indian people as wage workers. These indentured workers were bound to work contracts of three years: transport and housing for the workers were provided by the estates. Some of the Javanese returned home after their contracts expired, but most did not do so and remained permanently in East Sumatra.

The planters recruited workers through the agency of professional recruiting officers in the Straits Settlements and in Java. In the beginning Chinese workers were recruited through the *kongsi* system ini the Straits Settlements, then in 1870 through Chinese agents (tindal) in China (Reid, 1970: 239). Javanese workers who were recruited after 1870 came to East Sumatra through agents of the Deli Planters Vereeniging (Deli Planters Company) which was operated by Europeans, but used Javanese field recruiters called *werek*.⁴ Field recruitment included trickery and fraud. For example, people would be invited to attend a shadow puppet drama, but then be taken captive and sent to East Sumatra (Kloosterboer, 1960: 49).

In addition to the professional recruiting system, in 1911 the free labor ordinance was introduced. In this system the *lao-keh*, a Chinese expression current in east Sumatra meaning an old hand, were sent back to their native villages, and returned with new workers and their families (Handbook of the Netherlands East Indies, 1924: 134).

³ Dootjes (1938 : 49) states that the recruitment of plantation workers from Java started in 1872.

⁴ Labor recruitment agencies were officed in Semarang, Magelang, Purworejo, Yogyakarta (Central Java) and Bandung (West Java). The points of departure were Batavia (now Jakarta, the capital city of Indonesia), Semarang (Central Java) and Surabaya (East Java) (Het Department van Binnenlandsch Bestuur, Werving en Emigratie van Inlanders, no. 121 J. Weltevreden, Landsdrukkerij, 1919, p. 21 – 37).

These various recruitment systems gradually increased the number of workers on the East Sumatran plantations. In May 1884 there were 27,000 Chinese and 1,800 Javanese at work in East Sumatran plantations. By May 1900 there were 36,509 Chinese and 19,223 Javanese and in May 1927 there were 28,815 Chinese (the number of Chinese at work on plantations reduced by about 21 per cent) and 62,498 Javanese, including 19,929 women (Modderman, 1929: 85).

The establishment of large estates in East Sumatra also attracted many neighboring ethnic groups like the Toba Batak, the Mandailing Batak, and the Minangkabau to move to the region. Members of these ethnic groups migrated to the region not to work in plantations, but to trade or find new sawah lands. Some of them were invited by the planters to work as school teachers or clerks on plantations.

With these newcomers the population of East Sumatra was dramatically increased. It went from a sparsely populated area in 1800 to over half a million in 1905 and 1,693,200 in 1930 (O'Malley, 1977: 121). According to the census of 1930, more than 42 per cent of the total population of East were Javanese (including a small number of Sundanese and Sumatra Jakartanese). Ten per cent were Chinese, and about 22 percent consisted of members of other Indonesian ethnic groups. The Malays, one of the indigenous ethnic groups of east Sumatra, comprised only 15 per cent of the total population in 1930 (Pelzer, 1978: 63). During the Japanese occupation in the 1940s, the recruitment of wape workers was halted as a result of the Second World War. The recruitment of wage workers from Java resumed after Indonesia's independence through the efforts of the Sumatra Planter Association (Gabungan Pengusaha Perkebunan Sumatra Utara-GAPPE RSU-). Recruitment was interupted again in 1957 when Dutch plantations were nationalized and inter-island shipping virtually collapsed after Dutch shipping left Indonesia (Thalib, 1962: 54). Then the recruitment of workers came from Java through the program called Angkatan Kerja Antar Daerah or AKAD (Inter-regional Labor Force).

Under this program workers had the option at the end of their contract period to resign and remain on the estate or to return to their homes at the expense of the company. In the 1920s around 85 percent of the Javanese men and 60 percent of the Javanese women were re-engaged by the plantations (Hotchkiss, 1924: 158). However, only a small number of Chinese

workers chose to remain in East Sumatra as most of them preferred to be independent and opened their own businesses in urban areas of East Sumatra. In the 1930s, of approximately 200,000 Chinese who were living in the region, only 27,000 were working on estates; the remainder were largely to be found in or close to cities or towns (O'Malley,1977:120). Yet of around 590,000 Javanese living in that region at that time, 240,000 (around 41 per cent) were working on plantations. The rest were mostly to be found in rural areas of East Sumatra. Although not all Javanese who live in the region today work on plantations, most plantation workers are Javanese and at least half a million people of Javanese origin in East Sumatra in 1980 were directly employed by, or depended on, the plantation activities for their livelihood (Ginting and Daroesman,1982: 5).

There is a close relationship between the beginning of large scale Javanese immigration to East Sumatra and the development of commercial agricultural crops in these areas. However, why generation after generation Javanese remain and work on plantations, even though most of them are living only at a subsistence level (*pas-pasan*) In 1985 for example, the daily cash wages of a worker was only 1,125 rupiah which was equivalent to 3.21 kilograms of rice. What factors influence them to remain? Why do they persist in remaining on plantations, while Chinese and Indians who work as wage laborers in plantations usually leave?

HISTORICAL EXPLANATIONS

Some answers to the questions above have been offered by previous writers, primarily from historical and "possibilism" perspectives. According to those writers, there were at least three factors influenced a workers' decision to remain on the plantation. The first was the creation of a labor control system through the introduction of penal sanctions. As the main goal of planters was to maximize economic returns they created a labor system which allowed this to happen. In the case of East Sumatran plantations, this was facilitated by a series of collie Ordinances introduced in 1881 which were referred to as *punale sanctie* (penal sanction). These ordinances emphasized that workers who refused to work or ran away were subject to punishment, imprisonment or fines (Pelzer, 1978: 45–46). Once workers were on a plantation, there was often no means of escape for the penal

sanction successfully kept them bound to their employer. Although some regulations contained within the penal sanction were designed to protect the workers, those aspects were frequently ignored by the planters.

The other factors which influenced the workers to remain on plantations were opium and gambling. These factors can be categorized as non-formal since they were not directly related to the formal policies carried out by planters. The introduction of opium to plantations in some instances was encouraged by the Ducth Indies government.⁵ This is closely related to the fact that the revenue received from the opium monopoly was one of the major sources of income for the Dutch Indies government, particularly after World War I when the balance of revenue and expenditure had suffered and the revenue from opium was the single source of income that remained steady (La Motte, 1924. 107). In 1921 for example, the Dutch Indies government imported approximately 117,344 kilograms of raw opium from India. The revenue received from this was 44,035,000 guilders. This increased in 1922 to 48,055,000 guilders (Opium: A World Problem, 2 (4) July 1929, Appendix).

The Dutch government did not sell opium directly to consumers, but distributed it through people salaried by the government (Willoughby 1925: 111), These people held opium licenses. Hundreds of people were involved in this business and trade seldom ended at the level of the official opium. stores. These were, in fact, distribution centers from which peddlers purchased opium products to be resold in smaller shops and opium dens. Because there was so much money to be made by selling opium, many people became involved and consequently the number of unlicensed opium dealers grew disproportionately to the licensed dealers. In 1934 in East Sumatra, for example, out of 28,585 opium distributors 28,422 (around 99,5 per cent) were unlicensed opium distributors. On Java, however, out of 44,210 opium distributors, there were only 6.970 (20 per cent) unlicensed opium distributors. If we compare population figures for East Sumatra during that year (around 1,700,000) to the number of opium distributors in that region, we come to the conclusion that region, we come to the conclusion that around 1.5 per cent of the total population of East Sumatra were opium

⁵ On the first of March 1912, the Dutch government established 300 opium shops (verkoopplaatsen) in East Sumatra. To run the business, 500 people were brought from Vatavia, Minahasa, Borneo and other parts of Java (Sinar Dell, 1 March 1937).

distributors. In Java, however, only 0.1 per cent of the total population (around 41.700.000)⁶ were opium distributors. It is interesting to note that the amount of opium sold in East Sumatra in 1934 was not much different from the amount sold in Java that same year. In 1934 there were 136,896.27 thahlil⁷ of opium sold in East Sumatra whereas in Java (including Madura) around 154,470.34 thail⁸ were sold. This meant that in East Sumatra there were around 80.50 thail of opium sold per 1000 people while in Java there were only 3.70 thail of opium sold. From the above data we can surmise that, in view of the relatively small population of East Sumatra and the large number of opium distributors and the amount of opium sold in the area, plantation workers were active opium consumers. There is strong evidence that opium was also sold directly among plantation workers. In one report Coolhaas, the controller of the district of Padang Bedagai, Deli Serdang Regency, wrote that in 1933 there were 14 opium verkooplaatsen (opium shops) in that district and that all of them were situated near plantations. In 1932 in this district there were approximately 10,457.96 thail of opium sold, which brought around 261,448 guilders (Coolhaas 1934). From this report it is undeniable that the Dutch Indies government intentionally sold opium on plantations. Besides gaining economically from this trade, they also indirectly helped assure planters that the workers would not desert the plantation.

According to one Chinese leader the Dutch government can be seen to have encouraged opium smoking among plantation workers. Then when they became dependent on it, they were forced to request advances on their wages or loans from their employers, in order to satisfy their increasing desire for the drug. Thus some workers lived on wages that would be paid only after several years (Opium: A World Problem, 1929: 39). In this way thousands of workers became tied to the plantations by the unbreakable manacles of opium, and never returned to their villages.

Gambling was another factor that forced the workers to remain on plantations. Planters instituted a bi-monthly holiday (*hari besar*) on

.

⁶ See Indisch Verslag, 1940, Statistic Abstract for the year of 1939.

⁷ Thahil is commonly written as tael (Chinese English Dictionary 1979) or tahil (Almanak Nasional 1942). One tael is around 1.5 American ounce.

⁸ Verslag Betreffende de Opium — En Zoutregie en de Zoutwinning over het Jaar 1934. Batavia, Landsdrukærij, 1935, p. 50 — 54.

plantations, on the first and the fifteenth of every month. On the first day of each month the workers received their "big" wages (gajian besar) and on the fifteenth they got "small" wages (gajian kecil). The amount of wages and other benefits received by the owrkers on the day of gajian besar was relatively higher than those they received on the gajian kecil. On gajian besar in addition to the wages, workers also received allotments such as textiles. Thus the day of the gajian besar was considered as a festive day by the plantation population.

Gambling became common practise during the fiest of gajian besar. It was run by the gambling bankers (bandar) who were mostly town dwellers who came to swindle workers out of their wages. The bandar were clever and lured workers into the pleasures of gambling before they realized that once began there was little change of escaping the trap of its addiction. Hence gambling ruined the lives of many Plantation workers and were forced to sign new contracts because they gambled away all they possessed. This meant that they would never leave the plantation, and were deprived of all hope of seeing their native villages again (see Lulofs, 1936).

In some instances this kind of analysis is not sufficient to describe the phenomenon of the workers who chose to remain and work on plantations. If the three factors mentioned compelled many workers to remain on plantations, why did others workers leave, particularly the Chinese workers? From historical records of one East Sumatran plantation, it is clear that the quality of the work performed by the chinese was higher than that of the Javanese, particularly on tobacco plantations (Pelzer, 1978). From an economic point of view, by decreasing the numbers of Chinese workers on plantations the planters lost the opportunity to maximize profits. Why then did the planters allow Chinese workers to leave? Were their policies ineffective in forcing them to remain on plantations? I suggest that formal sanctions and the informal enticements were not in themselves sufficient to account for why Javanese workers remained on the plantations while their Chinese counterparts left.

Penal Sanctions, the opium business and gambling activities are no longer a part of life on the East Sumatran plantation. Penal Sanctions have been replaced by a labor agreement called *Syarat Kerja Umum* (which literally means the "general working requirement"). The use of opium is prohibited, as is gambling. The are today no opium shops open around plantations.

Gambling was abolished with the establishment of the New Order government of 1966. Thus there is no longer a fiesta on the occasion of pay-day. However, the largest proportion of plantation workers are still Javanese, second or third generation descendants of the early indentured workers. The economic conditions of the workers are reported to be not much changed: they still only live at a subsistence level (*pas-pasan*).⁹ A 1983 study carried out by a team from the Economic Faculty, University of North Sumatra indicated that the payment received by plantation workers in East Sumatra is still low, and insufficient to satisfy workers' daily needs (Fakultas Ekonomi Universitas Sumatra Utara 1983). This situation raises the question: Why do Javanese still persist in working on plantations, even though the plantation cannot provide them with a better economic life?

SOCIO-ECONOMIC AND CULTURAL REASONS

Socio-economic and cultural factors that undoubtedly influenced the workers' decision to remain on plantations or to leave them and try to find work outside plantation areas, have never been taken into consideration in previous analyses of the plantation system. I would like to show that socio-economic and cultural factors play important role in influencing Javanese plantation workers to continue working on plantations. These factors are actually related to the way of thought of the workers. The way of thought of people are mostly derived from their inherited cultural and their experiences in responding to their environment and this is closely related to concept of "human territoriality" which is proposed by Sack (1983).¹⁰ Since territoriality involves a form of classification of geographical area, it is quite relevant to explore the way of though of the workers why they choose to work permanently on plantations.

This study indicates that the central explanation of the respondents as to why plantation workers prefer to remain on the plantation is that life there is *tentrem*. The term *tentrem* is derived from Javanese and is a concept which some writers suggest conjures up images of tranquility, serenity, equanimity, composure and calm (Moertono, 1968: Guinness, 1976). In daily

⁹ *Pas-pasan* is a term used by plantation workers meaning that their wages are only enough to feed their households two or three times a day with simple meals (mostly rice, dried fish and cassaval leaves), to provide for social obligations, such as serving guests with a cup of tea and simple cookies, to buy clothing for household members once a year and to buy local-made cigarettes.

life, *tentrem* is defined differently by different people. For some it is an ideal situation (close to a utopian condition) in which everything is running well, without any problems occurring in either the individual or societal life that is enough food to eat, good dwellings, no crimes, no conflict: everything is in order without any disturbances.

Plantation workers, however, distinguish two main categories of *tentrem*. The first is related to the economic aspect of a persons life and is connected to the fulfillment of human physical needs. The second is associated with the social aspect the life and is related to social peacefulness. If the situation of the first and second *tentrem* have been achieved, one will reach a condition of *tentrem batin* which is tranquility of inner feeling; achieving "a peace in one's heart".

For the Javanese wong cilik such as plantation workers, the first category of tentrem is expressed as a condition in which all basic needs for human life can be fulfilled. Although the concept of basic needs is defined differently by different people, for plantation workers the first tentrem is associated with clothing (sandang), food (pangan), and shelter (papan). On the other hand, the second tentrem is expressed as freedom from social disturbances such as crimes, physical conflicts, etc. The first and the second tentrem cannot be separated because they are inextricably interwoven with a feeling of tranguility and peace.

This concept indicates that as long as a person is not starving, has enough clothing to put on and has a place to stay, the main aspect of the first *tentrem* is achieved. Plantation workers realize that they live at a subsistence (pas-pasan) level. From an economic point of view, however, the opportunity of working as permanent plantation workers is more promising than working outside plantations. This economic opportunity is actually related to the fact that by working in plantations the workers can achieve the needs that most Javanese *wong cilik* call *cekap sandang*, *pangan lan papan* which literally means "enough clothing, food and housing". According to the way of thought of traditional Javanese *wong cilik*, the most important thing to reach in one's life is to pursue the achievement

¹⁰ Human Territoriality is a theory proposed by Robert D. Sack which is defined as "the attempt by an individual or group (x) to influence, affect, or control objects, people, and relationship (y) by deliminating and asserting control over a geographic area (1983).

of *pangan* (foods), *sandang* (clothings) and *papan* (housing). These three important requirements are relatively easy to achieve on plantation and difficult to achieve for those who work as laborers outside plantations. This way of thought of plantation workers is closely akin to the concept of "subsistence ethic" proposed by James Scott (1976), which stresses the principle of "safety first ".

One of the many questions asked during the study was whether workers were satisfied (betah) with their work on the plantation and whether they were interested in working outside the plantation if offered a job with the same facilities and salary, including housing and medical care. The majority of respondents said that they were satisfied (betah) working on the plantation and were in fact not interested in leaving the plantation. This study indicates that the workers continued permanently on the plantation because they felt not only economic *tentrem*, but social *tentrem*. This social *tentrem* is an important factor for workers on the plantation. It has been established that the majority of plantation workers in North Sumatra are Javanese. These workers are not only a part of the economic community a plantation creates, but share strong ethnic and cultural bonds with the majority of fellow workers.

Plantation workers are aware that they are different from the society their plantation. The workers (*masyarakat kebon*) see themselves as an undifferentiated society whereas they see society outside plantations (*masyarakat luar kebon*) to be differentiated (plural society). Members of a plantation society are not only aware of their existence on the plantations as workers but are also aware that they are a group of people who have their own cultures and traditions which are different from the cultures and traditions of societies outside plantations.

For the workers a plantation is not only a place to make a living, but it is also a place to raise and educate their families and to achieve their dreams. Since most contemporary North Sumatran plantation workers were born and raised in or around plantations, they consider the plantation their "home". It is therefore, the plantation is regarded as a *tentrem* place to live. This consideration is one of factors that encourages plantation workers to continue working on plantations generation after generation. It appears that not only economic factors that keep workers on plantations but also this feeling of equality, similarity and social security (laras or rukun). There are at least two major factors which convince the Javanese workers that the plantation provides a *tentrem* place to live. Firstly, there are internal factors which are closely related to the system of Javanese cultural values, and secondly, there are external factors which are related to the historical background of the migration of Javanese to North Sumatra which are connected to the socio-political conditions of the province itself.

The Javanese, like many ethnic groups of Indonesia, prefer living among their own relatives, villagers or similar ethnic background and would rather live in their native places (desa asal) to in other areas. This is encapsulated in the Javanese phrase which says: Mangan ora mangan asal kumpul, and means "whether there is any food or not, we should live together." This clearly emphasizes the principle of kin and ethnic togetherness which means that many Javanese, particularly in peasant communities, are reluctant to migrate to other areas even to find a better life and in many cases, destitution and starvation itself cannot force Javanese to leave their villages voluntarily. However, some Javanese have moved outside Java through resettlement (transmigrasi) programs, labor recruitment policies or job placement within the civil service and army,¹¹ Because of the Javanese cultural inertia to move, the recruitment of transmigrants for transmigration programs launched by the Dutch and Indonesian governments has emphasized the recruitment of participants from the same village in Java (*bedhol desa*) and are settled the same transmigration sites and to make them more comfortable, they are then allowed to name these sites after their villages in Java. Various Javanese cultural items such as a set of Javanese *camelan* (Javanese music instruments) and *wayang kulit* (shadow puppets) are also provided. It is then hoped that Javanese transmigrants will feel comfortable in their new environment

The same policy was carried out by the Dutch planters in recruiting Javanese workers to work on North Sumatran plantations. To help indentured laborers to feel *tentrem*, they were housed within the same area on the plantations, and deliberately isolated from the rest of local society. Some Javanese cultural items such as the *gamelan* were also provided. Because of the nature of plantations, which ara geographically isolated from other

¹¹ It cannot be denied that there are a number of Javanese who migrated to other areas voluntarily, but the majority of Javanese, especially peasants, are still reluctant to move to areas outside Java.

areas, the Javanese workers who remained soon adopted the plantations as their villages. As a result, in the present day in North Sumatra, Javanese make up the majority of plantation workers as well as the population of kampong areas on the outskirts of plantations.

Sociologically, the plantation (*kebon*) area is the only place in the region where the Javanese are the majority ethnic group. The majority of Javanese workers, particularly the new generation, were born and socialized on plantations. They do not know their parents' native villages in Java, so for them the plantation areas is their only village. It has become the new Javanese *desa* (Javanese native villages) for Janavese indentured laborers and their descendants. In these villages they are able to live much as Javanese do. They communicate in Javanese and follow various Javanese traditions including the *slametan* ritual. Javanese *Ngoko* (low level Javanese) is the dominant language used among members of plantation communities. It is therefore, the plantation is regarded as a *tentrem* place to live.

From a Javanese cultural point of view, the concept of *tentrem* is also related to notions of place and life goals. These notions have been described as a series of concentric circles progressively moving from a "sacred" core (negara agung), to a profane sphere (tanah sabrang). Traditionally, the area considered as the "sacred" core is the *negara agung* i.e., the central administration of Javanese kingdoms (Yogyakarta and Surakarta). The *negara agung, manca negara* and *pasisir* are located on the island of Java and which are consecutively less sacred. Other areas outside the island of Java are each known as *tanah sabrang* (see Selo Soemarjan, 1961, Moertono, 1963; and Anderson, 1972). In a broad sense, however, Javanese consider the *negara agung, manca negara* and *pasisir* to be Java and the area beyond Java are *tanah sabrang*. A *tanah sabrang* is considered the most profane or base area, and the least *tentrem* place to live. The *tanah sabrang* is though to be *negara butho* (giant country or uncivilized society), the place where people live in a disordered way, where there is no *tentrem* and no harmonious existence.

Javanese plantation workers are influenced by the aforementioned structure of thought in judging the social environment of their migration areas. Javanese workers consider the *emplasmen* (center of plantation administration), the *afdeling* (working unit) and the periphery of the plantation (kampong) to be the *kebon* or inner area. The areas beyond plantations are the *luar kebon* or outer areas. Javanese workers regard the *kebon* area as *tentrem* while the *luar kebon* areas are not. The society of the *kebon* is considered to be *halus* (civilized, refined) whereas the *luar kebon* area is considered to be *kasar* (rough, crude). A Javanese plantation worker described this view as follows :

"We Javanese, consider plantations as our villages, even though initially our ancestors came here as migrants. But since the majority of us do not know our ancestors native villages in Java, we finally have adopted plantation (*kebon*) areas as our native villages. In these areas we maintain Javanese traditions, even though they are probably not entirely the same as traditionscarried out in Java. *Kebon* areas are Javanese villages, which are different from *luar kebon* areas. We feel *tentrem* living here because we live among people from the same ethnic group. It is easier to maintain a *tentrem* life among us than by living with other people in *luar kebon* areas because of our different cultures and traditions. Most of the people who live outside of plantations are rough (*kasar*) and bad mannered (*tidak tahu adat*)".

CONCLUSION

From this brief discussion it can be concluded that Javanese workers continue working on plantations generation after generation because they consider that plantations are the only *tentrem* places to live and *luar kebon* areas are not *tentrem*. This judgement is based on the way of thought of the workers which is influenced by Javanese culture and their interaction with plantation environment.

For the workers a plantation is not only a place to make a living, but it is also a place to raise and educate their families and to achieve their dreams. Since most contemporary North Sumatran plantation workers were born and raised in or around plantations, they consider the plantation their "home". It is therefore, the plantation is regarded as a *tentrem* place to live. This consideration is one of factor that encourages plantation workers to continue working on plantations generation after generation.

BIBLIOGRAPHY

Algemene Rijks Archief – The Hague

- 1934 "W. Ph. Coolhaas: Memorie van Overgave van den Controleur van Padang en Bedagai, 10 May 1933 – 10 April 1934". Unpublished report.
- Anderson, Benedict R. O.G.
 - 1972 "The Idea of Power in Javanese Culture", in Claire Holt (ed), *Culture and Politics in Indonesia.* Ithaca: Cornell University Press.

Broersma, R.

1922 Ooskust van Sumatra, vol. II, De Ontwikkeling van het Gewest. Deventer: Charles Dixon.

Dootjes, F.J.J.

1938 "Deli, the Land of Agricultural Enterprises" in *Bulletin of the Colonial Institute of Amsterdam*, 2 (1) November, 45 – 54.

Ellen, Roy

1982 *Environment, Subsistence and System.* Cambridge: Cambridge University Press.

Fakultas Ekonomi, Universitas Sumatera Utara.

1982/3 Penelitian Syarat-Syarat Kerja dan Kondisi Kerja Buruh Perkebunan di Sumatera Utara. Medan: Lembaga Riset dan Pengabdian Masyarakat, FE-USU.

Ginting, Meneth and Ruth Daroesman

1982 "An Economic Survey of Rural Development in Java", in *Bulletin of Indonesian Economic Studies*, 18 (3).

Gordon, Alec

1982 "Indonesia, Plantation and the Post Colonial Mode of Production", in *Journal of Contemporary Asia*. 2 (12).

Guinness, Patrick

1986 Harmony and Hierarchy in a Javanese Kampung. Singapore: Oxford University Press. Hotchkiss, H. Stuart

1974 "Operation of an American Rubber Company in Sumtra and the Malay Peninsula", in *the Annals of the American Academy* of Political and Social Science, 112 (201).

Klosterboer, W.

1960 *Involuntary Labour Since the Abolition of Slavery.* Leiden: E.J. Brill.

La Motte, Ellen N.

1924 The Ethics of Opium. New York: The Century Company.

Lulofs, Madelon

1936 *Coolie.* New York: The Viking Press.

Modderman, P.W.

1929 Gedenkboek t.g.v. Vijftig Jarig Bestaan van de Deli Planters Vereeniging. Batavia: G. Kolff & Co.

Moertono, Soemarsaid

1968 State and Statecraft in Old Java. Ithaca: Cornell Modern Indonesia Project, Cornell University.

Moos, Rudolf H.

1976 The Human Context: Environmental Determinants of Behavior. New York: John Willey & Sons.

Moran, Emilio F.

1984 The Eqosystem Concept in Anthropology. Boulder: Westview Press, Inc.

O'Malley, William Joseph

1977 Indonesia in the Great Depression: A Study of East Sumatra and Jogjakarta in the 1930's. Ph.D. thesis, Cornell University.

Pelzer, Karl J.

1978 Planter and Peasant: Colonial Policy and the Agrarian Struggle in East Sumatra, 1863 – 1945. 'S-Gravenhage: Martinus Nijhoff.

Reid, Anthony

^{1970 &}quot;Early Chinese Migration into North Sumatra", in Jerome Ch'en and Nicholas Tarling (ed) *Studies in the Social History* of China and South-East Asia. London: Cambridge University Press.

Sack, Robert D.

1983 "Human Territoriality: A Theory", in *Annals of the Association* of American Geographers 73 (1), 55 – 74.

Scott, James C.

1976 The Moral Economy of the Peasant: Rebellion and Subsistence in Southeast Asia. New Haven: Yale University Press.

Stoler, Ann Laura

1983 *"In the Company's Shadow: Labor Control and Confrontation in Sumatra's Plantation History, 1870 – 1979".* Ph.D. thesis, Columbia University.

Thalib, Dahlan

1962 "The Estate Rubber Industry of East Sumatra", in Douglas S. Paauw (ed), Prospect for East Sumatran Plantation Industry: A Symposium. New Haven, Southeast Asian Studies, Yale University, 50 – 66.

Willoughby, W. W.

1925 *Opium as an International Problem.* The Geneva Conferences. Baltimore. the Johns Hopkins University Press.

OTHER SOURCES

Tabak : tabakscultuur en Tabakproducenten van Nederland Indie. 1925 Weltevreden, Landsdrukkeij.

Verslag Betreffende de Opium – en Zoutreqie end de Zoutwinning over het Yaar 1943.

1935 Batavia, Landsdrukkerij.

4.4. THE REALITY OF PEOPLES, THE MYTH OF LAW

Reflections on Law, Culture, Indigenous Peoples and Environment in the Philippines

By : Prof. Marvic M.V.F. Leonen¹

"Every part of the earth is sacred to my people. Every shining pine needle, every sandy shore, every mist in the dark woods, every clearing and humming insect is holy in the memory and experience of my people."

A Duwarmish Chief

I

An Introduction

If it were possible for me to condence in one word the lessons we have learned from working with indigenous peoples, I would say that word is perspective. The result of four years of legal advocacy with and among rural peoples have convinced us that law is very much a product as well as a part of culture. It has provided us with a different worldview in using the law. Situations of intense and imminent conflict have forced us to come to terms with the myth of law and the reality of peoples as well as their cultures. It has convinced us that if we were to contribute to the protection of the environment — to the dialogue which will produce sustainable development, then we should see the lawyer now more as a participant in finding strategies better suited to achieve democratic, ecological and culturally appropriate ways of living than that of an authoritative agent of an antiquated and colo-

^{1.} Executive Trustee, Legal Rights and Natural Resources Center, Inc. — Kasama sa Kalikasan — Friends of the Earth Philippines (LRC); Executive Director, Sentro Para sa Tunay na Repormang Agraryo Foundation, Inc. (SENTRA); Assistant Professor of Law, Colle ge of Law, University of the Philippines — Philippine Indigenous Law, Agrarian Reform, Criminal Procedure, Civil Procedure, Legal Profession, Supervised Legal Research; Vice Coordinator for Internal Affairs — Free Legal Assistance Group, NCR Chapter; Member IBP National Legal Aid Committee.

nially inspired political system.

Ironically, we find ourselves humbled by the inadequate way by which our legal, and thus, our political system, addresses the concerns of indigenous peoples.

It is therefore with a sense of humility and great pride and honor that I speak before you today about the treatment of our society of indigenous peoples and how it misses on opportunities to harness culture in the service of a better environment.

Allow me to start with a few clarifications.

Culture however has better uses. It is functionally defined as "a historically derived system of explicit and implicit designs for living, which tends to be shared by all or specially designated members of a group."¹ Cuture is, among other things, a set of ready-made definitions of the situation which each participant only slightly retailors in his own ideomatic way. It provides thought grooves from which to perceive a problem and devise solutions. In a word, it presents perspectives.

The more diverse the cultures recognized in a society, the more diverse perhaps the solutions which we can give to our more pressing crises. The more diverse the solutions presented and actually considered, the better for what Holmes considers as the "marketplace of ideas" to arrive at the truth.

These universal aspirations are reflected as the foremost principle of the Constitution. It provides that :

"Sovereignty resides in the people and all governmental authority emanates from them."²

¹ Kluckholn and Kelly, "The Concept of Culture," 221, 241 (1945) in Freilich, The Pleasures of Anthropology.

² Const (1987), Article II, Section 1.
The word "people" is unqualified. There are no adjectives which say that sovereignty resides in the rich people, or those formally educated, or even those appointed or elected to governmental positions. The clear constitutional implication, is that every Filipino citizen is a co-sovereign. The assumption is that each citizen, each grouping, each peoples within our state has potential to contribute to nation-building, which includes the betterment of his or her community and region.

We have failed to give meaning to this concept of democracy. In fact, we could rightly and justly say that this has been perverted by our legal system.

Playing upon the learned helplessness of many, we have imposed our own political system borrowing from an alien culture. Our colonizers, with the consent of some of our ancestors, have played upon concepts such as "indios" and "principales" "cultural minorities" as differentiated from their "christianized brothers."³ As William Scott observed:

> "I have always rejected the term "cultural minorities". because it seems to divide the Filipino people into two groups — — the majority and the minority . . . I consider it harmful for two different reasons . . . In the first place, human nature being what it is, it invites exploitation of the one group by the other and is therefore inhumane, un-Christian, and bodes ill for the development of a healthy republic in the archipeleago. And in the second place, it disguises the real division of the Filipino people into two groups — the rich and the poor, the overfed and the undernourished, those who make decisions and those who carry them out . . . "⁴

For sure there have been clearer examples of these historically created and colonially inspired prejudices finding its way into our official legal system. Rubi v. Provincial Board for instance referred to the Mangyans of Mindoro as being "backward, primitive and barbaric."

³ See also Lynch, Owen, Jr., "The Colonial Dichotomy: Attraction and Disenfranchisement," 63 Phil. L. J. 112 (1988).

⁴ Interview statement by Dr. William Henry Scott, Sagada, 29 May 1986.

In another unfortunate development, the Philippine Court leaned over backwards and placed judicial imprimatur on government action discriminating against a cultural minority in the case of People v. Cayat.⁵

> "... Under challenge was Act No. 1639 which made it unlawful for any native of the Philippines who was a member of a non-Christian tribe to possess or drink intoxicating liquor, other than native liquors. In upholding the constitutionality fo the Act, Justic Moran ruled that the legislative classification was "unquestionably reasonable" because it was designed to insure peace and order among non-Christian tribes. But to burden someone because of his status as a member of a cultural minority runs counter to the most fundamental concept of equal protection. The use of the rational relationship test in this case resulted in a decision which today would be considered distesteful...."⁶

Fortunately Act No. 1639 has already been repealed by Com. Act No. 479 but the judicial imprimater remains.⁷

The official distinction between non-christianized tribes and those westernized as well as the cultural minorites and those already in the mainstream was not merely out of ignorance. It was designed for a purpose: to disenfrachize as many of the Filipino population as possible so that the latter can remain malleable to the wishes of its Spanish and American Colonizers. Owen Lynch, in reviewing the early American Era in our country came to the same conclusion:

> "... The non-Christian tribes policies were not established with the well-being of un-Hispanicized peoples foremost in mind. Rather the politices provided a necessary political counterweight to Taft's policy of attraction. They also enabled the colonial regime to further disenfranchise many rural peoples form their political and economic rights. Perhaps most troubling,

6 Defensor-Santiago, Mirriam, "The 'New' Equal Protection," 63 Phil. L. J. 1, 21 (1983)

7 See evolving concept of "suspect classes" in equal protection litigation. San Antonio Independent School District v. Rodriguez, 411 U.S.1, 28 (1973), Korematsu v. United States, 323 U.S. 214 (1944) and Loving v. Virginia, 388 U.S. 1 (1967).

^{5 68} Phil. 12 (1939).

the policies promoted the polarization of the Philippine peoples. They buttressed an enduring belief among Filipino elites that non-Christian tribes were pathetic and pitiable peoples who had little in common with their more urbane and wealthy countrymen, and who had little, if anything, to contribute to nation-building."

No wonder that the indigenous peoples here in the Philippines refuse to be called "cultural minorities." The truth is that they have a lot to contribute -- if only government could transcend these built in historical prejudice.

11

How does our legal system fail to harness culture in the service of the service of the environment? Firstly, by marginalizing culture itself. Secondly, by failing to articulate these ideas into its own laws.

There are several ideas that seem to have been outlawed by the culture of the Philippine Legal profession. One of such ideas is the necessity of disrobing the law of its apparently majestic but often misleading aura of impartiality and objectivity.

Ironically, these "delusions" are made evident by the experiences of those who have to accept and live out the law, right or wrong, as a fact of life. Those who are unitiated in the myth and intricacies of formal legal reasoning are quick to point out their irrelevance. The experience of our indigenous peoples in dealing with our present law on Natural Resources and the Environment is a case in point. The Bontocs and the Kalingas for example, the latter being represented by its leaders which included Macli-ing Dulag, in refusing the offer of Sen. Jose W. Diokno to take up their case against the Chico dam project in the Philippine Courts, had this to say:

> "... If we accept, it will be as if we ever doubted that we belong to the land; or that we question our ancient law ... If we accept, it will be recognizing what we have always mistrusted and resisted. If we accept, we will then be honor-bound to abide by the decisions of that tribunal. Long experience has shown us that the outsiders' law is not able to understand us, our customs

and our ways. Always, it makes just what is unjust, right what is not right."⁸

For me, this statement eloquently underscores the basic problem of our legal system, at least, in so far as it affects our natural resources and environment, in relation to indigenous poeples -- it makes "just what is unjust" and "right what is not right."

We are indeed privileged to have been invited to speak before you. The Legal Rights and Natural Resources Center, being a public interest policy oriented legal firm, wishes to take this opportunity to examine the present legal institutions existing in oru country and its inability to check continuing forest destruction. More specifically, we wish to point out that the present government, given the current legal environment, will have grave difficulties to actualize its commitment to a truly sustainable and participative development. Without involving the actual forest occupants, especially those who have been there since time immemorial, any government program is bound to fail. Involvement of indigenous peoples on the other hand can never be successful without the genuine recognition of their cultures, their resource management processes and their indigenous land tenure system.

The concept of ownership

Allow me to start with a very important concept. Our official concept of ownership.

There is nothing necessary or natural in ownership as it is understood now under our Philippine Legal System. Law is a creation of culture. It is an objective cultural and historical expedient.

The concepts of property and ownership furthermore arise and take shape not because of any physical or material attribute of the thing being owned. Rather, these concepts are reflections of human associations in

⁸ Cited in Pagusara, "The Kalinaga III : Cultural – Ecological Reflections on Indigenous Theoria and Praxis on Man-Nature Relationship" in Cordillera Consultative Committee, eds., DAKAMI YAN NAN DAGAMI: PAPERS AND PROCEEDINGS OF THE FIRST CORDILLERA MULTI SECTORAL LAND CONGRESS 30 (1983).

relation to things.⁹ In other words, specific cultures create their own set of property relationships. The fact that two different cultures may have their own regimes of property is best exemplified by the contrast of property as we, lawyers, know it and as it is perceived among the indigenous peoples.

Ownership is defined in our laws by Art. 427¹⁰ and 428¹¹ of our Civil Code. Ownership is understood as either : "... the independent and general power of a person over a thing for purposes recognized by law and within the limits established thereby," or "a relation in private law by virtue of which a thing pertaining to one person is completely subjected to his will in everything not prohibited by public law or the concurrence with the rights of another."¹² Moreover, ownership is said to have the attributes of jus utendi, fruendi, abutendi, disponendi et vindicandi.¹³ One therefore is said.to own a piece of land when he exercises, to the exclusion of all others, the rights to use, enjoy its fruits and alienate or dispose of it in any manner not prohibited by laws.

Among the indigenous, unwesternized or unhispanicized Philippine population, there is no such concept of individual and exclusive ownership of land. There are variations among ethnolinguistic groupings,¹⁴ but a fair synthesis of these indigenous concepts of land is as follows:

⁹ See Ely, "Property and Contract in their Relation to the Distribution of Wealth," in Cohen and Cohen (eds.), READINGS IN JURISPRUDENCE AND LEGAL PHILO-SOPHY 8 (1953). He remarked: "But what has been said about the subserviency of things to persons does not carry us very far. We find this — that things exist for the sake of persons; we find established a human control over things. But the essence of property is more than this. The essence of property is in the relation among men arising out of their relation to things. Note 5 at 10.

¹⁰ Art 427. Ownership may be exercised over things or rights.

¹¹ Art. 428. The owner has the right to enjoy and dispose of a thing, without other limitations other than those established by law.

The owner has also a right of action against the holder and possessor of a thing in order to recover it.

¹² II Tolentiono, CIVIL CODE OF THE PHILIPPINES 42 (1983) citing Filomusi, Scialoja and Ruggiero.

¹³ Id., at 43 citing Sanchez Roman.

¹⁴ See for example Brett, Bontok Land Tenure, (1984); Pagusara, "The Kalinga Ili: Cultural-Ecological Reflections on Indigenous Theoria and Praxis of Man-Nature Relationship, "and Pawid," Indigenous Patterns of Land Use and Public Policy in Benguet," in Cordillera Consultative Committee (eds), DAKAMI YA MAN DAGAMI: PAPERS AND PROCEEDINGS OF THE FIRST CORDILLERA MULTISECTORAL LAND CONGRESS (1983).

"... Ownership" more accurately applies to the tribal right to use the land or to territorial control. Ownership is tantamount to work. If one ceases to work, he loses his claim to ownership. At best, the people consider themselves as "secondary owners" or stewards of the land, since the beings of the spirit world are considered as the true and primary or reciprocal owners of the land.

"Property" usually applies only to the things which involve labor, or the things produced from labor.

"Communal" as a description of man-land relationship carries with it extra connotations that the land is used by anybody, but actually, is limited only to the recognized members of the tribe, and is a collective right to freely use the particular territory.

There is also the concept of "trusteeship" since not only the present generation, but also the future ones, possess the right to the land."¹⁵ (underscoring supplied).

The former concept, based on the Civil Code and in relation to other laws, would treat land as a thing that can be owned. The indigenous concept of the ownership of land is something closer, though not identical, to the status of things not considered as a commodity, such as air and water.

The second concept is as valid as the first. Indigenous property relations are therefore as valid as that conceived by our national legal system. There is no single, natural or necessary concept of ownership. Again, concepts respond to the necessities and to the history of particular forms of human associations in which they are imposed or from which they originate.

The "relevance" of legal issues: Carino revisited

If particular human associations evolve unique property relationships for its survival, then any law which would seek to protect that association should recognize and protect these internal property relationships. When an externally imposed law merely insists on its own conception of property rights, the legal issues raised and the resolutions reached in every ordinary

¹⁵ Cordillera Studies Program. Land Use and Ownership and Public in the Cordillera, 29-30.

problem will, to a certain extent, be either irrelevant and/or often oppressive to the societies affected.

This has been the trend in Philippine law since as far back as we can remember.

Let us take Carino v. Insular Government¹⁶ for example.

The operative facts from which the legal issues arose were found by the court to be as follows :

"... The applicant and plaintiff in error (Mateo Carino) is an Igorot of the Province of Benguet, where the land lies. For more than fifty years before the Treaty of Paris, April 11, 1899, as far back as the findings go, the plaintiff and his ancestors had held the *land as owners*. His grandfather had lived upon it, and had maintained fences sufficient for the holding of cattle, *according to the custom of the country*, some of the fences, it seems, having been of much earlier date. His father had cultivated parts and had used parts for pasturing cattle, and he had used it for pasture in turn. *They all had been recognized as owners by the Igorots*, and he had inherited or received the land from his father, *in accordance with Igorot custom*. No document of title, however, had issued from the Spanish crown ... In 1901 the plaintiff filed a petition, alleging ownership"¹⁷.

In a paper written by the Cordillera Studies Program,¹⁸ they point out that the Ibaloi, to which ethnolinguistic group Mateo Crino belonged, had no concept of exclusive or alienable ownership. They did not "own" land as one owned a pair of shoes. Instead, they considered themselves *stewards* of the land from which they obtained their livelihood. During the early part of Benguet's history however, a few of the *baknang* (rich) mined gold which was then exchanged for cattle. This resulted in the establishment of pasture lands. Later, to prevent the spread of the rinder pest disease, cattle owners set up fences. It was only with the erection of these fences that new concept of rights to land arose.

^{16 41} Phil. 935, 212 U.S. 449 (1909).

¹⁷ Id., at 936 - 937. Underscoring supplied.

¹⁸ op cit, p. 26.

The real factual circumstances, the evidence of which may have not been appreciated by the court, are significant in that the exclusive right to use the land — ownership as we understand it — was only a relatively new development and which by custom applied only to pasture land.

The court focused only on the issue: "whether plaintiff (Carino) owned the land."¹⁹ It did not focus on the kind of property ternure Mateo had with respect to the kind of land involved. The law, which the judge was implementing, was simply not equipped to assist him discover this important point.

It is conceded that Carino carved out a doctrine which is advantageous in so far as it assists in the creation of an exception to the Regalian Doctrine and perhaps recognizes certain legal rights to these peoples. Lynch observes that:

"... Carino remains a landmark decision. It establishes an important precedent in Philippine jurisprudence: Igorots, and by logical extension other tribal Filipinos with comparable customs and long associations, have constitutionally protected native titles to their ancestral lands."²⁰

The ruling, however, is so broad that when used indicriminately as the sole ground to recognize and protect ancestral domains it will work a contradiction.

Carino ruled that :

"... When as far back as testimony or memory goes, the land has been held by *individuals* under a claim of *private ownership*, it will be presumed to have been held in the same way from before the Spanish conquest, and never to have been public land."²¹

At the same time that it provides an avenue to protect "native titles", it opens the floodgates for enterprising lowlanders to take advantage of the uplanders' legal ignorance. Their land becomes as alienable as any other

^{19 41} Phil. 935, 938.

²⁰ Lynch, Owen J., "Native Title Private Right and Tribal Land Law : An Introductory Survey," 57 PHIL. L. J. 268, 278 (1982).

^{21 41} Phil. 935, 941. Underscoring supplied.

property as conceived by the national legal system.

Alienation of lands is customarily under some conditions, depending upon the nature of the land and the circumstances of the transfer. Fernandez mentions the following as necessary:

- (1) The transfer must be to one belonging to the cultural community,
- (2) The transferee must also undertake personal cultivation,
- (3) The compensation must be adequate and
- (4) The transaction must be approved by the community.²²

Present Philippine laws do not have the sophistication to recognize these conditions.

The attempt to entrench Carino as a statutory doctrine

The subsequent attempts at statutory articulation only worsened the situation.

The first Public Land Act²³ contained a substantially similar provision as to what is now Section 48 (b) of Com. Act No. 141. Amendments to the foregoing section on judicial confirmation of imperfect or incomplete titles were introduced by Senator Manahan through Rep. Act. No. 3872. The applicability of this provision was extended until the year 2000 by the recent Rep. Act No. 6940.

The foregoing provisions seem to build on the Carino doctrine. The truth is that its concept is totally different.

First, unlike Carino, the provisions do not require possession by individuals under a claim of private ownership for "as far back as testimony or memory goes." A mere thirty (30) year possession is sufficient.

²² Fernandez, "The Legal Recognition and Protection of Interests in Ancestral Lands of Cultural Communities in the Philippines" in UGAT eds., HUMAN RIGHTS AND ANCESTRAL LAND: A SOURCEBOOK (1983).

²³ The first Public Land Act was Act No 926 (1903). This was subsequently amended by Act No. 2874 (1919) and Com. Act No. 141 (1936).

Second, Carino establishes the precedent that native title is "presumed never to have been public." Sec. 48 of Com. Act No. 141 starts from the presumption that the land is initially part of the public domain.

Like the Carino ruling however, the concept of ownership remains. Thus, it is no wonder that the legal controversy which arose out of this provision concerns not the tenurial patterns of indigenous peoples but whether title vests even before judicial confirmation after the lapse of 30 years or whether the land becomes private only after judicial recognition.²⁴ The prevailing rule is that a lapse of thirty (30) years of adverse possession is enough to vest title ipso facto. Judicial confirmation is only a formality. This right however, only applies to lands classified as public agricultural land in spite of the wording of Sec. 48 (c).

For a member of any of the indigenous, unwesternized and/or unhispanized ethnolinguistic groups within lands of the public domain classified as agricultural, Sec. 48 as well as Director v. Acme and Director of Land Management v. CA provide additional security aside from native private title as provided for by Carino. He or she can therefore validly claim that he/she "owns" a certain parcel of land which he holds under all the conditions provided for in the said statute. His "native title" could therefore be invoked against any lowlander who would seek to usurp him of that right.

These rights, however, can work against him -- or more particularly against his culture -- in two ways.

First, the recognition of "native title" has served to make his land alienable in every sense provided by the national legal system. Its disposition is not confined only to members of his kin or of his village. Furthermore, if the nature of the land is such that it would have been communal under customary law, then it can now be alienated, not by the whole village or kin benefitting from a fallow, but by any enterprising member of the village. An Ibaloi can actually sell his land to a foreigner, just as Mateo Carino did in 1909. Ironically, while seemingly reiterating "native" right to ancestral land,

²⁴ See Suzi v. Director of Lands, 48 Phil. 425, 428 (1925); Lacaste v. Director of Lands, 63 Phil. 654 (1936); Mesina v. Vda de Sonza, 108 Phil. 251(1960); Manarpaac v. Cabanatan, 21 SCRA 743 (1967); Miguel v. Court of Appeals, 29 SCRA 760 (1969); Herico v. Dar, 95 SCRA 437 (1980); Director of Lands v. Acme Plywood and Veneer, 146 SCRA 509 (1986); Director of Land Management v. CA, 172 SCRA 455 (1989). The prevailing rule is summarized by the last two cited cases.

the decisions make it possible for a private corporation to acquire the land from the indigenous holder. This is what happened in the Acme case. One need only be reminded of the objections of the Cordillera peoples on the Cellophil and Chico dam project to realize the injustice that this will work on them.

Secondly, the awareness of the rights provided by the "outsider's laws" will definitely be a tempting opportunity for a member of the community to treat land, not as something that sustains life and that should be revered, but as a commodity that could be sold for profit. In both cases, the culture that had sustained them, producing both the dynamic for change and continuity with their past so essential for their survival, will slowly be undermined. We all stand to lose from this debacle.

The bias against indigenous concepts of ownership

A cursory examination of some of the other laws applicable to indigenous concepts of ownership the constitution notwithstanding.

The concept of a private right is defined in the Revised Forestry Code as follows :

"... Private right means of refers to *titled rights of* ownership under existing laws, and in case of national minorities to rights of possession existing under this Code, which possession may include places of abode and worship, burial grounds, and old clearings."²⁵

Although the recognition of this private right "reflects a long established legal precedent : prior occupants of public land have first priority to any titles, leases or permits subsequently applied for" ²⁶ it still effectively excludes certain types of "ownership" over a large part of the ancestral domain. The Kalinga for example, would "own" the residential area, the sacred shrine, the burial grounds, and possibly the rice terraces. The orchards and forests are excluded and belong to the public domain since they are "plantations of forest and trees of economic value." Furthermore, the

²⁵ Sec. 3 (mm), Pres. Dec. No. 705 as amended by Pres. Dec. No. 1559 (1978).

²⁶ Lynch, supra., at 296 citing Royal Decree of October 15, 1874; Sec. 16, US Act of Congress of July 2, 1902; Sec. 95, Corn Act No. 141 (1936); Art. 429, Civil Code; Rep. Act No. 3985 (1964); Sec. 3 (g), Pres Dec. No. 1414 (1973).

cultivation of the uma (forest) would be prohibited.²⁷

A large part of the ancestral domain is expressly excluded by a provision of the same Decree which states that :

"... No land of the public domain eighteen per cent (18%) in slope or over shall be classified as alienable and disposable, nor any forest land fifty per cent (50%) in slope or over, as grazing land.

Lands eighteen per cent (18%) in slope or over which have already been declared as alienable and disposable shall be reverted to the classification of forest lands . . . to form part of the forest reserves . . . that them public interest so requires, steps shall be taken to expropriate, cancel defective titles, reject public land application, or eject occupants thereof."²⁸

It is obvious that in Gran Cordillera, which is so mountainous, virtually all populated areas under this provision are inalienable and indisposable, such that land can not even be "owned" by the inhabitants thereof !

Conclusion

Given this legal environment, it is not surprising that most of our lawyers with this advocacy will say that their practice is at best, challenging; at worse, downright frustrating.

The law sifts through the operative facts of a given problem to separate those which it considers as legally relevant and those which it believes to be irrelevant. The implementors and interpreters can only rely on what the legal codes and judicial interpretations tell them. What if, as in such cases, the law fails to recognize indigenous land tenure systems ?

The challenge for us is to look for creative solutions from what the legal texts provide and to lobby for reforms. But creative solutions can only go as far as the text provides. In a country where private documented individual and alienable property is so much a part of the official legal system, creative uses of existing precedents and legal texts can only create defensive

²⁷ See Cordillera Studies Program, supra., at 33. See also Pagusara, supra.

²⁸ Sec. 15, Pres. Dec. No. 705 (175) as amended by Pres. Dec. No. 1559 (1978). An eighteen per cent classification means that the land rises 18 meters high for every 100 meters run. This would mean an angle of about 10.2 degrees.

strategies. What we genuinely need at the moment is a clear commitment Full recognition and protection of indigenous resource management strategies, common property and land tenure systems. Nothing less than genuine and appropriate indigenization of our property laws.

I genuinely feel that now is the time to be revolutionary. The much vaunted EDSA revolution in 1986 was not enough. Many of us now believe that it has been betrayed. If we are to remove the shackles of antiquated concepts that have failed to preserve our ecological stability, then we must be willing to step back and look at these legal concepts from different perspectives. For us Filipinos, it would mean something as simple as looking back and seeing Filipinos for what we really are.

I am sure that most of us are conscious of the fact that we are very far from the forefront. The safety of distance makes us too verbose for comfort. Somehow we must test our commitment, our courage, and our resolve to meet the issues we are tackling today in its most concrete terms.

Even as I speak, the lines of struggle are being drawn in spite of our legal system, the inertia of our state bureaucracy — and yes, in spite of us lawyers. We see them among the Aetas of San Marcelino in Zambales and in Bo. Burog, Bamban, Tarlac as they continually lobby against a pasture lease. We recognize them among the Bagobos and Manobos around the Mt. Apo Region in Cotabato as they continue to oppose a proposed power plant project. We face them together with the Mangyans of Mindoro threatened with potential loss of their land due to a watershed project. Everywhere, indigenous and long term occupants of our uplands are organizing and mobilizing.

Perhaps, that is where we should also start. Before it is too late. Thank you and good day.

Ref: a/2: indsit.df2 mfl 10.17.91 May 21,1992

5.1. TOWARD A COMMON ENVIRONMENTAL STRATEGY IN A CUL-TURALLY DIVERSE WORLD by: Dr. W.E. Weyns

Today, we are at the eve of the largest United Nations' Conference ever held, the United Nations Conference on Environment and Development (UNCED), starting in Brazil in a couple of days.

This "Earth Summit" as UNCED has been nick-named is in fact the second United Nations' Conference related to the Environment, exactly 20 years after the first one in Stockholm, 1972. A quick comparison of both Conferences reveals a lot about the changes that have occurred in the two decades that separe them:

	UNCHE Støckholm, 1972	UNCED Rio de Janeiro, 1992
Location: Subject: Official participant Other participants (expected) Out-	North Human Environment limited numbers 	South Environment & Development 10,000 Delegates of 150 coun- tries Civil Society: Volages Industry,
come:	not binding principle	Scientists binding Conventions

Nothing is sure about the final outcome of "Earth Summit" but there is no doubt about the overwhelming *complexity* of the negociation process. This complexity is due at least to the three following factors:

- * Firstly, to the steadily increasing complexity of the global environmental problems themselves: climate change, ozone depletion, decreasing biodiversity....
- * Secondly, to the linkage of the environmental with development issues: debt crisis, industrialization of the so called "developing countries", steadily increasing gap between wealthy and deprived peoples....
- * Thirdly, the generally understated intertwining of environmental issues and "cultural background" in the broadest sense, encompassing socioeconomic conditions, lifestyles and mentalities of the people in various parts of the world.

It is the last point I will develop further in my present communication.

1. My first basic statement is that, in spite of strong apparences of a growing unification of the world ("the global village"), we are still living as we always did throughout the long history of mankind, in a culturally multifarous world. Our world of today is still a world of contrasting cultural roots, basic intuitions, practices and lifestyles. I want to illustrate this point with some very schematic comparisons of (wo)man/nature relationships in various cultural traditions. We will also take a glimpse at how these contrasts are revealed through different practices of environmental action groups and movements that are rooted in them.

Islam: the Koran admonishes man to behave as a Viceroy towards nature. The Holy Book stresses social equity, but also the fundamental equality of man and nature. Hence a new evolving environmental ethic can probably be grounded in the Muslim law, the *Shariah*. On this point and more specifically how this might be apparent in the working procedures of the over 600 environmental action groups in this country, I would very much welcome whatever possible elucidations from Muslim scholars and activists here present.

Christianity and secularized Modernism: Christianity is another universal Abrahamitic Religion vested on Holy Scriptures, the Bible. There has been a very profound debate going about the possible links between on one hand the God of the Christians giving man dominance over nature and on the other the actual environment crisis resulting from the industrialization process that originated also in the West. (T1) Personally I have the feeling that reality is far more complex. Within Christianity there are also potential counter-currents, such as the strong Christian environmental reformation movement in Latin America and elsewhere, explicitely referring to Francis of Assisi, the medieval Christian Saint preaching to the birds.

Hinduism: The invitation to this Conference already refers to the environmental awareness of two and a half millenia ago, of which the Holy Book of Hindu Religion, the *Bhagawad Gita* bears testimony. But the very rich environmental movement in the Indian Subcontinent is also very much indebted to *Mahatma Gandhi*, who referred very often to this same Source. The Hindu-religion frankly places (wo)man *in* nature, and through the belief in reincarnation endows every individual with an all-encompassing responsibility towards all living creatures.

Buddhism: Buddhism is very influential on a world scale, and certainly in Asia. Buddhism is often misunderstood by outsiders as leading to a pessimistic or even nihilistic attitude. In reality Buddhism aims at keeping the human wants limited, places the natural environment within each individual, abolishes the separation of individual and his/her social environment. The Bodhisattva ideal of Mahayana-Buddhism postpones personal enlightenment as long as "not the latest single grass be enlighted". I would be very indebted to scholars from Japan if they could explain me the relative weakness of the organized environment movement in their weakness of the organized environment movement in their country, with regard to such very promising cultural heritage indeed.

Useless to stress that this list is far from complete, even for Asia alone: and I have not yet mentioned Confucianism, Taoism, the Arboriginal Cultures....

When I speak about *culture*, I take this word out of the mouth of the anthropologists, meaning culture in the broadest sense. In this understanding, culture is not limited to the fine arts, religion or philosophy, but encompassing all what men produce and do in current life: the whole economy, buildings, institutions, *social relations* and last but not least the *relationship of man/woman with nature* (and to the environment, in a more restricted sense). (T2).

In its milestone report entitled "Our Common Future" publishedin 1987, the World Commission on Environment and Development (WCED) under the presidency of the Prime Minister of Norway, Mrs. G.H. Brundtland concluded that there is no solution to the environmental crisis without simultaneously bridging the gap between the wealthy and the deprived nations, since the wealthy need the active cooperation of all to find workeable solutions. This is a new historic fact indeed.

2. Recently the insight is growing, and that will be my second basic statement, that the social relations; the relations that humans as you and me experience in our daily life greatly determine the relations we have with our natural surroundings. The so called "Cultural theory" of anthropologist

M. Thompson and colleagues is build on the following correspondences: (T3).

"hierarchists" tend to percieve nature as tolerant

"individualists" tend to percieve nature as begin

"egalitarians" tend to percieve nature as ephemeral

"fatalists" tend to percieve nature as capricious

Four myths of nature are thus linked to *four* ways of functioning within human society, i.e. to four ways of (wo)man to relate to his/her fellow (wo)man.

The conclusions of the autors are highly relevant to our topic. They argue that knowledge is socially construed to a great extent, though of course the world cannot be any way we would like it to be. But as long as we don't know everything about the world, and we don't yet, and probably never will, it is our social involvements and institutions, *our cultural roots* (my addition) that lead us to grant credibility to one possible state of affairs rather than another.

3. Here comes my third basic statement: Because there is no complete knowledge insofar, each culture and each sub-culture can nurture a different rationality that will generate its own distinctive engineering aesthetic, its own definition of the good, the beautiful and the socially desirable, its own relations to nature and the environment.

Hence *cultural pluralism* means strength, not weakness, because it is essential for survival. "Divided we stand, united we fall". The three active rationalities, —the hierarchical, the individualistic and the egalitarian—, do structure the world in quite distinctive and (in the right circumstances) complementary ways. As each rationality adapts to the others, so a kind of global, integrated understanding appropriate to the task at hand is generated. This task could be formulated as deciding now in uncertainty about the future.

If this is true for socially based subcultures within each culture, so it is true also for very different cultural units considered as a whole. By this I mean that the world view of a Wall-street dweller in New-York is no doubt very different from the world view of a farmer in the paddies of Bangladesh. But the International Panel on Climate Change (IPCC), -the Scientific Community-, is unanimous that both our city-dweller and paddyfarmer might be swept away in the coming decades by sealevel rise due to global increased greenhouse effect warming.

The environment crisis has since long left the local sphere and has become more and more regional, transborderly, international and global (T4). No single nation how powerful it may be can force a solution. There is no solution except a *global* environmental and development strategy. Moreover the environmental situation is so bad that no mere reformism or superficial corrections can do the job. Drying up the spills around the bath with a floor cloth will not do any longer, closing the tap is the only solution! Informed environmentalists from the famous Worldwatch Institute call for not less than an *"Environmental Revolution"*, as thouroughful as the former "Agricultural Revolution" and "Industrial Revolution".

4. Now I come to my fourth basic statement: although we are in very different starting positions indeed, we are all forced to face the same global environment problem. To enjoy a better life, we need to be sure to keep living.

A good illustration of this fact is given by the way how the multifarous starting positions, e.g. the contrasting socio-cultural settings in India and in the USA yield very different but complementary visions on a solution strategy out of the anthropogenic greenhouse warming of our planet. This is very apparent in the fundamental critique of the 1990–1991 Report of the World Resources Institute, New-York (¹) by the renowned Indian environmentalists A. Agarwal and S. Narain from the Centre for Science and Environment (CSE), New Delhi (²). At stake is the repartition of carbondioxyde (CO₂) and methane (CH_A) greenhouse gases (T5, 6, 7).

Agarwal and Narain vigorously object the "homogenisation" through mathematical equation of quantities of CO_2 emissions, because moral differences in (ab) use and contrasting cultural practices are thus neglected/ abolished. "How can you compare/equate CO_2 of energy--wasting automobiles with methane of paddy fields from subsidence farmers?" they ask. And so it goes for cattle: Cattle means mainly beef to northerners, and hence cannot be equated with cattle in the South, where it means a lot more. Last but not least, both autors critisize the "pseudo-scientific" outlook of the computations in the WRI report, because according to them they are not based on sufficient experimental data. From her side the CSE argues that

"Sinks (absorbing CO_2 , e.g. seabed and forests) are a global 'Commons' of humankind as a whole and hence should be attributed per capita". Starting from the same basic data as the WRI they thus work out a completely different repartition of the CO_2 emission reduction burden for the coming decennia. As a result of their different principles, most so called developing countries have become creditors of CO_2 emissions instead of debtors!

This concrete example illustrates once more the elements of the puzzle:

(a) The fallacy of universalism:

The best outcome we can hope for is *not* to beget one and the same identical and uni-dimensional world-culture, agreeing on all issues and behaving in the same way all over the world. This would in fact mean a terrible stagnation of the human enterprise and, according to most anthropologists most serious drawback on the chances of human survival on Earth. Reducing cultural diversity would be as disastrous to survival as reducing biodiversity.

(b) A plethory of long-lasting international problems:

World trade, debt, poverty, mal-development: all problems that have too long be postponed, are forcing their way back now to the international agenda, as a result of the Global Environment Crisis. Those problems have to be faced now. If we are to share a common future, there has to be first a future for everybody everywhere.

(c) The need for a certain degree of Global Governance:

Even proponents of the "subsidiarity" principle, -what can best be achieved at a lower level of decentralization should so-, have to agree that more and more problems tend to become global. The environment is one of those. There is the very delicate tension between national sovereignity and an "ecological minimum", in analogy with the "ethical minimum" (e.g. basic human rights). In order to enforce global binding agreements, it is hard to imagine how this can successfully been achieved without a certain form of Global Governance. On the occasion of the 50 years' birthday of the United Nations system in 1995 this will no doubt be present on the international agenda.

The key question that comes back in various forms is how to "articulate" the diversity of contrasting cultural roots with a minimal unity, a shared global strategy for the environment and development.

And here I would like to propose to you a scheme developed by A. Naess, the Norvegian theorethician of the radical environment movement that labels itself as "Deep Ecology" (T8). I think it is an highly interesting model that can help us finding a way out of the very pernicious paradox of diversity versus unity.

Naess distinguishes four levels in human rationalizations of behaviour:

- (1) *fundamental premises*, e.g. the Islamic or the Christian or the Buddhist world view....
- (2) general principles for survival, build on a large consensus on a limited number of essential points, e.g. the United Nations' "Charter for Nature" (1986).
- (3) more or less general consequences of the general principles.
- (4) concrete decisions in *practical situations*.
- 5. Naess stresses, -and this will also be my fifth and last basic statement-, that people can broadly agree on a set of principles (2) and disagree greatly on other aspects of ideology (1) or logical derivations (1->2).

To conclude, I would like to read two practical recommendations from this same *apron diagram*:

* Firstly, on the level of the fundamental premises (1), more peace and insight can be gained through an intensification of the inter-cultural dialogue and communications on all levels, in mutual respect. The rule is to make one's own fundamental premises explicit whenever possible. The aim is not to import intellectual resources from foreign cultures to achieve a unique world culture but to gain mutual understanding in the proces. Concrete achievements amidst others are the East-West Center in Hawaii, the Interfaith Ceremony on occasion of the 25th anniversary of the World Wildlife Fund at Assisi in 1986, where official spokesmen of the great world religious traditions made statements about nature, and last but not least the principles and activities of UNESCO itself, e.g. the present International Conference on Culture and Environment at Bogor. * Secondly, binding agreements have to be negociated and enforced on a global level. In order to obtain this, a minimal consensus has to be achieved, and a whole series of related global problems come back to the international agenda. The negotiations are bound to be extremely complex, much more so than the already hyper-complex disarmament talks. Environmental and development funds have to be established and governed. A minimal Global Governance seems necessary. Concrete steps are the United Nations' Charter for Nature, the UNCED starting in a week in Brazil bearing the prospects of the signing of a Greenhouse and a Biodiversity Convention, new funding and competences for the United Nations and eventually a broader reform of the UN system in 1995.

Personally I cannot think of a better formulation for the gigantic task at hand than the device of the Republic of Indonesia: *Bhinneka Tunggal Ika!* ("Unity in diversity").

ANNEXURES:

- T1 Frontispiece from "Leviathan" by Thomas Hobbes.
- T2 World Religions and the Environment, by O. Dwivedi, 1989.
- T3 Four myths of Nature, by M. Thompson et al, 1990.
- T4 Five level model of Environment Problems.
- T5 A global problem: the anthropogenic greenhouse warming.
- T6 Two contrasting world views in the greenhouse.
- T7 Two contrasting anti greenhouse-strategies: CSE/WRI.
- T8 Four levels of rationalization by A. Naess, 1985:

Working towards a strategic unity in cultural diversity.

- 1. WRI, 1990, World Resources 1990-1991: A Guise to the Global Environment, D.U.P., New-York.
- Agarwal, A. & Narain, S. 1991, Global Warming in an Unequal Qorld/ A Case of Environmental Colonialism, CSE, New Delhi.



WORLD RELIGIONS AND THE ENVIRONMENT

LEGENDS

- 1. Man the sovereign
- 2. Man the viceroy
- 3. Man paternalistic
- 4. Man a constitutional partner
- 5. Man an integral partner
- 6. Man an equal partner





T3





Figure 1.3. The myths of nature mapped onto the rationalities.









C.S.E.



T7

1. Fundamental premises



(Courtesy: Arne Naess)

5.2. CULTURE VALUES AND ENVIRONMENT : The Dilemma of Development.

by : J.R.E. Harger UNESCO/ROSTSEA

Introduction

The term "global change" may be understood to cover a wide range of processes from those responsible for the major concern about prospective warming including secondary effects such as ice-cap melting, predicted sea-level rise, changes in vegetation cover, ozone loss and the like, as well as problems associated with the resulting socio-political and cultural responses and with it, the stark reality of the demise of humankind and the obliteration of all potential for the further evolution of consciousness. Of all the problems facing humankind at the present the twin specters of global warming and high-atmosphere ozone loss surely rank as the most severe. Both primarily arise as the direct consequence of industrial pollutants.

Global change is predicted to manifest itself in increasingly obvious ways and we are now led to expect that the sum total of the effects that may be involved will seriously impact individual and collective existence in ways that can only now be confidently predicted that profound and unwelcome changes will be manifest in the natural world. Changes which, unlike those of the previous century, will not be due to the conscious and planned direction of humankind but will rather arise as a series of unhappy consequences to actions that we have already undetaken or to which we are already unwittingly committed.

We have reached a point where the conditions permitting individual and group survival in the modern world dictate continued and obligate exploitation of fossil energy deposits so that with very few exceptions, every move we make contributes to the liberation of previously sequestered greenhouse gases whether the massive release arising from launching space vehicles, which also liberate significant amounts of ozone depleting chemicals, or the more modest contribution from a family car on the way to the grocery store.

Instead of moving into a naturally induced period of cooling, such as was initially prefaced by the "little ice age" of the 17th century, we now

move into an increasingly warmer global regime. Humankind, since the dawn of civilization and particularly over the last few centuries has systematically worked to eliminate the great forests from the face of the earth and to drain the wetlands. In recent times humankind has also been driven to expose and degrade the vast carbon deposits laid down in safekeeping, in part, by those same forests in days gone by and has so opened Pandora's box of carbon based gases and other industrial pollutants such as the nitrogen based gases.

We can now see, that in the geological past occasions resulting in excessive release of carbon dioxide have occurred before and indeed substantially higher periods of atmospheric concentrations of carbon dioxide higher life forms at warmer temperatures than we see today. Such releases may have been occasioned by meteorite impacts or by periodic fires in accumulated organic material. Releases could also have come about as the result of exposure of fossil carbon deposits by the excavations of the massive ice-sheets which then oxidized, by discharge through volcanic action perhaps associated with crustal sub-duction mechanisms or by as yet unknown processes which then resulted in warm interglacial periods. In the case of the current releases however, the farreaching forests which may have subsequently reclaimed and sequestered the carbon gases, and have done so previously in cycle after cycle, have all but vanished at humankind's bidding and we are now presented with an uncertain future as nature herself prepares a response in the form of run-away carbon dioxide increases that will be grimmer than a passing (and at this stage easily controllable) ice-age and will involve permanent loss of tropical rain forests together with the many other forest ecosystems that have already disappeared. The forests and wetlands which formerly replaced the lid on Pandora's box by progressively fixing carbon from the atmosphere, which was then sequestered in safekeeping to be in turn periodically released, perhaps by ice movements, natural fires etc., are now almost gone. In view of existing human population requirements, simple plantation programs can no longer be relied upon to manage carbon storage.

It is apparent that at least four universal courses of action must be implemented immediately in order to rectify the situation: (1) carbon dioxide emissions and related green-house gases must be curtailed; (2) global forests and wetlands world-wide must be managed in a manner that will

ensure a sustainable function in the capture of atmospheric carbon; (3) a course of global environmental management must be undertaken in part by designing and deploying more efficient ecosystems using existing biodiversity and by enhancing ecosystem capacity. to draw-down carbon dioxide on a global scale and by enacting sustainable development practices; (4) high-atmosphere ozone dissolution must be arrested by curtailing disruptive pollutants.

Before anuthing like the required concerted response can take place if will be necessary to construct a new global environmental morality based on the best and most appropriate of the cultural practices that have developed throughout the world where people have come to realize the absolute truth involved with the dependence of humankind on the source of all sustenance, our mother, the earth. This will necessarily involve an adjustment to the concept of development which must in turn become part of a shared global consciousness. For this to take place, something like a new religion must evolve and it must begin to manifest itself this very minute.

Regardless of what actions we are driven to take, the empirical record of carbon dioxide concentrations trapped in the air-bubbles of polar ice over the past 150,000 years together with the more immediate atmospheric measurements, clearly indicate that global change will surely affect each and every person on the planet within the spare of one generation or less. In strict obedience to physical law, these patterns from the past tell us that the mean global temperature is likely to rise by 3-4 degrees centigrade in response to the first doubling in effective greenhouse gas concentrations since the 1800's.

It is no accident that current news-papers are full of "wise sayings" from the mouths of every sort of "industrial apologist" stating that the phenomenon of global warming is merely a theory, something that is far from proven. They would have us believe that the world is full of places some of which are warming and some of which are cooling so that the net result of all this activity is likely zero. In other words, there is no cause for worry and anyone that does so is immediately accused of being a "doomsayer". Where the record points toward warming such as the retreat of glaciers in Irian Jaya, New Zealand and Africa, skeptics insist that this record is "too short" to allow any conclusion. The blunt truth however, is that such assurances are missplaced. Certainly some places are cooling such as New Zealand this past summer where El Nino conditions have brought some of the coolest weather on record, but at the same time Indonesia experienced one of the most extensive droughts ever in 1991 and this was accompanied by the highest mean monthly temperatures records since 1866 in Jakarta. It does not take a genius to figure out that these two items are related and that the increased heating at the equator has dragged cooler air out of the Antarctic to compensate for the warm-air shifts at the equator. As heating proceeds at the equator, the position nearest the sun, so one might well expect increases both positive and negative to take place elsewhere. For instance, New Zealand scientists also currently report that the Tasman Sea has slightly increased in temperature.

Other positive indications of global climate change and associated greenhouse warming in fact continue to manifest themselves and include recently identified ice-melt and break-up in both the Arctic (Nature Vol. 352 July 1991, pp 19-20 and 33-36) and the Antarctic (Nature Vol. 350 March 1991, p 274 and pp 328-330) as well as other unsettling indications of temperature shift such as the seasonal development of conditions favoring wide-spread fires in Kalimantan. The progressively increasing frequency of cyclone activity in the Pacific and the intermittent occurrence of tropical coral reef fishes in the waters of the North Island of New Zealand <0>. Over the past three decades, deep water, > = 2,000 m from the Western Mediterranean Sea has shown a trend of continuously increasing temperatures (9) over a range of 0.12 deg C, presumably due to greenhouse warming.

Is climate change happening?

Remembering that the so called "little ice age" experienced in Europe (1570-1650) was associated with a mean temperature drop of only -0.5 deg C (8), one might therefore inquire into the evidence for temperature change in West Java, a few degrees from the equator where we are gathered today.

Much of the world's climate and in particular that of the Pacific and the southern hemisphere is affected by a giant heat-pump which actively mixes incoming heat into the immense Pacific Ocean as the result of irregular imbalance of heat and mass at the equator in the western Pacific. These results in periodic surges of water from the western margin of the Pacific where a hot-pool accumulates, across to the eastern margin followed by a progressive build-up of hot water again to the west. This is called the "EI Nino — Southern Oscillation" or (ENSO) for short and among other things brings drought to Indonesia and Australia as well as intense warm rains and storms to California and Peru. See Wyrkti K. 1982 for a technical account of the ENSO phenomenon.

For Indonesia, the recent ENSO-associated drought of 1991 led to the failure of 190,000 ha in paddy with an overall 843,000 ha affected. This event caused unprecedented losses in rice production to Indonesia resulting in 600,000 tons being imported to the previously self-sufficient archipelago. In 1982-1983 the ENSO-induced drought resulted in 420,000 ha of paddy being affected and failure of 158,000 ha and was also accompanied by forest fires which burned 3.7 x 10^6 ha mainly in Kalimantan (Borneo), Murdiyarso 1991. For the most part Indonesia enjoys a humid tropical climate except in the eastern most regions, and it presently supports extensive tracts of tropical rain forest apparently emounting to some 108.6 million ha which accounts for some 6% of the global total estimated as 1,838 million ha (Brown and Lugo, 1982).

An area of 88,000 ha of forest also burned in 1991 (Jakarta Post, 30 November 1991) largely in Kalimantan in association with the current ENSO event. Surface fires continue to burn in East Kalimantan as of April 29, 1992 and will expand in the somewhat reduced drought which will take place in 1992 in response to the ENSO conditions carrying forward from 1991

Secular trends in air-temperature West and Central Java

Fortuitously, and thanks to the Dutch administration of the time, airtemperature records from Jakarta exist since 1866 with missing years confined to 1943, 1946, 1947 and 1958. These have been combined with records from Semarang, a relatively small city to the East of Jakarta from the years 1982–1991 inclusive (Figure 1). There is no significant difference between the Jakarta and the Semarang temperatures over this 10 year period indicating that the trend in increasing air-temperature over the period 1866– 1991, 1.64 C⁰, is not influenced unduly by "heat-island" effects. The major industrial development in infrastructure for Jakarta has likewise been apparent only since 1980 or so. Figure 1a shows the distribution of the 1982--1991 Jakarta and Semarang air temperature data.

Temperature patterns

When the temperature records for ENSO years are separated from non ENSO years, it can be seen that the former (Figure 2) are significantly warmer than the latter (Figure 3) on average by 0.16 C⁰ throughout time-frame covered by the data, but the trend towards increasing temperature is consistent for both groups. That is, each group increases in temperature over time and at the same rate. The same relationship holds with respect to the secular change in the mean temperature of the warmest month in the year throughout the record. For both ENSO and non ENSO years a progressive increases is recorded with the former being approximately 0.45 degrees warmer than the latter with no significant difference in the rate of increase between the two as estimated by the slopes of the regression lines relating temperature to time (Figure 4). Overall, up ward shift in temperature of the warmest months over this 126 year record around 2° C.

The minimum values of the mean monthly temperatures recorded throughout the year however, show a slightly different pattern. The slopes of the regression lines relating the minimum monthly temperature to time for the period 1866–1991 cannot be clearly distinguished from each other although the relationship for non ENSO years is slightly steeper (Figure 5). In practical terms, this indicates that the ENSO years exhibit a tendency towards lower minimum temperatures than non ENSO years in modern times. There is no evidence to support such a difference at the beginning of the record where the two groups are virtually identical. A progressive deviation takes place with the coolest months in the non ENSO years warming at a slightly faster rate than similar months in the ENSO years. This means that by the end of the record the temperature minimum experienced by an ENSO year has increased slightly less than that of an adjacent non ENSO year. The relative ENSO year range now increases with time more than the non ENSO range although the annual maxima and minima have moved upwards for both (Figure 6).

A time-adjusted covariance comparison made between the minimum mean monthly temperatures recorded for ENSO and non ENSO years at the point represented by the last year of the recorded data (1991) suggests that the two groups can be currently considered as different at p < 0.05 (Table 1). If only recent data are compared (the last 1/3, 43 years), the difference between the minimum mean monthly values of ENSO and non ENSO years is also apparent (p < 0.05) involving $0.3^{\circ}C$.

The slopes of the regression lines relating the maximum recorded monthly means on an annual basis in relation to time differ significantly for both ENSO and non ENSO years to those of similar lines describing the minimum monthly temperatures (p < 0.001, Table 1).

These data indicate that as warming has proceeded, the behavior of both the ENSO and non ENSO years has changed in a systematic manner over the 126 year data record in a way that involves an increase in annual fluctuations in mean monthly air temperature with the non ENSO years now showing a marginally smaller range than the ENSO group. The possibility of a secular change in ENSO activity was discussed at the UNEP 1991 Earthwatch Global Environmental Monitoring System Workshop on ENSO and Climate Change. Bangkok, Thailand, 4-7 November 1991. Nicholls (1989) and Markgraf et al (1992, in press) reviewed some of the evidence for changes in the behavior of the El Nino – Southern Oscillation due to climate changes and found no strong evidence of major changes over the past 20,000 years.

Atmospheric temperature build-up which may be associated with the greenhouse effect is apparently coupled to an increasingly wider temperature swing in West and Central Java anchored by the ocean-sink. In Southeast Asia, longer dry periods coupled with increased temperatures may thus result from an ENSO-driven mechanism which may force increased equatorial aridity as global carbon dioxide concentrations increase resulting in a change from "ever-wet" conditions. In this regard Figure 7 shows that the length of the dry season in West Java has increased significantly between 1907 and 1991.
The importance of the carbon cycle: a run-down

At present rates of increase, a doubling of CO_2 from pre-industrial levels may be expected to take place sometime around the year 2025 or so. If ozone losses continue and the resultant beta UV radiation depresses oceanic plankton populations the consequent release of carbon dioxide from the world's seas will considerably hasten this process. The beta UV radiation under the ozone hole has been shown to affect phytoplankton production in the Antarctic down to a depth of 25 meters (Smith et al, 1992).

Although individual policy actions which may be undertaken by nations or by regional groupings in an attempt to deal with problems of global change are far from clear some rough conclusions can be drawn at this time. Recent attempts by the UN system to direct the world in adoption of a policy of environmentally sound and sustainable development (ESSD) for further action provides us with a case in point. In a crude sense, we may define ESSD as development which permits further development without terminal closure of larger options. A general approach towards defining the potential for progression of civilization throughout the world has thus been encapsulated in the phrase "environmentally sound and sustainable development" which means that only human actions which permit continued development, with the environment as the final arbitrator, can be considered as fulfilling an acceptable strategy for social activity at all levels and that short-term economic considerations must be relegated to second place.

The challenge at this stage is to elaborate useful models which will permit specification of such action. We know what we should like the phrase "environmentally sound and sustainable development" to mean, but we currently have no clear idea as to how this can be attained in practice although it is now obvious that the control of global climate through management of atmospheric carbon dioxide concentrations must be a major element in such a process and for this it is essential to preserve existing biodiversity.

To control CO_2 increases we need to understand some basic facts about the global carbon cycle. First of all, there appear to be very few carbon sinks. Fixed carbon can accumulate naturally either by carbonate deposition or by photosynthesis to be then sequestered either in the ground or on the shallow sea floor to be covered up for long-term storage. Excluding the liberation of man-made greenhouse gasses such as CFC's etc., the direct effects of respiration as well as certain other specific considerations, the major portion of the anthropogenic liberation of carbon (7-10 gt. C, 1 gt. = 10^9 t. estimated to have been released in 1990) as CO₂ to the atmosphere proceeds by two main mechanisms, either by combustion and oxidation of fossil or recently living organic carbon or by destruction of soil carbon reservoirs through agricultural expansion, particularly where former actively accumulating wetlands are involved. The extent to which both mechanisms are active depends directly on population.

The net terrestrial primary production from plants is estimated at 50-60 gt. C/yr although it is also supposed that this is balanced by an equivalent release due to decay. This sector could be converted to accumulate a significant amount of carbon by planting new trees. The atmosphere currently contains 751 gt. C (353 ppmv CO₂, and 1 gt. C = 0.47 ppmv CO₂), compared to a pre-industrial content of around 550-590 gt. C, a difference of 165 gt. C or so. From 3–3.4 gt. C are accumulated into the atmosphere \cdot currently and that figure grows by around 0.4% annually.

The world's water bodies also constitute a more immediately dynamic sink for CO_2 . Direct measurements are limited by recent empirical estimations of net direct CO_2 uptake by the ocean < 0b, Oc > have suggested a figure of 1.6 - 1.9 gt. C/yr.

The oceans are estimated to contain an immense 36,600 gt. C, the majority of which is in solution, particularly in the oceanic depths. Of the 30-80 gt. C/yr primary production in the oceans, only 0.006-0.7 gt. of this carbon is buried on continental shelves with a further 0.002-0.2 gt. on the slopes and in the deeps. The difference between the 10 gt. C liberated and the amount known to be returned to storage minus the 3-3.5 gt. accumulated in the atmosphere, is relatively small, less than the variation associated with estimates for some of the major partitions (see table 2).

Environmentally sound and sustainable development (ESSD)

The question concerning an operational definition of sustainability has been raised on several occasions prompting repeated declarations to the effect that the wording provided by "The World Commission on Environment and Development" (WCED), "Our Common Future", is appropriate. As part of the concept of "environmentally sound and sustainable development" (ESSD) the WCED < 27 > defines "sustainable development" as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". By itself, the latter statement is unbounded and involves an appeal to "inter-generational equity" with the consequent implicit assumption that the future will somehow be able to take care of itself through increasingly effective and efficient technological adjustments regardless of the quality of available resource base.

The concept of ESSD can thus be re-worded as "environmentally sound development that meets the needs of the present without compromising the ability of future generations to meet their own needs". The phrase "environmentally sound" has intuitive appeal but it does not specify immediately operational or measurable criteria for use as the basis for a quantifiable definition.

Currently, the world population distribution between developed and developing countries is 24 : 76. In the case of energy (electricity) for instance, "needs" specified as "per capita resource use" already span a range, of 40 : 1 for "most developed" to "developing" countries. For liquid hydrocarbons this is 60 : 1, for gasoline alone 390 : 1, for all solid fuels (including wood) 14 : 1. Consumption of copper by the U.S.A. is higher than that of India, on a per capita basis by 245 : 1 and so forth < 28 >. In developed countries there is currently no reason to suppose that percapita resource-use "needs" are leveling off. Likewise, there is no reason to suppose that the per-capita resource-use aspirations of the developing countries will be any less. For the sake of global stability, if for no other reason, environmentally appropriate energy supplies must be found to accommodate the expectations of the developing world.

The major anthropogenic changes in the natural carbon cycle have been made within the last 1000 years or so and have been focused on reduction of terrestrial sinks and expansion of geological sources through the exploitation of fossil carbon with the use of coal expanding towards the end of the "little ice age" < 37 >. In fact a review of forest use since Mesopotamian times (4,700 years ago) < 37 > shows clearly that western civilization has developed by exploiting forests directly for fuel and for construction of infrastructure and the decline of most earlier

development has been directly related to the consequences of deforestation. Current relic stands of cyprus and juniper forests on around the peaks of mountains on the northern side of the Persian Gulf in Iran suggest that region, now an unrelieved desert, was once completely forested.

The ESCAP/UNDP Workshop on implementation of the regional strategy on environmentally sound and sustainable development, 1-5 July 1991, Rayong, Thailand therefore insisted that the concept of "sustainable development" should be more carefully examined in order to provide an operational link between "environmentally sound and sistainable development" (ESSD) and (the) variables used for monitoring, based on strongly stated environmental objectives . . . "to quantitatively evaluate movement towards or away from the goal of ESSD". The workshop also called for the development and strengthening of ESSD performance criteria and indicators.

In a gross sense, the question of specifying "environmentally sound" involves definition of the extent to which the global ecosystems, which are themselves "counter entropy", can accommodate the effects of increased entropy without terminal break-down. The discredited phrase "absorptive capacity of the environment" is thus identical to the idea of "environmentally sound development". The item which is missing from most attempts to develop a definition combining "environmentally sound" with "sustainability" relates to the concept of "balance" between the undesirable effects of development and the continuing requirements for the expression of a competent biosphere.

Smith < 29 > notes that although WCED gave a meaning to "sustainability" the word is now defined and re-defined by its users depending on their interest. Thus the co-ordinator of Asia-Pacific Peoples Environment network observes: "the term 'sustainable' from the ecological point of view means the maintenance of the integrity of the ecology. It means a harmonious relation between humanity and nature, this is harmony in the interaction between individual human beings and natural resources". "The term "sustainable' from the point of view of nonecological elites means 'how to continue to sustain the supply of raw materials when existing sources of raw materials run out' " < 30 in 29 >.

UNEP declares that "Environmentally sound and sustainable development is not business as usual. Current models of economic development have swelled superficial increases in standards of living, based on material possessions, at the expense of health and our future. Sustainable development means change and sacrifice for long-term gain. The alternative is massive and irreversible ecological destruction" < 31 in 29 >.

An exact recipe to enable the achievement of ESSD however, is beyond definition at present. The concept of "carrying capacity" or "population support capability" <32> might be used to help with the definition but, although this is easily defined in a simple environment in terms of a constant sustainable population density for a given resource regime, it is much more difficult to specify where primary environmental factors are subject to variation thereby inducing population fluctuations and where potentially unbounded energy injections are involved. Thus India maintains a relatively high population density at a low per capita energy use while Japan operates at a much higher ratio. One potentially limiting factor is fossil fuel use and energy use in general. There is an urgent requirement to define environmental indicators that can be used to quantitatively measure progress towards or away from the elusive goal of ESSD. As an absolute minimum such definitions will have to accommodate towards reversing global warming and to curtail high-atmosphere ozone loss.

Major factors affecting "sustainability"

One of the most difficult areas to deal with will be the assessment of the effects of energy injections. On the one hand energy enrichment to human social systems is clearly used to promote increases in carrying capacity and the elaboration of counter-entropy structures. On the other, the act of energy capture and subsequent energy-degradation promotes vast and as yet unquantified negative environmental impacts and instabilities. Urgent work is required to assess the possible effects of increasing energy fluxes on global, regional and local systems. The recent Gulf conflict was predictable in terms of existing energy pricing policies, energy flows, and the transfer of military goods elaborated with under-priced energy as was the consequent resultant carboncost. These consisted of: 1) destruction by burning of oil, 2.6% of global use $\langle 33 \rangle$ prior to the end of 1990; 2) fossil carbon used in prosecution of hostilities; 3) fossil carbon equivalent of destroyed and worn military equipment; 4) carbon equivalent of degraded explosives; 5) fossil carbon equivalent of demolished infrastructure, etc.).

Global energy fluxes.

The question of energy throughput and its effects on the structure and function of human and natural ecosystems is of considerable interest from the ecological perspective. It appears that natural systems have evolved in association with relatively consistent energy fluxes even if these may have varied some what over the long-term of the earh's history. The relationship between the higher species diversity of tropical systems (high natural energy flux) compared to that of polar regions (low natural energy flux) together with the intervening trends are well known. It is also well-known that most species are not abondant through their potential range. A possible explanation for this is that the majority are relics of past environments in which different global conditions and climates pertained. Global species diversity may thus be properly viewed as a form of ecosystem memory which could permit a competent biological response to a host of differing environments including those predicted to develop as the result of anthropogenic climate change.

Examination of the laws of thermodynamics leads to the conclusion that energy transformations involve what may be termed an entropy cost in that energy is available as a once-only use-function in transformation from a higher to a lower state insofar as the ability to perform work is concerned. Such socially competent energy transformations as result in the elaboration of useful work also provide an increase to the general economy and at the same time an entropy penalty cost. The difference in these two conditions is intended to result in a socially useful state of increased order.

Natural ecosystems have resulted from an order-positive imbalance on the solar energy degradation pathway. In other words, an anomaly has been created in the action of the second law of thermodynamics, although entropy increases nature never-the-less converts essentially un-ordered chemicals into more ordered physical states, as long as energy flow is maintained, i.e. an order-positive imbalance exists based on solar energy througput. This from of "ecologically balanced" energy flux can be taken as one end of a range of progressively increasing socially mediated throughputs. At the other extreme of this range, as associated with the detonation of a thermonuclear device on a city or the more moderate expression of modern conventional warfare, an immediate order-negative imbalance results from the energy degradation.

Thus we may well ask at what multiple of solar energy throughput per unit area and time might we expect to find an acceptable ratio between the entropy cost penalty and maintenance of physical system order compatible with overall ecosystem well-being? An answer to this question might also tell us at what level of energy throughput per unit area we might expect to see a point at which subtraction from estabilished cultural and technical (physical) order is initiated. We may then approach the analysis of human ecosystems from an ecological perspective. The concept of an order-positive imbalance, or, a unit increase in order, for a given energy flux must take into account the entropy cost of energy conversion/capture, transmission and degradation. All energy capture schemes involve environmental costs. Hydro projects may alienate biodiversity <34>, solar energy panels may block sunlight from reaching the ground and thus potentially reduce biological productivity. The selenium and metals etc. used in photoelectric cells and peripheral structures must be mined and processed involving energy costs and appropriate carbon penalties as well as the induction of direct environmental damage and pollution etc. See Table 3.

By taking these factors into account, one may then inquire into the relationship in human systems between unit increase in order and energy throughput. This may be done in gross terms per unit time per unit area (local, regional global) and may also be properly stratified by grade of energy input. Since we may also properly regard money as a social claim on energy and thereby indirectly as a means of accounting for socially available energy (considering all forms from fusion energy, hydro-electrical energy to low-grade heat energy etc.), questions may be elaborated and answered on an ecological basis concerning the relationships between capital accumulation, expenditures or investments per unit area and the resulting energy/order relationships. For instance fossil fuel (oil) is extracted from the middle

east, exchanged at a low value-rate for hard currency (firm claim on energy), used by industrial nations to elaborate infrastructure, industrial capacity and, incidentally, military hardware which is then swapped back for the original capital creating an immediate primary imbalance which eventually leads to destruction of both the military equipment and the developing country infrastructure along with significant environmental degradation, and as yet an unquantified contribution to global warming.

By recourse to such reasoning we should be able to predict size limitalions for cities and other human ecological assemblages with different structural and energy-use characteristics in the same way that such considerations have governed the size character and complexity of living systems as single entities and as complex interactive ecological associations. To do this we must elaborate and implement a set of mathematical tools or indicators. To help map future progress we must furthermore immediately embark on a detailed environmental cost-accounting exercises to assess the relative merits of all energy capture schemes (nuclear, solar, wind, hydro, fossil fuels, tidal etc.). Only the full development of such a universal accounting scheme will allow for appropriate selection amongst alternate energy capture scenarios and for an objective identification of the correct mix to be used at local, regional and global levels consonant with environmental principals and the necessity to promote development across the globe in a sound and sustainable manner. Implementation of the resulting technical capacity can be undertaken through re-direction of armanents finance.

In view of the foregoing remarks, it is necessary to embark on a program to sanitizes as broad a range of people as possible to the current array of environmental problems facing humankind at the end of the 20th Century. Under the present state of affairs, no one agency or country has the necessary resources to ensure that the goal of human survival can be achieved and it is now apparent that we cannot any longer afford to pay lip-service to the notion of co-operation while at the same time seeking to maximize individual and nation-state holdings at the expense of the global community at large.

Summary: where we are at

In summary, increasing environmental damage is primarily propagated by greed and the resulting acceleration in energy use of all kinds is

threatening the stability of the planet earth and may lead to the elimination of humankind within 2-3 generations. As with a court trial, the matter of the proof necessary to consider global warming a reality has to be taken on "balance of probabilities". The evidence for defining this balance is already in. Those who insist on the achievement of an increase in mean global temperature of 2^{0} or 3^{0} C before initiating action will be faced with an impossible task in attempts to reverse the trend which will by then be unstoppable. Even if we begin to raise global consciousness today there is clearly no sure way for us to reverse the significant changes that we have already set in motion but yet we must still try. The present evidence shows us that we are already involved in one of the worst living nightmares that is possible to imagine. A run-away trend in global warming has already begun, the future for humankind looks much grimmer than the nuclear war prospects ever supposed because we have no clear solution at hand this time. It is no wonder that people choose rather to ignore the evidence and parrot one to another that "global warming is not real, we need more empirical evidence before we change our ways". This from of scientific escapism, or "paralysis of analysis" will not help us in the slightest bit.

To a large extent, the people attempting to re-direct and manage the excessive and miss-guided use of energy in the world today are often beset with difficulties arising from the negative influence of excessive and rapacious resource exploitation. It would be of some considerable assistance for interested parties to focus a positive influence around practitioners of environmental consciousness thereby permitting them to achieve a sharper and more consistent hold on reality and to so assist in their efforts to modify the worst effects of global change.

Closing

In closing I should like to ask all to pay respect to three people who have already given their lives as environmental martyrs towards the development of the new environmental ideology. These are: Dianne Fossy for her mortal struggle to preserve the gorillas of the mist, Fernando Pereira who went down with the "Rainbow Warrier" in Auckland Harbor, July 10, 1985 and "Chico" Alves Mendes Filho, shot to death on Thursday December 22 1988 at 5.45 p.m.

Re ferences

Zwally H.J. "Breakup of Antarctic Ice". Nature, V 350, March 1991, p 274. Doake c.S.M. and Vaughn D.G. "Rapid disintegration of the Wordie Ice Shelf in response to atmospheric warming". Nature, V 350, March 1991, pp 19–20. Gloerson P and Campbell W.J. "Recent variations in Arctic and Antarctic sea-ice covers". Nature V 352, pp 33–36.

<0> Nunn P.D. "Climate and environment in the Pacific Islands" pp 89–92 in: South Pacific Environments, Interactions with weather and climate. University of Auckland, Auckland New Zealand 2–7 September 1991, proceedings. ISSN-0114-590 Environmental Science Occasional Publication No. 6, Environmental Science, University of Auckland, New Zealand, 19 September 1991. Francis M.P. and Evans J. "Immigration of subtropical animals in relation to the Southern Oscillation" pp 44–45 in: South Pacific Environments, Interactions with weather and climate. University of Auckland, Auckland New Zealand 2–7 September 1991, proceedings. ISSN–0114–590 Environmental Science Occasional Publication No. 6, Environmental Science, University of Auckland, New Zealand, 19 September 1991. <0b> Tans P.P., Fung I. T: and Takahashi T. "Observational constraints on the global atmospheric CO₂ budget". Science Vol 24 pp 1431–1438, 23 March 1990. <0c> Quay p D, Tilbrook B and Wong c s. Oceanic uptake of fossil fuel CO₂: Carbon-13 evidence. Science, 154, pp 74–78, 3 April 1992..

(8) Briffa K. R., T. S. Bartholin, D. Eckstein, P. D. Jones, W. Karlen, F.H. Schweingruber and P. Zetterberg "A 1,400-year tree-ring record of summer temperatures in Fennoscandia. Nature V 346 2 Aug. 1990, pp 344-439.

(9) Bethoux J.P., B. Gentili, J. Raunet and D. Tailliez "Warming trend in the Western Mediterranean deep water" Nature V 347, 18 Oct. 1990, pp 660-662. <28> Parikh J., Parikh K., Gokarm S., Painuly J.P., Saha B. and Shukla V. "Consumption patterns: the driving force of environmental stress". Discussion paper # 59, April 1991, Indira Gandi Institute of Development Research, General Vaidya Marg, East Goregon, Bombay 400 065, India. <29> Suggestions for a green approach to poverty eradication, 67 pp, Dl 1 Smit. ESCAP/UNDP Workshop on implementation of the regional strategy on environmentally sound and sustainable development, 1-5 July 1991, Rayong, Thailand. <30> Mohammed S.M. "Being green from the third world viewpoint". Environmental News Digest, 8, 3, 1990. <31> Tolba M.K. "Breaking bad habits". UNEP n.d. <32> FAD: Land and Water Development Division, Rome, Italy Report on the second FAO/UNFPA consultation on Land Resources for Populations of the of the Future & Technical Report of Project A/INT/513 "Land Resources for populations of the Future – Potential Population Supporting Capacities of Lands in the Developing World."

<33> Bakan S., Chlond A., Cubasch., Feichter J., Draf H., Grassl H., Hasselmann K., Kirchner I., Latif M., Roeckner E., Sausen E., Schlese U., Schriever D., Schult I., Schumann U., Sielmann F., and Welke W. "Climate response to smoke from the burning oil wells in Kuwait". Nature Vol. 351, 30 May 1991,pp 367–371.

<34> Harger J.R.E. and Culhane G.F. "Ecological cost assessment theory and practice: environmental impact of the High Ross Dam". Intern. J. Environmental Studies 1974, Vol. 6, pp. 276–280.

<35> Schlisinger W.H. "Vegetation an unlikely answer". Nature Vol. 384 20/27 Dec. 1990 p 679.

<36> "Preliminary assessment of peat development potential". Final report. Euroconsult, Arnham, The Netherlands May 1984. Joint report supported by Republic of Indonesia, Min. of Mines and Energy plus Kingdom of the Netherlands, Min. of Foreign Affairs, Development Co-operation (Asia) Department.

<37> Perlin J. "A forest journey, the role of wood in the development of civilization". Harvard University Press, 1989, 1991. 445 pp.

Brown S. and Lugo A.E. "The storage and production of organic matter in tropical forests and their role in the global carbon cycle." Biotropica; 14 (3): 161-187 (1982)

Central Bureau of Statistics, 1989; statistical Year Book Indonesia 1988. ROI Publication No. 03300. 8913, Jakarta.

Central Bureau of Statistics, 1991; Statistical Year Book Indonesia 1990. ROI Publication No. 03300.9113, Jakarta.

Enfield, 1988; El Nino, Past and Present. Reviews of Geophysics, Vol. 27, No. 1.

Markgraf, V., Dodson, J.R., Kershaw, P.A. McGlone, M.S. and Nicholls, N., 1992. Evolution of the late Pleistocene and Holocene climates in the circum-South Pacific land areas. Climate Change (in press).

Murdiyarso, D 1991. Policy options to reduce CO₂ releases resulting from deforestation and biomass burning in Indonesia. in: UNESCO/UNEP/Dept.

Environment, Malaysia Regional Workshop on the Carbon Cycle and Global Climate Change Kuala Lumpur, Malaysia, October 24–26, 1991.

Nicholls, N. 1989. Global warming, tropical cyclones and ENSO. Responding to the threat of global warming. Options for the Pacific and Asia. Argonne National Laboratory, 19–36.

UNEP 1991 Earthwatch Global Environmental Monitoring System. Report of the Workshop on ENSO and Climate Change. Bangkok, Thailand, 4–7 Nov. 1991, eEd. M. H. Glantz.

Wyrkti K. 1982. The southern oscillation, Ocean—Atmosphere Interaction and El Nino. Marine Technology Society Journal. vol 16 No. 1 pp 3-10. Smith et al. Ozone depletion: ultraviolet radiation and phytoplankton biology in Antarctic waters. Science 255, pp 952–959, 21 Feb 1992.

	1966-1991						
coldest months	regression		DF	F	among slopes	among adjusted means x = 19	F 91
non ENSO year	v=5, 73+0,	.01 x	79	103.42		26.40 C ^C	5.92
ENSO year	y=12.03+0.	007x	39	11.92	N.S.	26.04 C ^C	p<.05
	194	8–1991	(las	t 43 yea	nrs)		
coldest months							
	mean		Ν		F		
non ENSO years	26.16 C ⁰		29				
ENSO years	25.83 C ⁰		14		5.96	p < 0.05	
all years			regr	ession			adjusted
1866-1991			DF	F	slopes	mear	ns x=1991
coldest months	y=7.92+0.9	1x	120	87.9	5		26.3 C ^o
warmest months	y=-2.50+0.	02x	120	278.7	3 21.57	p<0.001	28.4 C ^o

Table 1

 $y = temperature C^{0}, x = years$

Tabel 2

Trial Balance: Annual Carbon sinks. gt/C/yr. Measured or measured/estimated data only. entries in gt. 1 gt = 1×10^9 t

Ref.	Partition	min	max	Median or estimate	
<266>	Global deep ocean particulate C flux	16		445	
<26a>	Marine organic burial (shelves)	0.0063	0.75	0.378	
<0b> <0c> <26a><4>	Marine dissolved inorganic Carbonate burial	1.0	2.8	1.9*	
	shelves overall (0.072 min 0.48 max) minus reefs 0.11 <4>	0.0	0.37	0.18	
<4> <26a>	Carbonate coral reefs Deep oceans marine carbonate flux from	0.11	0.11	0.11	
<36><26b> & this paper	surface Global peat	0.42 0.277	1.18 0.42	0.75 0.348	
<35>	Soils (subtract 50% for double counting with peat)	0.0	0.4	0.2	
	Terrestrial vegetation Total sink	assu 	umed in 13.08	balance+=- 7.910 6.01*	
	Median sink	3.66 6.35			

<5b≫5c>	Volcanic/				
	geological discharges	0.2	0.5	0.35	0.35
Anthropogenic	addition (for 1990)			10.00	10.00
6.0 fossil fuel,	3.0gt biomass bum, 1 gt soil	rel.			
Total addition			-	10.35	10.35
0.4% annual in (353 ppmv CO	crease of 752 gt C in atmosp 2 ⁾	here	1 a 1 2 a	3.03	3.30
Difference, To	tal addition – Total sink	(10.3	35-7.91)	2.44	4.34
Difference, To	tal addition Median sink	(10.3	35-9.64)	0.7	4.00

Note: It is assumed that new terrestrial growth and decay are at least approximetly equal therefore no entry is made for this category. In any case growth of non-agricultural standing stock will not exceed current biomass destruction. Agricultural production is assumed to be totally oxidised. Also, marine dissolved inorganic* is taken as separate from the organic partitions but may involve double counting to a maximum of 1.9 gt C. In any event the median measured particulate organic flux to the deep oceans exceeds the estimate for dissolved inorganic carbon by a factor of 2. Plainly carbon must move through seawater before it can be taken up by plants or invorporated into carbonates, however, dissolved inputs are measured with living organisms present and it is not clear that the results are independent.

Table 3

Conceptual basis for energy flux analysis and human ecosystem response ENERGY INPUT TO ECOSYSTEMS: A GUIDE FOR ESSO

energy input	~	>	 ->>	
= solar radiation				
per unit area				

energy input = nuclear explosion per unit area

evolution adjusts to available energy over ''geology" time	industrialization increasea energy flux>	fossil carbon use increasing human populations	modern warefare nuclear explosion increased use of fossil fuel etc.		
low = polar regions low diversity ecosystems* high = equator high diversity ecosystems*	regions pollution> ecosystem simplification tor energy flux ty progressively moves outside glotal ecosystem experience over geological time using accumulated fossil carbon storehouse	ecosystem alienation, species loss, loss of ecosystem feed-back capacity, carbon sequestering mechs. overwhelmted	ecosystem collapse or adjustment may be possible if genetic record of previous such situations has been preserved		
evolution adapts ecosystems		PROGRESSIVELY UNSUSTAINABLE BIOSPHERE			
to available energy/water		SPECIES LOSS REDUCES ABILITY OF BIOSPHERE TO RESPOND SUCCESS FULLY TO LOCAL, REGIONAL & GLOBAL ENVIRONMENTAL CHANGE			

INCREASING ENERGY FLUX THROUGH ECOSYSTEMS ->

* At the present time.

Note: Maximum productivity/rainfall zones shift over geological time from the tropics in icehouse conditions (present) towards the polar regions under greenhouse conditions leaving the equatorial zone hot and arid with a loss of biodiversity and standing crop. Maximum coal production shifts with the maximum productivity zones and these in turn are probably associated with madimum terrestrial biodiversity and temperatures around $22-25^{\circ}C$.

The relationship between mean monthly air temperature and time, Jakarta and Semarang, Indonesia. The data commence in 1866 and run through 1991. The regression equation y = a + bx is y = 1.327 + 0.0131x (where x = years and y = temperature). The slope of the line differs significantly from 0, p < 0001 showing that temperature is on the increase with a change in the mean of 1.64 C⁰ over the 124 year period. Note: Semarang is a small city 450 km to the east of Jakarta and is "pooled" into the data to indicate a common overall trend which does not depend on a "heat-island" effect from Jakarta alone. Semarang data run from 1982–1991 inclusive and there is no significant difference between the Semarang data set (mean temperature 27.32, n = 120) for this 10 year period. Source: 1866–1935 Royal Magnetical and Meteorological Observatory at Batavia, Climatological Tables, Vol. XIX A, 1936–1991 from: Badan Meteorologi dan Geofisika, Jakarta, Indonesia.



Figure 1a

Air temperature data for Jakarta and Semarang over the years 1982– 1991. Individual monthly means for both areas are plotted for each year of the series. Semarang data run from 1982–1991 inclusive and there is no significant difference between the Semarang data set (mean temperature 27.27 C⁰, s = 0.69, n = 116) and the Jakarta data set (mean temperature 27.32 C⁰, s = 0.74, n = 120) for this 10 year period (all months taken together). Source: 1866–1935 Royal Magnetical and Meteorological Observatory at Batavia, Climatological Tables, Vol. XIX A, 1936–1991 from: Badan Meerologi dan Geofisika, Jakarta, Indonesia.



The same data set as displayed in Figure 1, however, only the ENSO years are plotted. The regression line is y = 2.979 + 0.0123x (where x = years and y = temperature). The slope of the line differs significantly from 0,p <.0001.



Figure 3

The same data set as displayed in Figure 1, however, only the non ENSO years are plotted. The regression line is y = 0.599 + 0.0134x (where x = years and y = temperature). The slope of the line differs significantly from 0, p < .0001.

The slopes of the lines in Figure 2 and Figure 3 do not differ from one another however, they differ in location (P < .001) and ENSO years are about 0.16 C⁰ warmer throughout the record.



Time-trend for ENSO and non ENSO years showing the maximum monthly air-temperatures recorded for each year since 1866 through 1990. The ENSO year regression line is y = -3.3133 + 0.0155x, n = 41 (where x = years and y = temperature) and the non ENSO year regression line is y = -2.0242 + 0.01517x, n = 81. The slope of the lines differ significantly from 0, p < .001, but are almost parallel and do not differ from one another in slope. The lines differ in location, p < 0.001 with the ENSO year warmest months (usually September or October) about 0.4 C⁰ higher that for non ENSO years.



Time-trend for ENSO and non ENSO years showing the minimum monthly air-temperatures recorded for each year since 1866 through 1991. The ENSO year regression line is y = 12.035 + 0.007x, n = 41 (where x = years and y = temperature) and the non ENSO year regression line is y = 5.735 + 0.0103x, n = 81. The slope of the lines differ significantly from 0, n = 122, p < 0.001, but cannot be defined as statistically different from one another. The adjusted means (26.04 C⁰ and 24.40 C⁰) differ in location at the position of year 1991, p < .05 with the ENSO year coldest months (usually January) about 0.4 C⁰ lower than for non ENSO years. No such difference exists at the begining of the record at year 1866.



Changing ENSO related system as recorded by mean monthly airtemperature in Jakarta and Semarang over the period 1866–1990. The central data represent the mean annual values calculated from the individual monthly means. The outside lines are the regression equations fitted to the maximum and the minimum of the mean monthly values for ENSO and non ENSO years throughout the period. The slopes of the lines representing the minimum values showing that the annual temperature variation is progressively increasing. The position of the year 1991 values for minimum mean monthly temperatures are significantly different from each other p < 0.05, see figure 5.



The dry season, as defined by the number of consecutive months with less than 100 mm rain, has been gradually increasing in west and central Java since 1909. Recent years have been associated with particularly long dry spells. Wonosari and Yogyakarta are in central Java with Jakarta, Tegal and Surabaya on the north coast. The regression equation is y = -18.90 + 0.0122x, n = 242 r = 0.14 with b > 0, p = 0.026. Source: Central Bureau of Statistics, 1989; Statistical Year Book Indonesia 1988, 1990. ROI Publication No. 03300.8913, 03300.9113, Jakarta.



5.3. THE ENVIRONMENT AND THE REGENERATION OF CULTURE

by: Wazir Jahan Karim Universiti Sains Malaysia

The spraying of Agent Orange and other herbicides during the Vietnam War destroyed an estimate 22,000 square kilometers of forest and farmland. Vu Quy (1992) wrote that the defoliants used by the military had turned the primary forest into a vast field of easily flammable *Pennisetum polystachyum* known now to local people as "American grass". In the Philippines, similar fields were subject to desertification processes after the Japanese invasion in World War Two. These were justifiably renamed "Japanese grass" in honour of the predator.

In other parts of the world, the intrusion of modern man into the natural habitat of indigenes has contributed to conditions close to genocide. The Andaman Islanders who lived on the great Andaman Islands have declined in numbers to 24 compared with 4000 in 1858. This was the last count on September 14, 1975 (Raghubir Singh, 1975; 43). It is not known if there are any more alive today. Raghubir blames the British for this particular genocide. A British penal settlement was founded on the great Andamanese Island in 1858 but the Andamanese Islanders resisted it. The results 'were fast, brutal and disastrous'. These Negritos were not only killed in battle but also contaminated by such previously unknown diseases as syphilis, measles and ophthalmia' (45). During the period of British colonisation, the population had dwindled to approximately 600. Radcliffe Brown who made them infamous with his great classic, The Andaman Islanders' (1932), said that they died as a result of European occupation of the islands; and 'new diseases' introduced amongst them.

Another struggle of forest dwellers against forest developers are the Ma'Betisek of Carey Island on the West Coast of Peninsular Malaysia numbering less than a thousand. Living on an Island originally sold to a Scottish Company in perpetuity, the Ma' Betisek are mostly dependent on the mangrove rain forest and mud flats for food, shelter, transport and income. They are now confined to their Orang Asli land reserves as the forest makes way for oilpalm cultivation. Most of them are now reduced to wage labourers on the plantation. The fate of the remaining 2,000 Ma' Betisek on the mainland remains to be seen. Their villages and reserves now fall into the most sought after commercial strip in the country around Sepang which will in 1994 make way for Malaysia's largest international airport. The area from Kuala Lumpur to Sepang will be fully developed into a series of commercial and tourist projects, including housing estates, golf courses, hotels and restaurants. How the Ma' Betisek will fit into this development venture is an interesting question for the anthropologists.

From wars, epidemic's, economic development and industrialisation; history has shown that the problems of deforestation, desertification, depopulation and deculturation have been jointly contributed by imperialism and modernity. In the second Ministerial conference of developing countries on environment and development, the Kuala Lumpur declaration signed by 55 developing countries indirectly cautioned against environmental issues being absorbed into the New World order, with developed Western nations dictating the terms and conditions of environmental preservation laws and developing nations being forced to adhere to these terms and conditions, despite the fact carbon dioxide and other greenhouse gas emersions are mainly produces by technologically advanced nations. This concern is reflected in their joint stand on the deterioration of the environment by the First World at the Earth Summit in Rio de Janeiro, Brazil from June 3rd to 14, 1992. Part of the Kuala Lumpur declaration reads. (New Straits Times, Thursday, April, 30, 1992 :

> "Unced is of historic importance and provides the occasion at the highest levels of government to address environment and development in and integrated, comprehensive and balance manner for the benefit of both present and future generation. We call for a new global partnership based on respect for sovereignty and principles of equity and equality among states for the achievement of sustainable development, taking into account the main responsibility of developed countries for the deterioration of the environment and the need for sustained economic growth and development of developing countries."

The same concerns, are reflected in other documents written in anticipation of the UNCED Conference in Rio de Janeiro. Agarwal and Narain (1991) writing from the Centre for Science and Environment in New Delhi, India states that a major problem at the Earth Summit may be the avoidance of

industrialised countries serious discussion on the restructuring of international economic relations by developed countires, at the same time developing countries may see the agenda as threatening immediate concerns, sovereignity over its natural resources and its future development (1991: 12). The authors write, 'The North must indicate its willingness to deal with basic issues that f orce the South to scrape the earth, and the South-as the legitimate voice of the world's poor – must put forward its own world view on how it would like to see the world's environment managed' (12). They conclude, 'The carbon dioxide cost of one individuals plane trip from New York to Chicago would exceed by ten times, a Thai farmer's legitimate annual quota. (12).

While the North – South dialogue on the environment speaks the tale of a struggle between powerful and less powerful States, the internal scenario within all States describes serious majority - minority conflicts over environmental resources. A prevailing theme is the acquisition of land or forest preserved by the indigenes as their primary source of livelihood and shelter. The contrast in the two world views, of development and conservation of a natural habitat reflects contrasting priorities and viewpoints. For the indigenes, development implies loss over, ancestral rights of ownership, resettlement, loss of economic livelihood and new forms of social conflict, all reflecting a real and psychological fear of outside domination. For State corporation, the development of the natural habitat of indigenes speaks of profit. Other arguments are usually included, such as inclusion of indigenes in the profit able ventures of rezoning and redevelopment, waged employment, economic mobility, social services and a better future for the next generation. However because of previous histories of domination from outsiders indigenes already feel alienated from the States and have very little faith in dealings of these kind. As a consequence they tend to resist such forms of intervention. Resistance becomes viewed as militancy 'Militant' tribesmen are more easily jailed, shot or killed.

In 1991, the Mohawk Indians of Quebec, Canada resisted the development of a portion of their ancestral land into a golf course by setting up blockades. The confrontation eventually became violent when the police were called in and several arrests were made. Over the last eight years, the Sarawak Government of Malaysia has been coaxing some 300 nomadic Penans to stop hunting and gathering in the forest and to settle dowh. According to the government the remaining 9,700 Penans have already

done so. The main reason behind this move was the granting of hundreds of hectacres of primary rain forests to logging companies. The Sarawak Government also stated that they were anxious to include the Penans into 'main stream development' and that Western environmentalist groups, including anthropologists were preventing the Penans from making autonomous decisions about their future. The anti-tropical timber campaign is closely linked to the Penans issue (Maduro, 1991:15). Over the past few years, the police have systematically remove blockades against timber lorries entering the forests and have jailed defiant Penans who failed to remove themselves from the blockades. The modern Chipko ('to hug') movement is made up of women who embrace tress so loggers cannot cut them down and in the words of Hynes, 'place themselves between chain saws and trees where intense logging is destroying primeval forests' (1991; 18). Simultaneously, they form human chains across roads to keep out logging equipment. In its essence, the message of Chipko is passive since it is the human body which is sacrificially laid across the altar of wooded forests.

The Hill district of Uttar Pradesh saw the beginnings of the first Chipko when in the seventeenth century, a woman Amitra Devi led 300 Indian people to salvage sacred trees which were to be chopped down. All of them lost their lives in this incident. In 1978 in the Bhyuvdar village of Chamoli District, women walked in the snow to hug trees which were about to be chopped down for some 250,000 pilgrims of the Badrinath Temple (Chand Sheth, 1991: 11). In the same year, in Duagor-Paitol, women pitted against their men to prevent the forest from being sold for potato farming. In Reni village, 2,500 trees were saved in the same way (Chand Sheth : 11).

Blockades, tree hugging, human chains, chaining the body to the tree have been some of the ways in which indigenes have demonstrated the infinite line between the human body and nature. Non indigenes who involve themselves in these movements attempt to behave like indigenes by emulating their behaviour. In their own habitat in the Western World, they as indigenes do the same thing. The issue at hand is the extent to which economic development and modernity with its commitment to profit attempts to regenerate culture in the same way as it does itself. As economic development moves forward in relentless pursuit of profit, how much of the basic necessities of human kind does it reproduce in its giant leap forward. How much profit sharing takes place amongst indigenes that they can make them gladly

say, 'We have our basic necessities now and you have given us even more than what we have dreamed of; take the rest of the forest, the mountains and the seas, its all yours !

Its quite obvious in the accounts to be heard shortly of indigenes own environmental impact assessment reports that very little of this transpires. Chamun Deyi and Itwari Dewi of the Nahi-Kala village in North India said that the forest was the source of their lives and without it they might as well be dead. Waged employment fetched meager incomes and was insufficient to meet the costs of basic food necessities. They said if the powerful made them wealthy their problems would end but the powerful made them poor, poorer than they already were. The Penans similarly were sceptical of the extent to which they would benefit from 'main stream development', for so far over the last hundred years of deforestation to meet the demand for tropical hardwood in Japan and the West, they have not enjoyed any protion of this 'development', in the form of high incomes or advance social services. A recent interview conducted by The Star with the timber King of Sarawak, Datuk Lau Hui Kang, would invariably arouse concern amongst them. It describes the conflict between rules of granting concessions to logging and ancestral rights over trees which no longer apply. The persons who chop down the tree own them, ancestral rights have no economic values and modernity only recognises those who work hard for a profit. (The Star: Thursday, September, 1991:11).

'The timber business in Sarawak is synonymous with the Chows, who are mainly responsible for the development of the industry.

They owned most, if not all the major wood based companies and are also reputed to enjoy controlling interests over the entire logging industry.

A famous son of this clan is Datuk Lau Hui Kang, who is the chairman of the Malaysian Timber Association and of course, the United Chinese Association in Sibu.

In a telephone interview with Star Business in Sibu, Datuk Lau recalled the early years of the Foo Chows landing in Sibu, and how the clan gained control of the industry.

This is Datuk Lau story :

At the turn of this century, there was a large outflow of Chinese immigrants from China to other parts of South-East Asia ini search of greener pasture.

Among them were the Foo Chows from the Hokkien Province, braving the rough sea in their junks. Many landed in Borneo.

Most were lured to Sibu, a place where they were promised fortune and wealth by another clansman, Wong Nai Siang.

The enterprising Mr. Wong used his influence to secure a contract from the ruler then, the White Raja of the Brooke family, to supply labourers to Sibu, which had been earmarked for development.

Being a Foo Chow, Mr. Wong sailed back to his village and spread the good news among his fellows clansmen, thus paving the way for the entry of more Chows into Sibu 90 years ago.

The rolling hilly terrain in Sibu awaited the immigrants who easily acclimatised themselves to the local environment as their province back home was geographically similar.

They became labourers, farmers, rubber tappers, and whatever field jobs they could lay their hands on.

Timber business meant hard money those days – long periods of time in the thick steamy jungle with little or no infrastructure facilities and poor medical services.

Others such as the Hakkas soon abandoned the trade because of the harsh conditions, leaving the more robust Foo Chows to carry on.

Timber felling then was very primitive and also highly dangerous.

The loggers had to use handsaws to fell the huge trees. Work was tedious, slow and back breaking.

Nowadays, skidders trucks make the job easier and more efficient.

Gradually, a handful of Foo Chows pooled together some capital and formed the first two sawmills, Lee Hua and Hua Seng, between 1925 and 1930.

By this time, more Foo Chows had landed in Sibu from China and were recruited into the trade.

Bosses and workers slogged together in the timber operations and they worked doubly hard in meeting the increased global demand for tropical hardwood after World War Two.

Log vessels from Europe and the United States were berthing at the ports in Sarawak, and soon a whole network of supporting facilities like transportation, banking and trading houses were wet up.

Prices for timber began to increase. The industrial Foo Chows seized the opportunities and migrated to places, such as Kuching, Simanggang, and even to Indonesia to work the forests. To date, the Foo Chows can be said to control 90% of the forestry sector in Sarawak."

In another community in Malaysia, the Ma' Betisek continue to orientate their lives around the procurement of food, 'Food is culture and culture food' is an ideology of destitute indigenes throughout the globe. With the Ma' Betisek, food in the form of cooked plants and animals reflects the prevailing world view of plants and animals existing in a delicate balance with human life. In the same way as they are gathered and killed, so can humans be killed, by mystical attacks of *tenong*, when plants and animals spirits avenge humans who kill them. The rights of human to gather and kill based on the idea of *tulah* that plants an animals have been cursed by ancestors to be basic sources of food is checked by the anthropomorphisms of natural life, that plants and animals similarly have life, emotions and will do their utmost to preserve them (*kemali*). Hence both human and natural life endanger one another and it is this subtle mystical politics of survival which has helped to preserve the environment for many generations of Ma' Betisek.

The conservationist model of animism however is shortlived when private and state agencies concerned with modernity and change introduce development programmes, in the mangrove rain forests and mudflats which provide the Ma' Betisek with their main supply of food. Around Carey Island in Selangor, the natural abode of the Ma' Betisek, bunds have been build by a former company, the Pataling Estate Company and now Golden Hope Plantations, to remove the salinity from the soil, to optimise their acreage under oil plam cultivation.

Most of these areas comprise the rich littoral mangroves belt which has for generations been the main fishing and gathering areas of the Ma' Betisek. The problem is intensified by the move, on the part of the State government to sell their remaining mangrove reserves of 4,000 acres to a public corporation which is profit oriented and has as its members, the majority of employees of the State government. In an unprecedented move, the State Orang Asli Department gave the corporation permission to include the neighbouring Ma' Betisek settlement in their development plans, without any prior consultation with the Ma' Betisek. Theoretically, this implies that aboriginal land in this area can now be a component of the housing project planed for the area. It could mean the inclusion of water and electric supply but this has so far only been included in the arrangements to pacify the agitated Ma' Betisek. If the project is successfully implemented, the total island will be bunded off, destroying virtually every species of microflora and fauna, including fish and crustaceans that are adapted to the mangrove coast. It also implies a complete loss of the primary productivity of mangrove plants which alone maintains productivity levels as much as seven times more than that of the neighbouring coastal areas (A. Cruz, 1979: 132).

The Jabatan Orang Asli does not see the destruction of mangrove flora and fauna as a total loss of food resource for the Ma' Betisek. Indeed, they argue that Ma' Betisek integration into the wider cash economy can be hastened through the development of the area. They could be trained to become agriculturalists and experts in aquaculture. They could increase their income many times over and improve their living conditions. Their children could go to better schools and be more efficiently trained in agriculture and agricultural technology. With their bigger incomes, they could even venture into deep sea fishing. This trend of optimism is however not shared by the Ma' Betisek and indeed, some officers in the Orang Asli Department itself. For one thing, former schemes to introduce aquaculture have been unsuccessful. not only because the Ma' Betisek are not sufficiently interested to see them through but also because of inadequate training in aquaculture management. The introduction of oil palm projects in Ma' Betisek reserves have also been attempted. In 1985, in the village of Judah, some 65 acres of land had been handed over to be headman's son for oil plam development. The Department brought in seedlines and fertilizers and provided a working capital as well as training in oil-palm management. Today, the total project has been taken over by a chinese entrepreneur who extends indefinite credit to the Ma' Betisek, on condition that they stake no claims to the yields from the harvest. This problem has yet to be resolved by the department.

Hegemonic relationships between corporations which represent the State and indigenes throws multiple complexities of meaning in the volatile link between culture and the environment. For indigenes, the essence of their culture is the receneration of life which is dependent an the availability of food resources. For these modernists, food can be bought rather than extracted from the environment and culture is the ability to enjoy the life process beyond the procurement of food. Profit and economic progress and the marks the continuity of life and culture. Conflicting viewpoints of conserving the environment for the human life process and the development for profit encapsulates in a microcosm, the infinite conflict between human ideals of expansionism, based in capitalistic enterprise and human ideals of fair redistribution of resources based in socialism. It would seem that indigenes in their world view are essentially socialistic, unable to imagine that the development process will ever made them equal in any way to that of the developer. The State on the other hand although anxious to balance conservation with profit frequently succumbs to profiteering groups who are able to package attractive investment ventures which will help to boost the economy and on another level, compete successfully with the First in international trade. Hence, State corporation are usually in cohort with the private developers rather than indigenes, until such a time when indigenes seek legal measures against developers and the State becomes the implementing machinery of court decisions. These tripartite imbalances in ideology are afterall a universal phenomenon and a concern of statesman, scientists and indigenes. Transferred into the ideological dimensions of free enterprise and modernity, ideological imbalances suggest to indigenes, an apocalyptic vision of the future. Being in control and losing control is a vision of the present and future of the dominant and the weak, the powerful and less powerful. It is also a message historically implanted in humankind through class, gender, ethnicity and internationalism.

References

- Agarwal, A and Narain, S (1991), In the Interest of Us All : Reflection on UNCED', *South Letter*, Sept, No. 11, 12 13.
- Chand Sheth, M (1991), 'Indian Women in Defence of Forest', Women in Action, No. 4, 11.
- (1991) *Environment and Development:* Towards a Common Strategy of the South in the UNCED Negotiation and Beyond, South Centre, South Commission, November.
- Hynes, P.H, (1991) 'Women Roles : An Analysis beyond Global Housekeeping', *The Tribune: A Women and Development Quarterly*, Sept: No. 47, 18 – 19.
- Marcus, G.E. and Fischer, M.M. (1987) *Anthropology as Culture Critique*, An Experimental Moment in the Human Science, Chicago: University of Chicago Press.
- Radcliffe- Brown, A.R., (1964), *The Andaman Islanders*, New York: The Free Press of Glencoe.
- Singh, R (1975), 'The Undefeated : Last Stand of the Andaaman Islanders', Sunday Times Magazine, Sept 10, 34 – 48.
- (1992) 'The Kuala Lumpur Declaration on Environment and Development', Second Ministerial Conference of Developing Countries on Environment and development', *New Straits Times*, Thurs Apr 30. 4.
- 'The Chipko Embrace' (1991) Women in Action, No. 4, 10, originally published 1990 from Green Globalism: Perspectives on Environment and Development, Dxford: Links Publication, 1990.

Va Quy (1992), 'The Wounds of War', Ceres, 24: 134, March-April, 13-16.

5.4. NATURE AND SOCIETY NETWORK

by : S. Boyden

Centre for Resource and Environmental Studies Australian National University

Preamble

The aim of all societies must be to satisfy the health needs both of all sections of their human populations and of the ecosystems on which they depend.

In many parts of the world today one or both of these sets of health needs are not satisfied. In some regions, extreme poverty interferes with human health and well-being, while in many areas the health of local ecosystems (i.e., their productivity) is being seriously impaired as a consequence of human activities. Moreover, human-induced ecological changes are now evident even at the global level, and many scientists believe that the survival of the human species as a whole is under serious threat.

The societal reforms necessary to overcome these difficulties are unlikely to be achieved unless and until there is a greatly improved understanding throughout the communities of the world of the processes of nature, of the sensitivities and interdependencies of living organisms and systems, of the human place in nature and of the interplay between nature and human culture. Understanding of this kind, which may be derived both from the natural sciences and from traditional wisdom, is pertinent not only to the ecological interactions between society and the natural environment, but also to human health and well-being and the interrelations between people. Existing societal institutions and arrangements do not promote such understanding.

Proposal for An International Nature and Society Network

It is therefore proposed that, as a matter of urgency, a new regional *Nature* and *Society Network* (NSN) of community organisations be set up with the following functions:

 To provide a framework for people to improve their undersanding of nature and of the human place in nature, especially as this understanding is relevant to the health and well-being of humans and of the ecosystems of the biosphere.

- To encourage creative thinking and discussion in all sections of communities on the meaning of this understanding for decision-making and policies at the level of the individual, the household, the community and the nation (in relation to lifestyle, farming practices, manufacturing, economic arrangements, etc).
- To act as a bridge between interested and concerned members of communities on the one hand and experts from academic and research institutions on the other.
- 4. To facilitate the exchange of relevant information and ideas between communities throughout the region (world).

The component parts of the Nature and Society Network will be linked by the distribution of a Newsletter which will include information on the activities of the community groups and on the outcome of these activities. Pamphlets will also be produced and articles written for the popular press.

We believe that such a Nature and Society Network would make a very significant contribution to the achievement of ecologically sustainable societies world wide - societies which satisfy the health needs of humans and of the ecosystems of the biosphere.

Immediate Proposal

It is initially proposed to establish a Nature and Society Network in Australia and Thailand on a trial basis. Such a network, known as the *Nature and Society Forum*, is already in the planning stages in Australia (see attached paper). The intention will be eventually, in the light of experience gained, to extend the network first to other countries in the region (southeastern Asia and the western Pacific), and later to other parts of the world.

NATURE AND SOCIETY FORUM

Introduction

The principal aim of all societies must be to satisfy the health needs of all sections of their human populations as well as the health needs of the ecosystems on which they depend.

In many parts of world today one or both of these sets of health needs are not being satisfied. In some regions extreme poverty interferes with human health and well-being, while in many areas the productivity of local ecosystems is being seriously impaired. Indeed, ecological changes resulting from human activities are now evident even at the level of the entire planet, and many scientists and others believe that the survival of the human species as a whole is under threat.

The societal reforms necessary to overcome these problems are unlikely to come about unless and until there is a greatly improved understanding throughout the communities of the world of the processes of nature, of the sensitivites and interdependencies of living systems, of the human place in nature and of the interplay between human society and natural systems. Understanding of this kind is relevant not only to ecological issues, but also to human health and well-being and to the interrelations between people. Existing institutions in contemporary society do not promote such understanding.

There is therefore an urgent need for a new kind of institution in our society which will promote understanding of nature and of the human place in nature and which will encourage creative thinking and discussion on the meaning of this understanding for decision-making at the level of individuals, households, local communities, nations and the world community. The *Nature and Society Forum* is designed to meet this institutional need.

The creation of a network of institutions of this kind would make a significant contribution to the achievement of ecologically sustainable societies worldwide which satisfy the health needs both of people and of the ecosystems of the biosphere. These institutions would have a permanent place in society even after the attainment of ecological sustainability, ensuring the maintenance of this sustainability and contributing to human welfare in variety of ways.

Aims of the Nature and Society Forum

The main aims of the Forum can be summarises as follows:

 To provide an institutional framework for people who wish to improve their understanding of nature and of the human place in nature, especially as this understanding is relevant to the health and well-being both of humans and of the ecosystems of the biosphere.

- To encourage creative thinking and informed discussion on the meaning of this understanding for decision-making and policies at the level of the individual, the household, the local or occupational community, the nation and the planet.
- To act as a bridge between interested and concerned members of the community on the one hand and specialists from academic and research institutions on the other.
- 4. To facilitate the flow of relevant information and the exchange of ideas between communities throughout the region.
- To encourage the expression of opinions, ideas and feelings about naturesociety themes through writing, community arts, radio and television etc.
- 6. To contribute to the transition to a society which is ecologically sustainable and which is conducive to health and well-being in all sections of the human population.

General characteristics of the Forum

The Nature and Society Forum is a community-based organisation. Its activities are initiated by individuals and groups in the general community.

The programs and activities of the Forum are based on the premise that the necessity for social change arising from ecological constraints provides a great opportunity for moving towards a more equitable society, in terms of the health and well-being of people the world over. The overriding theme of the Forum is *healthy people in a healthy biosphere*.

The Forum provides a framework which encourages the exchange of information and ideas on nature-society themes between members of the public, scientists and other academics, the business community, unions, politicians, and professional and religious groups.

Activities

The activities of the Forum will include the following:

- The organisation of workshops, courses of lectures and discussion groups on such themes as:
 - visions for the future: the implications of our understanding of nature and of the human place in nature for policies at the levels
of the individual, the family, the local community, the nation and the world as a whole.

- the sensitivities, health needs, interdependencies and diversity of biological organisms (including humans).
- the interactions, past and present, between human societies and biological systems.
- specific ecological and health issues (eg consumer behaviour, energy options, sustainable farming and forestry, population issues, motor vehicles, the economic system, quality of life, drugs, nutrition, human conflict, education).
- current thinking locally, nationally and internationally about the characteristics of an ecologically sustainable and humanly satisfying society of the future.
- 2. The organisation of open debates on ecological and health issues.
- 3. The publication of. (1) a Nature and Society Magazine, which will be a vehicle for the exchange of news and ideas between Members of the Forum and for disseminating information relevant to the interests of the Forum, (2) Nature and Society Paperbacks and Pamphlets arising out of the activities of the Forum, (3) Articles in the popular press.
- The preparation of exhibitions, displays, videos etc on nature-society themes.
- 5. The establishment of an information service on important nature-society subjects for use by community groups.
- 6. The organisation of community-based research projects (eg. surveys on perceptions and opinions of members of the public, politicians and scientists on topics relevant to the interests of the Forum).
- 7. The maintenance of a directory of advisers from different areas of specialism who are willing to: assist members of the Forum seeking information on paricular themes or issues.

Organisation

The organisation of the Forum is depicted in Figure 1. The structure, functions and activities of the different groups can be summarised as follows:

1. General Membership

The membership will be made up of individuals who:

- 1. Support the aims of the Forum.
- Wish to : (a) participate in activities aimed at improving understanding of nature and of the human place in nature, and aimed at promoting creative thinking and discussion about the meaning of this understanding for individuals and for society.
 - and/or : (b) receive information on nature-society themes, Forum activities and the opinions of members of the general general community and of scientists on issues relating to the health and well-being both of humans and of the ecosystems of the biosphere.
 - (c) communicate their own ideas on nature-society themes to other Members of the Forum.

Members will be encouraged to propose projects, workshops, courses etc. on topics of particular interest or concern to them. In some instances, *Theme Groups* will be formed focusing, for example, on specific health, biological or ecological issues (local, regional or global), or on such topics as the implications of biophysical constraints for societal processes (eg economic arrangements, education, transportation). The range of activities of Theme Groups is likely to include:

- -- arranging courses or workshops on selected nature-society themes.
- inviting representatives of political, business and academic groups to discuss key issues relating to the health of humans or the natural environment.
- carrying out research projects (eg. on the current views of different sections of the community on the nature and seriousness of ecological and health problems and on ways and means of overcoming them.
- preparing reports on the outcome of their activities for communication via the *Nature and Society* Magazine, pamphlets and articles for the popular press.
- expressing ideas, opinions and feelings about nature-society themes through exhibitions, displays, videos and community arts.

180

Members of the Forum will:

receive the Nature and Society magazine

receive advance notice of all Forum activities

be eligible to participate in all Forum activities

(eg workshops, courses of lectures, preparation of publications, videos etc)

be encouraged to propose projects and to contribute ideas to further the aims of the Forum

be eligible to attend the Annual General Meeting of the Forum. The annual subscription rate is \$ 25, with a concessional rate of \$ 10 for students and pensioners.

There is also provision for Group Membership, Corporate Membership and Life Membership.

2. Affiliated Associations

Other community organisations interested in nature-society themes may, with the agreement of the Management Committee, become formally affiliated associations will receive the Magazine, *Nature and Society*, and will be kept informed of the main activities of the Forum. Where appropriate they may participate in Forum projects.

3. The Facilitating Body

The broad functions of the Facilitating Body will be to assist the Membership in carrying out activities consistent with the aims of the Forum, and to ensure a satisfactory flow of information, points of view and ideas across the Membership. It will consist of a number of *Facilitating Teams*. Initially there will be five such teams concerned. Their functions will be as follows:

(a) Liaison and Membership Team

This Team maintains contact with the Membership of the Forum across the country and overseas. It keeps Members informed of Forum activities and it receives and responds to: information on activities relevant to the interests of the Forum; requests from the Membership for assistance in arranging workshops, courses etc.; proposals from the Membership for projects on different nature-society themes; the names of individual Members who wish to make contact with others who share their interest in particular nature-society themes.

(b) The Magazine and Publications Team

This Team will be responsible for the publication of the Forum's magazine, *Nature and Society*. It is also responsible for arranging or facilitating the publication or dissemination of other products of Forum activities, such as pamphlets and articles and programs for the media.

(c) Project Team

This Team assists the Membership of the Forum in:

- the organisation of workshops, courses, discussion groups,
- the preparation of displays, exhibits etc.
- the organisation of community research projects.

The Project Team also initiates and organises such activities.

(d) Advisers Team

This Team consists of individuals from different areas of expertise who are willing to give advice to Members of the Forum on sources of information (eg reading lists, names of possible speakers/lectures) on particular themes or issues.

(e) Administration and Finance Team

This Team will be responsible for administrative and financial matters.

4. The Management Committee

This Committee is responsible for general matters of policy and direction. The present Interim Management Committee consists of a Chairperson, Deputy Chairperson, Secretary and Treasurer, and 6 others. In the future the Committee will consist of 5 members elected by postal ballot of all Members of the Forum, 2 members carried over from the previous Committee, 2 members invited by the incoming Committee, possessing skills or experience relevant to the task.

The Committee will appoint the Director of the Forum and other salaried staff of the Forum as well as the Coordinaters of the Facilitating Teams.

The head quarters of the Nature and Society Forum is in Canberra, ACT.

The Secretary of the Forum is

Robert McArthur

G.P.O. Box 11, Canberra, ACT, 2601.

VI. KESIMPULAN

6.1. Kelompok I : Man, Culture and Nature

A. Report

The focus of the first session was on the great capacity of human beings to adapt to their environment and the part that culture plays in their ability both to achieve continuity and to respond to changing conditions. It was suggested that our ability to do this successfully in the past is the source of hope that we shall be able to do it again now in the face of environmental crisis. Hope, however, is not certainty, for there are limits to adaptability. Various questions were posed.

- 1) Do we have time to adapt before ecological disaster.
- 2) Are the feed-back mechanisms between human culture an the environment which apply to small societies in place in modern western society? This is not a local, but a global culture, and decisions are nearly always made by people who are distant from the problem.
- 3) If there is in fact hope—and the consensus was that there is—then how do we effect the required changes when the system is already so out-of-balance?

Some suggestions emerged:

 The need to recognize that our attitudes towards the environment determine the way that we act and behave towards it. Ecological consciousness has an inner dimension; i.e., we see the environment through the filter of our cultural conditioning, our needs and desires and purposes in life. There is a role for education in changing these.

- The role of religions in nurturing new attitudes was also mentioned, referring in particular to the WWF Network of Conservation and Religion.
- 3) The question arose as to whether change was going to come from the rich nations or from the poor. It was suggested that it is most likely to come from the latter, and that in terms of the capacity to adapt, we need to look to the people at the bottom relying upon their implicit existing knowledge of what is required.

The very great tension which exists in developing countries between the local traditions and the ever growing domination of the global industrial culture was also emphasized. Key questions that have been addressed by speakers and in discussions in the first working session are as follows:

- Adaptation is the survival strategy of the human species. This seems to allow optimism as to overcoming the global environmental crisis (J. Reader). But what are the mechanisms by which these successful cultural practices came about? Can this optimism be based on anything else than the hope that the human species will overcome environmental threats that are culturally induced and of a completely new, planetary scale?
- 2) Traditional cultures maintain a balance with the natural environment, but business corporations, being the core of worldwide expanding capitalism, are based on endless profits (H. Bachtiar), and they have the power. Do we really need endless economic growth?
- 3) This dialectic opposition exists also between indigenous minorities, which acknowledge limits to resources, and nation-states, which are based on 'work ethics' (W. J. Karim' How can we regenerate from the traditional cultures within the new context? (W.J. Karim). How can the masses of the poor all over the world get more power over environmental policy decisions?
- 4) A comprehensive understanding of culture encompasses symbolic structures, attitudes and what is inside us. We need to develop an inner ecology as well. Are educational programs the solution? (R. Williams).

5) How can we come to the right action strategy before it is too late?

Conclusion:

Trying to find the right questions is half of the solution!

B. Discussion on Recommendations

Ishtiaq Khan (UNESCO): You only mention deforestation. There is too much emphasis on deforestation; more should be mentioned on other topics.

John Reader (Great Britain) : That is mainly an editorial oversight and can be addressed. We can take it as real that there is a general awareness of environmental problems.

Ishtiaq Khan (UNESCO) : Is this really the only thing we are worried about ?

Wazir Jahan Karim (Malaysia) . We did mention, in the first sentence, that there are other problems.

Ishtiag Khan. (UNESCO): Why so much emphasis on trees?

John Reader (Great Britain): You are probably referring to the oil problem. Our report has been prepared in a very short time.

Robin Harger (UNESCO-ROSTSEA) : It is not inappropriate that forests are singled out in a long series of natural attributes, because they are one of the things that need to be handled to take care of CO2.

Napitupulu: Do you want to amend to include oil ?

John Reader (Great Britain): There could be more details added, but I am not familiar with how these papers can be written. It would taka more time to improve the document.

Ven. Karma Gelek Yuthok (India) : Referring to the North-South situation. I trust this is an accurate figure.

Roy Williams (Great Britain) : This is a general statement accepted in UN reports and elsewhere.

John Reader (Great Britain) : This leads to the comment regarding the North having to decide what kind of economic growth they want.

Roy Williams (Great Britain) : This is a report of our discussion; it is not

a blueprint or plan. It is a good report of the discussion.

Parni Hadi (Antara – Indonesia) : I don't feel we should single out forests, and thus blame only the South, since the North is a major polluter.

John Reader (Great Britain) : We are not blaming the South.

Zaim Saidi (Consumer movement – Indonesia) . I have a small correction to make regarding page 1 line 9 'consumerism'. This should be 'consumptivism'.

There was further discussion on the terms.

Napitupulu suggests 'informal' education be changed to 'nonformal'. (done)

C. Recommendations

There seems to be a major difference in the way developers from 'outside' and local inhabitants appropriate environmental resources in general and the forests in particular. While the former cut down trees on a massive scale, using destructive bulldozers which remove all other species which are virtually destroyed, local inhabitants tend to cut down trees selectively, using appropriate technology which does not lead to massive destruction. Massive destruction of the forests is also related to global demand giving rise to international collaboration between local developers and foreign traders. Obviously, intercultural understanding is lacking. There is little awareness of or concern for cultural diversity. The North-South situation is problematic because here we have a situation of 1/4 of the world's population, consuming 3/4 of the world's resources.

Developed nations must decide what kind of economic growth and development they want since without this kind of understanding it is impossible for nations to assume any kind of collaborative strategy on the environment. The technical, economic and political aspects of the problem are extremely complex. Economic development and technologically advanced matters of economic management have a disastrous effect on the biosphere. Can advanced nations change their way of life, slow down economic growth and reduce consumerism? Rapidly developing Third World countries may also need to re-examine their policies of economic development, since it is increasingly obvious that they are

moving in the same direction as advanced nations, impinging upon the resources of local communities. Materialism and greed increase human desire. However, traditional cultures had their own mechanisms of self regulation which enabled environmental resources to be preserved in the long term. Rising expectations and conservation of environmental resources seem to work in opposing directions. The Western ideas of individual freedom and democracy go hand in hand with individual economic growth and capitalism. What it lacks is a communal spirit of sharing and regulation which is compatible with the conservation of environmental resources and it is these very societies which practice sharing and regulation which are now on the brink of destruction, caused by cultures practicing individualism and capitalism. Although this economic culture of waste, mismanagement and destruction is based in the West, it has spread to towns and cities in the Third World. We have to address this global economic culture and find ways and means of controlling it.

The group addressed some basic problems of the environment which may provide ideas for further action :

- An examination of value systems which have become dissociated from technical advancement, need rather than greed and fair distribution of resources rather than surplus and profit for a few. Needs, wants and desires create a cultural hierarchy and progression and the last, 'desires' is what is causing the rapid depletion of environmental resources.
- 2) An examination of the rapid population growth, which affects standards of living and prevents the very poor from even enjoying the basic necessities of life. By the year 2100, the population of the world would be about 15 billion. The possibility of observing an equitable distribution of resources for the world's population would be bleak.
- 3) A critical evaluation of how cultures are changing in the short and long term, the extent to which these changes are self-generated or triggered from outside, the negative impact of change on fringe cultures and forest dwellers in the context of depopulation, resettlement, dwindling food resources and new technology and the cyclical

process of repetition of human problems caused by every new advancement in economic life.

- Bio-technology can be harnessed to reduce the environmental crisis by advancing techniques in conservation, recycling, and plastic substitution.
- 5) Bio imperatives relating to food resources, population growth and a consistent balance between processes of production and reproduction must be linked with a recognition of the holistic relationship of man with nature, a recognition of humankind as a collective entity living with other forms of life and the inability to assume any form of mastery over nature in the long term.
- 6) Social costs of natural depletion vis-a-vis economic growth must be highlighted. Independently conducted environmental impact assessment reports must be built in all development projects and the social costs quantified to maintain proper regulation of development.
- 7) To give greater improtance to the role of NGOs in involvement and participation in environmental issues and to encourage a collective network of activities relating to the environment. Also a recognition that these NGOs need external aid from international organizations for them to operate their activities in a continuous way and on a higher level of decision making.
- 8) Elementary, secondary and tertiary education in developed and developing countries should be structured to address the issue of the depletion of environmental resources within the country and globally by promoting environmental education within the social, human and physical sociences and by drawing upon local indigenous cultures to build up effective programs of teaching and research. These programs should be creative, innovative and regenerative and directed towards attitudinal change.
- Nonformal environmental educational programs should be promoted by all agents of socialization, including teachers, parents, village religious leaders and the mass media.
- 10) Traditional ecological knowledge and wisdom can be mobilized to conserve environmental resources although this has to be selectively done since not all forms of traditional knowledge are functionally

effective in conserving and regenerating the environment. Over history many 'native' cultures have disappeared and dwindled in numbers and it is important to give greater recognition to their direct contribution to this wisdom.

11) The importance of including women in decision-making processes relating to development and environmental programs, given the fact that women are the life sustenance forces of agrarian and simpler societies dependent on the environment as the main sources of food and shelter.

Conclusion

The group generally felt that humans have a good capacity to deal with human problems of survival and to appreciate the importance of corrective measures locally, regionally and globally. The group acknowledges the urgency and complexity of the problem and the need to adopt immediate solutions to the problem and the need to adopt immediate solutions to prevent a world catastrophe.

6.2 Kelompok II : Man, Nature and the Sacred

A. Report

This session focussed on the models of sustainable coexistence which some of the ancient traditions still alive today present us with. Several themes emerged:

- 1) The importance of multi-cultural dialogus and exchange at this pivotal moment in our history. It was pointed out however, that at the same time as this grows, there are counter-forces emerging in the form of racism and religious fundamentalism. In these circumstances, it is important to remember that the traditional cultures take a very long view, and this is perhaps one of the attitudes we too should be cultivating.
- 2) In respect of the sacred nature of the world, it was suggested that spiritual degradation and environmental degradation have gone hand and hand. In response it was explained that according to the Tibeten view, human attitudes and actions are the cause of both the good and the bad thins which happen on the planet. We have the capacity

for both the good and the bad, and so if we want to bring about environmental change, it is necessary to learm to cultivate the good and to develop an idea of self-perfection.

This question of the mixed nature of human beings came up on several occasions, when it was emphasized that in all cultures, both indigenous and developed, the tendencies to greed, selfishness, etc. exist. But in sustainable cultures, they are held in check and moderated by cultural factors.

3) In terms of practicalities, it was mentioned that the wisdom of the ethnic culture is not often taken into account in development programs. Any culturally-based program should aim to bring to the surface the existing wisdom about sustainable development which is already present; the knowledge about local medicines, for instance.

There is a tendency for outsiders to romanticize traditional societies; but they are not museum pieces and need to be looked at realistically. They also need to change, but at a pace which is generated from within, not by outside forces.

The presentations of the four speakers provoked considerable comment and questions on the topics given. The responses from the participants were varied and covered a number of main concerns. These may be summarized as follows :

- The problems of population growth and its impact on the environment should be seen in qualitative terms rather than quantitative ones. The Buddhist concept of sharing live earth with all other life species may not be a threat in the quantitative sense, but even though human numbers are comparatively small, their impact is much geater.
- 2) The issue of cultural forms and ways of living in the context of the division between local, indigenous and modern Western dominant cultures. The former preserving stability, the latter causing change. Cultural values are essential to our ways of living and it is important to hold on to those aspects which are in harmony with the environment.

- 3) The problem of whawt might be seen as 'insular' communities e.g. Javanese pantation communities, which possess strong cultural traditions and it is the analysis of these which can help explain the behavior of these peoples remaining within their communities despite low status and rewards, but finding security.
- 4) The issue of the impact of colonialization was raised, generally felt to be malign. Claims were made for the values and ethics of native cultures even though people might believe differently to the principles of their culture. The claim was made that native or indigenous cultures were not rationalistic but universal and the problem for many indigenous people and societies in the developing world is the realization of their own identities.
- 5) It is important that sustainable development should respect the cultures and traditions of humanity, indigenous cultures and the rights of the people in those societies. All cultures have the problem of dealing with change, that might occur with societies or from outside. Local societies should benefit from the 'development' process. There needs to be found a middle way between rationality and intuition to guide our relationship with the natural world.
- 6) The question was raised about the connection between spiritual degradation and ecological degradation. The Buddhist view is that a close relationship does exist. In order to correct the degradation of the physical world we need first to correct human attitudes and behaviors.
- 7) There is the need to balance the contributions and understandings from all cultures -- developed, developing and local, indigenous. Some differences exist as to the concept of development and what this means in terms of the quality of life and well-being of people. There should also be some understanding of the dynamic nature of the relationship between individuals and their cultures.

B. Discussion on Recommendations

Putra (Indonesia) : What exactly is 'environmental healing'?. Pamela Colorado (Canada) : Yes, the environment is ill in a sense. Napitupulu: Dr. Colorado already explained this in her talk. Putra (Indonesia): I still want more clarification on the term and whether your (Napitupulu) believe this.

Napitupulu: In Bali people talk to plants, why not talk to the stones.

W. Weyns (Belgium) : Regarding your definitin of culture. You should include economics specifically in the definition. Group 3 has done so.

Group 2 agrees.

John Reader (Great Britain): I also feel that 'healing' is not accurate. Man may not survive, but the biosphere cannot 'die'. Healing implies sickness and possible death. It is man's use of the environment that needs to be put right.

Robin Harger (UNESCO-ROSTSEA) . As an ecologist I do not recogneze the distinction between man and the environment as John Reader does. If we consider Venus we can see what could occur to the Earth. One cannot recognize the dark without the light or the light without the dark. We are just an animal after all in functional terms.

Napitupulu: But an animal that can be educated.

John Reader (Great Britain) : I think the term 'healing' diverts people from the problem and confuses the issue. Rather, man will better understand the issue if seen in terms of the real threat to mankind's survival. Animals respond to threats to their personal well-being (i.e. act selfishly). This is typical of our species.

Napitupul: The environment includes all beings, man included.

John Reader (Great Britain) : "Over-subsistence' what does this mean ?

Robin Harger (UNESCO-ROSTSEA) : It refers to consuming more than is necessary for human existence.

Kuswata Kartawinata (Indonesia): I did not hear 'sacred' specifically in group 2 as opposed to group 1. People pointed out that 'religion' had been noted.

Francis Childe (UNESCO) : We need to recognize that the paper will have to be edited. Our job is to consider the main points.

Harsja W. Bachtiar (Indonesia): My question relates to content. The explanation of development does not actually define development, only its aim.

Napitupulu (Indonesia) : We can put the definition from group 3.

Marvic Leonen (Philippines) : Regarding the topic of reducing weapons, could we also mention debt reduction? It would be useful to clarify the code of universal environmental ethics. Is this based on religion ?

Leyla Alyanak: When we talked about responsibility to punish violators, we could not come up with solutions. The document should also have a preamble which would address ethics, as opposed to 'religion' as such.

Napitupulu: You could also talk about 'principles' of development, rather than 'ethics'.

Isthiaq Khan (UNESCO): A 'convention' type code can be useful.

Leyla Alyanak: The group felt that conventions are often imposed from the outside.

Robin Harger (UNESCO-ROSTSEA) : We avoided the term 'recommendation' since that has no strength. We used 'code' to indicate that in the end something will emerge that has collective authority.

C. Recommendations

Towards definitions

Religion

Religion includes the belief systems of all cultures, including the so-called indigenous, tribal or native communities as well as the institutionalized world religions.

Development

Development is defined as 'change which results in improvement of the health and well-being, in the widest sense, of people in all sectors of the population, and also in the health and well-being of the environment. The aim of development is human, ecological, societal and cultural wellbeing, which is not to be confused with the rate of material consumption of resources.

Culture

Culture includes the beliefs, values and thinking shared by each group, which shape the collective and individual behaviors of that group, and hence, the changes that group makes to its environment.

Man

is human, not he-man: females and males, children and adults.

Preface

We recognize

- 1) The interdependency of all forms of culture with ecosystems, whether local or global.
- 2) That we inhabit one earth, which is facing crises. That current development strategies and consumption behavior in many countries and regions has the capacity to destroy world, regional and local ecosystems, and with them the bases of the cultures which have adapted to depend on them.
- 3) That the poor and powerless will generally be the first and worst affected by environmental degradation. Thus forms of development which emphasize economic growth and employment over the integrity of ecosystems will be less in the interest of the poor and powerless than care of the ecosystems on which they depend.
- 4) That a plural, multi-cultural society in which member cultures participate equitably provides each nation with a richness of human and natural resources, by retaining a diversity of ecosystems and values and knowledge as to how to manage them.
- 5) The need to respect all religions and systems of belief, including those of both the world institutionalized religions and those which are followed by the so-called indigenous, tribal or native communities.

That there is a need to provide room for all different communities to develop and practice their culture and beliefs.

That the beliefs of the world's widespread and localized religions (the so-called world religions and tribal belief systems) contain vital but overlooked principles as to the sustainable use of the earth.

- The knowledge and understanding held by traditionally based communities of the functioning of ecosystems.
- 7) That no culture is inherently superior to another. That technological advancement is not morally superior to simple living. That material

wealth shows no superiority over spiritual richness and understanding.

- 8) That the crises now facing the earth require a rebalancing of spiritual and social with material rewards. Subsistence is necessary, but not over-subsistence. Quality of life is more easily found in spiritual enlightenment, friendship and khiship, and freedom from stress, than in continual use or development of material resources.
- 9) That cultures are not passive. Each culture has the creative potential to adopt new ideas and technologies consistent with its underlying values, but its changes should be by choice, not made under environmental, economic or political duress.

Recommendations:

- 1) Make a code of universal environmental ethics.
- Call of all faiths to prepare simple interpretations of he environmental principles of their faiths.
- 3) Cut down world expenditure on weapons by half and channel the funds into environmental healing.
- Provide more and clearer information on the environment to religious leaders through multi media.
- 5) Negate greed and reinforce self-restraint as a personal environmental ethic.
- 6) Decision makers should promote rediscovery, renewal and continuation of indigenous traditional knowledge and environmental ethics. Networking is crucial for survival.
- Strengthen communication among political and religious bleaders to encourage environmental healing.
- 8) UNESCO and other relevant U.N. bodies should undertake actions to raise environmental awareness through religous channels.
- Severe moral sanctions should be applied to those who destroy the environment.

6.3 Kelompok III : Development, Environment and Cultural Values

A. Report

Having considered in the previous session the need to preserve and cultivate the diversity of cultures, this session brought out the need to simultaneously act in unity in the face of our ecological problems. The seriousness of the situation that we are in, particularly in respect of global warming through the massive emissions of carbon dioxide which industrialized nations release, was made evident through facts and figures, and the importance of the coming Earth Summit in Rio was obviously mentioned.

Because of the primacy of cultural values in determining our attitude towards the environment, it was suggested that it is only by finding a set of common principles upon which all the multifarious religions and cultures can agree that we can hope to begin implementing the global policies -- and the global regulatory bodies -- that we need. There are ways of doing this which need not impinge upon the unique determination which each people has over the way they live and relate to the environment.

In respect of the relationship between culture and environment, it was pointed out that it is only very recently that the importance of this has been generally recognized; perhaps only in the last ten years. The study of the dynamic interplay between human beings and their environment is therefore only just beginning, and the concepts and the language that we need to think about it are not yet fully in place. We need to create an integrative intellectual framework within which to discuss these things; and clearly this conference is an important step on the way to this.

There were comments about 'media', etc. A suggestion was to use 'all forms of media'.

B. Discussion on Recommendations

The discussion period opened with a question on practical applications of existing knowledge. The point was made that since environmental awareness already exists in society, how can that awareness or consciousness be used and applied in practice? The additional point was made that

people produce resources for other social ends than the simple production of commodities. In this context, how do we extend existing environmental awareness and use of social culture as a way of controlling production of commodities? And what concrete action is needed ?

Stephen Boyden (Australia) : A recent symposium dealt with this same issue. While many people advacate a society with a greater concentration of local groups and their increasing dependence, my suggestion is to reduce this concentration so that local groups become increasingly independent in terms of food, resources and intangible needs, leading to a lower rate of energy resource use (although some would disagree).

The important question is the role of the individual. Such social changes could lead to changes in personal aspirations and consequently changes in behavior.

All this is insufficient, however. While individuals can influence the environment to a certain extent, government action is needed as well. Additionally, the individual can influence the process of social change by exercising his/her power as a member of the electorate and voting only for those politicians who are sensitive to the problem.

Question: A question was asked regarding the difference in atmosphere between the northern and southern hemispheres and how the conditions at the equator might affect these. Also if C12 and C13 measurements had been made on Jakarta air.

Robin Harger (UNESCO-ROSTSEA) : Last year, ENSO brought the most damaging and one of the warmest droughts to Indonesia, which coincided with the coldest season ever in New Zealand so that the connection presumably involves latitudinal air shifts which cause Antartic air to move upwards to New Zealand, etc. At the same time, Unesco and UNEP have a project to measure organic environmental pollutants with a GCMS machine which also gives Indonesia the capacity to do C12 and C13 predictions. These measurements have not yet been made, however.

Question: Do the premises in your paper (Dr. W. Weyns) apply to Europe or to the rest of the world, since statistics show that in the Third World, 40% of people are religious practicants, whereas in Europe, the figure is only 6% ?

197

W. Weyns (Belgium) : While the figure for Europe is low, we cannot underestimate subconscious ingrained attitudes. Even among Europeans, 90% share a similar mentality, even if they are unaware of it. Their deep rooted attitudes remain the same.

Question: In the context of the global economy, what is the extent of deforestation damage in the Third World due to industrialization ?

Rovin Harger (UNESCO-ROSTSEA) : The damage through industrialization is far greater in Europe and the Middle East, where use of forests was extensive for fuel during the Industrial Revolution for smelting iron and steel and as masts for ships during the colonial era. While Thailand has been hard hit, Indonesia is now the only country in SE Asia which still has large stands of forest intact.

Auestion: To what extent will the upcoming Earth Summit help develop northern environmental responsibility ?

Robin Harger (UNESCO-ROSTSEA) : Dua to the quality and level of the people attending, there is some hope, although it has already been made very clear that the process at Rio will be filtered.

Question: What do you say about those religions with an apocalyptic view of the end of the world ?

Robin Harger (UNESCO-ROSTSEA) : All religions have an element of truth. They are mechanisms for looking at a similar concept through different windows. As far as the environment is concerned, we must collect the best from each faith, and then add to it. For instance, one can view biological evolution as the act by which a higher consciousness has created humankind.

W. Weyns (Belgium) : The apocalyptic vision is a problem, because it breeds pessimism. It is typical of traditions which measure time longitudinally by moving towards an Apocalypse, and less common in those traditions measuring their time cyclically.

Question: Is a tropical forest better at soaking up CO2 than another, say a forest of Arctic birch or a secondary forest ?

Robin Harger (UNESCO-ROSTSEA) : All things being equal, if there is enough rain and the structure of trees is appropriate, there will be faster growth in the tropics than in the north. If you're looking for a strategy to absorb CO2, choose the fastest growing forest. Tropical forests are best at storing carbon for two reasons: their potential for quick growth, and their highly diverse structure. On the other hand, some fast growing trees may have very short lives-then what to do because the CO2 will be released back to the atmosphere by decay.

Following up from this question, an answer from the floor from Dr. Kuswata Kartineata of UNESCO: Last year, CO2 produced from tropical forests accounted only for 20% of carbon dioxide worldwide. (Industrial sources are 60%; soil releases. 20%).

W. Weyns (Belgium): To enlarge on this point, the global problem is so huge that even if we did everything possible, we could still not reverse the problem. This is the argument of the nuclear lobby, that we should build more plants since nuclear energy does not contribute to the greenhouse effect. This is of course a stupid solution.

Question: Even in remote areas in Dharamsala where I live, fifteen years ago, there was snow in winter. Now it is almost gone. In the summer we now need fans that were not required previously. In terms of global warming, some countries may even welcome the warmer weather. What is the damage being caused by global warming and what will happen because of it ?

W. Weyns (Belgium) : We have a time lag of about 30 years. If we stop exhausting CO2 today, temperatures will continue rising for 30 years and will only stop then. Unfortunately, there is a lack of government will (i.e. in the US) who cannot agree to standards. Developing countries, too, are industrializing rapidly. Finally, there is a problem of unpredictabity. We do not know what will happen. A tiny change in the Gulf Stream could have disastrous effects.

Stephen Boyden (Australia): At the global level, very little has been achieved. To achieve change, major changes societal arrangements are required. The questions is, can this happen quickly enough ? In Western culture, there is a lack of a certain kind of understanding, among people and politicians. We are also lacking the institutions with which to effect such change. The launch of the Forum is trying to fill that gap. Will it be effective in time? We don't know the answer, but we can only try with great enthusiasm.

John Reader (Great Britain): I would like more explanation about 'core values'.

Jane Clark (Great Britain) : This phrase came from a model from Prof. Koentjaraningrat (Indonesia) about various levels a culture manifests. Napitupulu: Core values are similar to the wooden dolls in Russia with the inner portion relatively hard to change as compared to external matters. Some people in the group did not like the word 'change', but it is tied to positive development.

John Reader (Great Britain): The phrase is still not readily understood. Jane Clark (Great Britain) : Perhaps 'values' would be sufficient.

W. Weyns (Belgium) : Would 'deep-rooted' values be better ? General agreement to change it.

John Reader (Great Britain) : Perhaps it is the deep-rooted values need to change. The proposal presupposes that these values should not change. What about cannibalism?

W. Wyns (Belgium): But it starts from the action program. Cannibalism would not fit in that.

Robin Harger (UNESCO-ROSTSEA) : We are talking about a process. If we want people to react, the text should be clear. The term is not that important.

Antara: Page 2, number 5. What is meant by people's organizations? Does it include political parties.

Joan Ropiha (New Zealand) : NGO does not fit many people's organizations. It could include political groups.

Marvic Leonen (Philippines): In the Philippines we distinguish people's organizations from NGOs. The people's organizations are local, while the NGOs are secondary or tertiary.

Napitupulu: I don't like the term NGO because it makes a distinction between government and non-government that is not helpful.

c. Recommendations

The Problem

The global environment crisis is also a deep culture crisis. The basic problem is that the present dominant development paradigm is not consistent either with the diverse culture values of the world or with environmentally sustainable development. The task is to find the dynamic balance between unity in action programs, based on the diversity of culture values and environments.

Principles

Development is defined as 'change which results in improvement of the health and well-being, in the widest sense, of people in all sectors of the population, and also in the health and well-being of the environment.'

We recognize

- that action programs for development as defined in point 1 can only be effective to the extent that they are consistent with, and dynamically related to, deep-rooted values in each culture.
- -- the value of local participation: knowledge, initiative and participation. To this end, the formulation of policies and plans on micro -- and macro -- levels should be greatly dependent upon people's participation.
- the importance of understanding, information, and awareness as it can lead to desired, culturally acceptable actions consistent with development.
- that development should proceed in an environmentally sound, sustainable manner, in harmony with cultural values which are consistent with the aim.

Action programs

We recommend that :

 Educational programs (both formal and nonformal) should encourage deeper understanding and discussion of the relationship between development, environment, and culture. That programs need to be directed to every level of society: towards decision makers and planners, politicians and businessmen as well as to the grassroots.

In the formulation and implementation of educational programs, the involvement of the local community should be promoted and supported.

- We need to create networks which encourage the exchange of information and ideas between communities nationally, regionally and internationally.
- 4) All forms of media should promote a deeper understanding of the link between development, environment and culture, and be consistent with the principles stated above. Especially, the media should be a communication channel for the expression of local communities.
- 5) In order to be able to implement the principles mentioned above, we need to promote an effective mechanism for the cooperation of nongovernment and people's organizations with government.

LAMPIRAN

Lampiran 1

DECLARATION OF BELEM

Third Science and Culture Forum, UNESCO "Towards Eco-Ethics: Alternative Visions of Culture, Science, Technology and Nature"

Since the second "Science and Culture" Forum in 1989 in Vancouver, new areas of uncertainty and of legitimate concern have increased the urgency of taking action to avert planetary disaster.

Global international order has changed profoundly after the transformations in the Soviet Union and the Eastern Bloc, the introduction of new concepts of warfare by the Gulf War and the erosion of apartheid. The increasing frequency of environmental disasters, the degradation of the economies of prosperous nations, and the tendency to ungovernability that plague nations as a consequence of growing poverty are as alarming as the issues raised in the Declaration of Vancouver: population growth, misuse of fossil fuels, destruction of ecological balance, and the immense disparity between North and South in the use of resources and of wealth.

Widespread poverty at intolerable levels is the major obstacle to solution of planetary problems. And a prerequisite is the urgent need to stop the flow of wealth from the South to the North.

In appealing to Science and Technology to assist in the solution of local and global problems, account must be taken of the connection between Science and Tradition, stressed in the first "Science and Culture" Forum held in Venice in 1986.

205

The moral foundations for an ecological and economically sound order must take into account the complex interrelationship of Science, Culture and Nature in individual and societal behaviour. Particularly, the relations of human beings and their environment must be respected and regulated by universal principles constituting a moral code that might be a new eco-ethics. This calls, first of all, for the preservation of bio-diversity.

At the same time, societal harmony and international understanding demand respect for cultural diversity. These two requirements are linked because cultural diversity constitutes humankind's accumulated reserve of learned responses to the environment that make co-existence and selfrecognition possible.

Preservation of these diversities is the only hope we have for the survival of civilization in its rich variety of cultural forms. The ethics implicit in cultural diversity entails mutual respect, and supports cultural co-existence. Particularly important in this respect is the empowering of women to play a major role in proposing less violent community actions, ecological respect, and the lowering and eventual reversing of population growth.

There is need to recognize the wholeness of nature and man. Even considering the importance of advanced technologies, the invaluable aspects of the traditional cultures provide an important message for today and for the future. Cultures and their traditions have established long-lasting balances with their ecosystems and these models supply important elements of the needed ecoethics. Further, the knowledge stored in the non-Westerm civilizations can be a source of inputs into modern Science. The preservation of bio-diversity – the richest patrimony of the rain forest – is as essential for the future of civilization in the planet as the preservation of cultural diversity in the relations between peoples, nations and states.

New technologies, particularly biotechnology and information technology, are now poised to make a greater and more permanent impact than all prevous industrial technologies. They require a particular ethical posture, so that their adoption and presence will not contribute to the perverse elimination of two essential resources for nature and humankind: bio-diversity and cultural diversity.

Eco-ethics calls for the preservation of both.

Ubiratan D'Ambrosio (Brazil); Alya Baffoun (Tunisia); Pierre Dansereau (Canada); Xu Dao-Yi (China); Susantha Goonatilake (Sri-Lanka); Carl-Goran Heden (Sweden); Sergei Kara-Murza (Russia); Dominique Lecourt (France); Eleonora Masini (Italy); Digby McLaren (Canada); H. Odera Oruka (Kenya); Guilherme de Ia Penha (Brazil); Bertha G. Ribeiro (Brazil); Henry Stapp (United States); Kazuko Tsurumi (Japan); Francisco Varela (Chile).

Belem, Para, Brazil; 10 April 1992

ECO-ETHICS – FINAL REPORT

SUMMARY

(Belem, Para, Brazil, 6–10 April 1992)

Introduction

In the three years following the Vancouver Declaration, drafted at the Second Science and Cultural Forum, the world situation has worsened considerably in all dimensions relevant to Eco-Ethics:

- * poverty has increased in scale and has reached a new qualitative dimension. For axample, "new poors" have appeared in countries and social groups that were until yesterday reasonably prosperous;
- * among prosperous countries the marginalization of those less favoured has reached a critical level leading to a change in the socio-psychological situation, and even to a widespread sense of despair;
- * the erosion of traditional ideologies has led to the loss of "cultural" support for the revivification of the poor and less favoured, and this damages the entire social equilibria already stained in most areas of the world;
- there has been an increase in intolerance to virtually all manifestations of human differences (be these economic or social order, ethnic origin, religious tradition, etc.), including the flourishing of violence, and of local wars of great virulence;
- * organized criminality is on the rise leading not only to economic but also political power having international repercussions.

208

Solutions to global problems must not be forced upon the world by economic, political and military power. Resolution of such problems should be based rather on social and ethical considerations. All must pay their share of the costs if we are to achieve stability and survival with dignity.

Generalized poverty affecting about 80% of the world population is immoral and urgent measures are needed to combat it, especially to end the flow of capital from the South to North. These are essential preliminaries to any proposal for improving the relations of man with nature and reaching global peace.

Integral Vision of Science, Culture and Nature

Science has enhanced the potentialities of human life and has opened the way to a full flowering of human creative capacity. But it is precisely a certain "scientific" conception of ourselves in nature first suggested in the seventeenth century that underlies our present growing economic, ecological, and ethical problems. In this three hundred-year-old idea, science is viewed as an instrument of man's domination over nature, and man himself is viewed as a mechanical component of a machine-like universe.

This "scientific" picture of man and nature has changed profoundly during the present century. Developments in physics, biology, and cognitive science have converted the idea of man as a cog in a giant deterministic machine to man as an organic component of a non-deterministic whole, a component that plays a key role in the creative process that gives form and definiteness to the world around us. This new image of man provides the intellectual foundation of a system of values that is more harmonious with traditional values, and can serve as the moral foundation of ecologically sound world order.

Population

In about 1850 the population of the world reached one billion (1,000 million) and continued to grow at an increasing rate. It doubled by 1930 and reached 3 billion by 1950, 4 billion by 1974 and 5 billion by 1988. It will reach 6 billion by about 1998. Although rates of increase have begun to decline, the number added each year, currently about 95 million, will continue to increase for another 10–20 years and the next doubling, at

present rates, is predicted by the middle of the next century. It would be hard to exaggerate the seriousness of these figures. Population growth is one of the major causes of poverty and is a threat to survival. The whole world is over populated and present trends must be slowed and reversed. The situation demands immediate measures to achieve women's rights, awareness and education, thus reducing fertility. Although economic development and education could lead to further reduction in birthrate, it is necessary to realize that time is short. Relieving the misery of poverty will not solve all problems, but no problem can be solved if we do not face the poverty factor.

Technology

Many technological innovations in the past have resulted in unplanned or unexpected damage to man and the environment. The future will require a massive reorientation to enable us to emerge from our present predicament, and in this, science will have a major role. Currently, by over-use of earth resources and development of technology, we are borrowing from future generations, and by quarrying renewable resources (e.g. soil and water) we are reducing the freedoms of countless beings as yet unborn. The linkages between technology and the economic system should be structured to serve the freedoms and welfare for all. From the non-violent and less harmful technologies, we should make a step to environmentally friendly practices. The relaxation of the Cold War surely demands a transfer of military technology to civilian uses.

Two new generic technologies, biotechnology and information technology, are now poised to make a greater and more pervasive impact than all the industrial technologies and possibly a greater impact than those associated with the neolithic revolution that gave us agriculture.

These two new technologies are characterised by less material and energy use. Their expected exponential penetration into the economy could well result in reducing some of the population and resource stress on the globe. However, because they impinge so intimately on biology and culture, they also raise severe ethical questions.

The impact of both technologies will be differentially felt across the North-South divide. To make sufficient use of their potentialities, it is essential to sustain expansion of scientific training and the funding of local

original research at all levels. Without the flourishing of such a base, new technology will continue to create dependency. A link has to be established between biotechnology and conservation of biological diversity for a truly sustainable development.

Nature and Cultures

There is need for a realization of the wholeness of nature, and of man as an integral part of it. In spite of ever advancing technologies we must recognize that there are valuable aspects of traditional cultures that provide an important message for today and the future. Such cultures may seem simple in today's scientific environment, but many are the result of a longestablisen balance with the ecosystem, and they hold a lesson in eco-ethics for society. The preservation of bio-diversity in tropical rain forests depends upon the cultural autonomy of indigenous peoples who value, use and protect it.

Cultural diversity constitutes humankind's reservoir of the learned responses to the environment that makes co-existence and self-recognition possible. It has to be respected and preserved not only for the dignity of the members of the culture, but also for the survival of the common heritage of humankind. Cultural Co-existence entails mutual respect, and must avoid domination of one culture over others.

Increasingly, recognition is being made of the existence of valid ways of knowing in other cultures. These include knowledge of medicines and plants held by people of the rain forest and similar groups elsewhere. In addition, there exist vast stores of knowledge in philosophy, psychology and medicine in non-western civilizations. Some of these ways of knowing could well allow a symbiotic relationship with modern science, enriching both.

The preservation of eco-systems is linked to exploration, collection, museology, botanical and zoological gardens, archives and libraries. The channelling of resources to technology has left inventories and collections of biological materials of developing countries in low priority. Adequate funding is essential for scientific research and education.

Women

The capacities of women to cope with eco-disasters that endanger their own and their children's survival have been preserved over centuries in different cultural contexts. These capacities must be maintained for use by future societies. Women are forced by circumstances to perceive ecological disasters as they are often the first to suffer. They are also able to mobilize long-term and less violent community actions. Women's education is a priority for slowing and reversing population growth.

Globalization and Localization

Non-western knowledge sources are diminishing rapidly as a hegemonic culture envelopes the globe. This globalizing tendency is being greatly aided by a telecommunication and computer network that girdles the world and can cause a financial decision in one country to immediately affect the fortunes of a poor farmer in another.

This tendency is occurring at a time of scattered ethnic revolts that run counter to it. Often such revolts bring about confrontations between neighbours who for centuries have been porous to each others' cultures. The senseless violence against civilians which marks protagonists in such conflicts forecloses this horizontal flow of culture while leaving them open to the globalization. The importance of local cultures is perversely diminished as th e revolt and its suppression become more violent. There is an urgent need to remain alert to the opposing effects of local cultures and globalization.

Conclusion

One cannot exaggerate the magnitude of the crisis that faces humankind today. Yet we still have the capacity to create for ourselves a sustainable place in nature. Achieving this requires a shift to a new morality drawn from many complementary sources. These sources include the objective findings of science as well as the deepest feelings towards nature expressed in many cultural groups. This new morality – an eco-ethics – can be both the core of a new vision of a sustainable future for our species as well as a guide for effective action.

INTERNATIONAL SYMPOSIUM ON CULTURE AND ENVIRONMENT Bogor, West Java, Indonesia, May 21–24, 1992

GENERAL INFORMATION

1. BACKGROUND

The General Assembly of the United Nations at its forty first session in New York on December 8, 1986 adopted Resolution 41/187 and proclaimed the period 1988–1997 as the World Decade for Cultural Development, under the auspices of the United Nations and UNESCO, with the main objectives being :

- 1. Acknowledging the cultural dimension of development;
- 2. Affirming and enriching cultural identities;
- 3. Broadening participation in cultural co-operation.

The meeting of the Presidents of National Committees for the World Decade for Cultural Development in Asia and the Pacific, in Denpasar, Bali, Indonesia, 1–5 December 1991 had among others recommended an International Symposium on Culture and Environment.

The General Conference of UNESCO at its twenty-sixth session regarding the launching of the decade, stressed the urgency of the measures to be taken for the launching and for the implementation of the Plan of Action for the Decade (26 C/resolution 3.2).

The twenty-sixth session of the General Conference has Proclaimed 21st of May as World Day for Cultural Development.

2. DESCRIPTION AND JUSTIFICATION

The goals and expected tangible outcomes from this event are:

- 1. to share and explore the ecological wisdom as references for exploitation of natural resources for the benefit of human being but at the same time safeguarding the ecological equilibrium.
- to explore the intimate relationship between culture and environment, how the environment conditions our cultural expressions, hor we construct our habitat, what we eat and drink, what we wear——in short, how we live.
- 3. to celebrate the first commemoration of the World Day for Cultural Development, 22 May 1992.

3. DATE AND VENUE

The Directorate-General of Culture, Ministry of Education and Culture, Republic of Indonesia in co-operation with UNESCO Paris, will organize an International Symposium on Culture and Environment (Bogor, West Java, Indonesia, May 21–24 1992).

4. WORKING LANGUAGE

The working language of the Symposium will be English only.

5. PARTICIPANTS

The National Committees or those who are responsible for the acknowledgement of culture and environment in: Sweden, Great Britain, India, United States, Australia, Belgium, Thailand, Japan, Malaysia, New Zealand, the Philipines, Switzerland, Canada, Bangladesh, Nigeria, Brazil, Egypt, and Indonesia are invited to attend the Symposium.

6. ORGANIZERS

The Indonesian National Commission for UNESCO in co-operation with UNESCO Paris and the Directorate General of Culture, Ministry of Education and Culture, Republic of Indonesia.

7. FINANCIAL AND TRAVEL ARRANGEMENT

The Organizers will provide the members of National Committees or those responsible for World Decade for Cultural Development programme in Asia and the Pacific as mentioned above, economy air tickets (special fare/unendorsable) from the capitals of their countries to Bogor, West Java, and return by the shortest route.

Expenses for board and lodging of the speakers and the participants will be borne by the organizers.

8. SUBMISSION OF NAMES OF DELEGATES

In order to allocate enough time for ticket arrangements, the names of the participants are expected to reach the Indonesian National Commission for UNESCO by 21 April 1992.

9. PAPERS

Each speaker is requested to write paper based on activities and programmes undertaken to be presented for about thirty minutes. Each participant may also write a brief paper based on relevant activities in the field of culture and environment. It is expected that the papers of the speakers reach the organizing committee on week before 20 May 1992 at the latest, otherwise the speakers are expected to bring 60 copies of their papers.

10. ACCOMODATION IN PANGRANGO HOTEL, BOGOR

Participants will be accomodated at Pangrango Hotel, Bogor, near Jakarta, Indonesia. The address of the Pangrango Hotel is as follows:

Address :	JI. Pan grango No. 23, Bogor 16143
Phone :	(0251) 328670, 32824
Fax, :	314060
P.O. Box:	74/BOTR

11. LOCAL TRANSPORTATION

A bus service will be provided between Soekarno-Hatta International Airport and Pangrango Hotel (and the Presidential Palace).
12. PASSPORT AND VISA REQUIREMENTS

Participants should be in possesion of a valid passport or another valid document, and are required to abtain their entry visa from Indonesian Embassies or Consulates prior to travel to Indonesia. To facilitate the entry for those from countries where there is no Indonesian Embassy or Consulate, it is essential that they send prior information to the Indonesian National Commission for UNESCO with full details, namely: name, address, position, nationality, date of birth, passport number and dates of issue and expiry date, flight number, and the time of arrial in Jakarta. Upon receipt of this information, the Indonesian National commission for UNESCO will make a request to the Ministry of Foreign Affairs of the Republic of Indonesia for facilitating the granting of an appropriate stay permit or landing visa upon arrival at Soekarno-Hatta International Airport, Jakarta.

13. FOREIGN EXCHANGE REGULATIONS

There is no limit on the amount of foreign bank notes or traveler's cheques which visitors may be bring with them into Indonesia. Foreign convertible currencies and traveler's cheques may be exchanged in banks and by the authorized money changers.

The rate of exchange is approximately Rupiah 2.013,00 for one US Dollar at present, but may vary daily.

14. CLIMATE

The Indonesian tropical climate is pleasant all year round: average temperature is 22 C (80 F) and a relative humidity of around 80%.

15. BUSINESS HOURS

Banks and Government Offices:

Manday —	Thursday	:	08.00 - 15.00
	Friday	:	08.00 - 11.30
	Saturday	:	08.00 - 14.00
Shopping	Centers	ł	09.00 - 21.00

16. OTHER INFORMATION

Bahasa Indonesia is the official language, however, English is spoken widely by the educated Indonesians.

Electric current is 220/240 volts.

17. CORRESPONDENCE

Correspondence may be addressed to :

The Executive Chairman Indonesian National Commission for UNESCO Ministry of Education and Culture Jalan Jenderal Sudirman, Senayan Jakarta 10270, Indonesia.

Cable	:	INDONATCOM JAKARTA
Telex No.	:	44471
Phone	:	583127, 588181
Facsimile	۰:	588 181

Lampiran 3

PROGRAMMES AND SCHEDULE OF THE SYMPOSIUM INCLUDING APPROVED OFFICERS

Wednesday, May 20, 1992	 Arrival at Soekarno-Hatta International Airport Proceed to Pangrango Hotel Stay at Pangrango Hotel Dinner at Pangrango Hotel
Thursday, May 21, 1992	2 ·
07.00 - 09.30	— Breakfast
09.30 - 11.00	 Opening Ceremony at Presiden tial Palace, Bogor
	 Report by the Minister of Education and Culture Speech by the Director-General of UNES- CO Opening Speech by H.E. President of the Republic of Indonesia
11.00 - 11.30	– Break
11.30 - 12.30	 Introductory Statement by the Chairman of the Steering Committee, Mr. M. Makagiansar
	 Keynote Addresses : 1. Minister of Education and Culture 2. Minister of State for Population and Environment

12.30 - 13.30 -	Lunch
13.30 - 14.00 - -	 Proposed Officers of the Symposium Adoption of and Programmes and Schedule
	Team of General Rapporteurs
	1. S. Budhisantoso, Chairman
	2. J.R.E. Robin Harger
	4. Jane Clark
Presentation of Papers on Mar	n, Culture and Nature
14.30 - 15.00	John Reader,
	Man in Nature
15.00 – 15.30	Harsya W. Bachtiar, Man. Natura and Cultura
15.30 – 16.00	Wazir Jahan Karim, The Environment and the Reconstration of
	Culture
16.00 - 16.30	Roy Williams,
	Connecting Culture and the Environment:
	Creating an Ecological Consciousness
16.30 - 17.00	Coffee Break
17.00 - 18.30	Discussion
Moderator : Kuswata Karta	winata
Rapporteur : W. Weyns	
19.00 -	Dinner, hosted by the Governor of West Java
	of the tradisional Indonesian dances and mu-
	sic).
Eridou May 22 1002	
TILLAY, WAY 22, 1992	Brookfoot
U1.UU - U0.UU -	DIEGKIGST

Presentation of Papers on Man, Nature and the Sacred

08.00 - 08.30	Ven. Karma Gelek Yuthok, Man, Nature and the Sacred in Tibetan Tradition
08.30 - 09.00	Helen Ross, <i>Culture in Ecosystems – Australian Ways</i>
09.00 - 09.30	Sjafrie Sairin, Man's Interaction with the Environment: Case—Study of Workers and Plantations
09.30 - 10.00	Pamela Colorado, Man, Nature and the Sacred in the Tradition of the North American Native People
10.00 - 10.30	Coffee Break
10.30 - 12.00	Discussion
Moderator : Nazimuddin Af Rapporteur : Roy Williams	nmed
12.00 - 13.00 -	Free Programme. Arrangement will be made for those wishing to attend Friday prayers
13.00 - 14.00 -	Lunch
Presentation of Papers on De	evelopment, Environment and Cultural Values
14.00 14.30 .	W. Weyns, Toward Common Environmental Strategy in a Culturally Diverse World
14.30 - 15.00	J.R.E. Robin Harger, <i>Culture, Values and Environment: The Di-</i> <i>lemma of Development</i>
15.00 - 15.30	Nazimuddin Ahmed <i>Cultural Heritage and Environment</i>

15.3ú — 16.00		Stephen Boyden, a. Nature Society forum b. Nature and Society Network
16.00 – 16.30		Coffee Break
16.30 - 18.00		Discussion
Moderator : Helen Ross Rapporteur : Leyla Alyan	nak	
18.00 - 18.30	_	Grouping
19.00	-	Dinner
Saturday, May 23, 1992		
07.00 – 08.00	_	Breakfast
08.30 – 10.30	-	Group Discussions (Parallel) Topic I : <i>Man Culture and Nature</i> Discussion Leader : John Reader Repporteur : Wazir Jahan Karim
		Topic II : Man Nature and the Sacred Discussion Leader : Helen Ross Rapporteur : Leyla Alyanak Topic III : Development Environment and Culture
		Discussion Leader : W.P. Napitupulu Rapporteur : Jane Clark
10.30 - 11.00	_	Coffee Break
11.00 - 13.00	-	Preparation of Group's Discussion Written Report
13.00 - 14.00	_	Lunch
14.00 - 16.00	_	Presentation and Discussion of Group's Reports (Plenary) led by W.P. Napitupulu
16.00 - 16.30		Coffee Break
17.00 – 18.00	-	Adoption of the Draft Final Report, and Closing Ceremony

19.00 – Dinner hosted by H.E. the Minister of Education and Culture.

Sunday, May 24, 1992	
07.00 - 08.30	 Breakfast
08.30 - 11.00	 Free Programme. Arrangement will be made for those wishing to attend church services
11.00 - 12.30	 Visit Bogor Botanical Garden
12.30 - 13.30	- Lunch
13.30 – 17.00	 Visit the Indonesia in Miniature Park, Jakarta
17.00	 Return to home countries or stay at Hotel Karya, Jakarta

Lampiran 4

LIST OF PARTICIPANTS

1.	Abbas, Muchtar	:	P3M, Jl. Cililitan Kecil III/12 Kalibata, Jakarta Timur Phone : 8091617 8092971
2.	Achmad, S. Arifin	:	Fak. MIPA/Kimia ITB Jl. Ganesha No. 10 Bandung
3.	Ahmed, Nazimuddin	:	5/1 Gaznavi Road, Dhaka, 327071 Bangladesh
4.	Alyanak, Leyla	:	Editor The New Road Chemin de Gotta d'or 1095 Lutry, Switzerland Phone : (41–21) 391345 Fax : (42–21) 391346
5.	Arief, Alma	:	PPSML—UI Jalan Salemba Raya No. 4 Jakarta 10430
6.	Assegaf, Fardah	: ::	Antara Wisma Antara, Jl. Thamrin Jl. Merdeka Selatan 17, Jakarta
7.	Adonis, Tito	:	Directorate-General of Culture Ministry of Education and Culture Jalan Cilacap 4 – Jakarta Pusat

8.	Bachtiar, Harsja W.	:	Centre for Research and Development Jl. Jend. Sudirman – Senayan, Jakarta
9.	Budhihartono	:	Ketua Jurusan Anthropology-UI Kampus UI Depok, Jawa Barat
10.	Borg, Hans	:	Trade Centre (NGO) c/o KOSGORO JI. Thamrin No. 53 Lantai 17, Jakarta Ph/Fax : 321874 323377
11.	Boyden, Stephen	:	Centre for Resource and Environmental Studies, Australian National University GPO Box 4, Canberra, ACT, 2601 Australia Fax : 61 – 6 – 2490757
12.	Budhisantoso, S	: •	Directorate – General of Culture
			Ministry of Education and Culture Jalan Cilacap 4 – Jakarta Pusat
13.	Childe, Francis		Ministry of Education and Culture Jalan Cilacap 4 – Jakarta Pusat UNESCO Paris (Sector for Culture) 7 Place de Fontanay, Paris 75700 Ph/Fax (1) 45.68 43.08
13. 14.	Childe, Francis Clark, Jane	:	Ministry of Education and Culture Jalan Cilacap 4 – Jakarta Pusat UNESCO Paris (Sector for Culture) 7 Place de Fontanay, Paris 75700 Ph/Fax (1) 45.68 43.08 24 Sidney Street, Oxford OX 4 3AG, Great Britain Fax. 0865 – 52154, Tel. 0865 – 243 – 406
13. 14. 15.	Childe, Francis Clark, Jane Colorado, Pamela		Ministry of Education and Culture Jalan Cilacap 4 – Jakarta Pusat UNESCO Paris (Sector for Culture) 7 Place de Fontanay, Paris 75700 Ph/Fax (1) 45.68 43.08 24 Sidney Street, Oxford OX 4 3AG, Great Britain Fax. 0865 – 52154, Tel. 0865 – 243 – 406 Faculty of Social Science, University of Calgary, 2500 University Drive N.W. Calgary, Alberta, Canada

WWF - Indonesia JI. Pela No. 3 Gandaria Utara Kebayoran Baru PO. Box 7928JKSM Phone 7203095

Director of Ford Foundation

11th Floor, Wijava Centre

17, Feinstain, Allan

18. Hadi, Parni

Jl. Jenderal Sudirman - Senayan
Jakarta
: Antara News Agency
Wisma Antara, 20 th Floor
Jl. Merdeka Selatan 17
Jakarta

Phone 3802386 3844379

19. Hardjasumantri, Kusnadi: Faculty of Law – UGM Jalan Bulak Sumur – Yogyakarta Fax : 0274 87073

•

20. Harger, Robin : UNESCO – ROSTSEA 14, Jl. M.H. Thamrin, Jakarta Fax : 62 21 334498

21. Jessup, Timothy : Director of Culture and Conservation Project WWF Indonesia Programme JI. Pela 3, Gandaria Utara

22. Karim, Wazir Jahan . Women and Human Resources Unit (KANITA), School of Social Sciences University Sains Malaysia, Minden 11800, Penang, Malaysia Fax. (604) 870 918

23. Kartawinata, Kuswata: Sci

Sciences UNESCO ROSTSEA 14, Jl. M.H. Thamrin, Jakarta

24. Khan, Ishtiaq :	Regional Adviser for Culture in Asia and the Pacific UNESCO – PROAP, Bangkok PO Box 967 Prakanong Post Office Bangkok 10110, Thailand. Ph/Fax : 391–0577
25. Koentjaraningrat :	Jurusan Antropologi/FISIP—UI Kampus UI — Depok Jawa Barat
26. Kusumohadi, Soetrisno:	Yayasan Indnesia Sejahtera (YIS) JI. Asem Baris Raya No. 2 Jakarta
27. Leonen, Marvic M.V.F.:	Legal Rights and National Resource Center Inc., Kasama sa Kalikasan (LRC-KSK/Friends of the Earth Phillipines Room 106, Commonwealth Ave. Quezon City, Manila, Philippines 1101 Phone : 9229621 ext. 313 Fax : (00632) - 952197
28. Moniaga, Sandra :	WALHI, JI. Penjernihan I/15 Kompleks Keuangan, Pejompongan Jakarta
29. Makagiansar, M :	BPPN (Badan Pertimbangan Pendi- dikan Nasional) Jalan Gunung Sahari Jakarta Pusat
30. Muchtar, Rusdi :	Center for Social and Cultural Studies, Indonesia Institute of Science. Jl. Gatot Subroto, Jakarta 12190
31. Nurjaya, I Nyoman 💠	Faculty of Law – Brawijaya University

Malang 65145, East Java Indonesia 32. Napitupulu, W.P. Indonesian National Commission for UNESCO Ministry of Education and Culture Jl. Jenderal Sudirman, Senavan Jakarta 33. Putrawan, I Made Department of Environmental • Education Post Graduate Program Komplek IKIP Jakarta Jakarta 13220 Phone • 4897047 Fax 0214897047 34. Prioharyono, J. Emmed Μ. Lab. of Anthropologi-UI • FISIP -- UI Kampus UI Depok, Jawa Barat 35. Padmodipoetro, Soepojo **BPPN** (Badan Pertimbangan • Pendidikan Nasional) JI. Gunung Sahari Jakarta Pusat 37. Reader, John 10 Albany Terrace, Richmond : Tw 106 ON. Surrey Great Britain. Phone: 81 - 948 - 2752 Fax. Care of 81 - 948-1277 Ministry for the Envirement 38. Ropiha, Joan : Private Bag Wellington, New Zealand Phone: (04) 4734 - 090 39. Ross, Helen Centre for Resource & Environmen-: tal Studies, Australian National University, GPD Box 4, ACT 2601, Australia.

			Phone : 61 – 6 – 2492159 Fax : 2490757
40.	Saidi, Zaim	:	Yayasan Lembaga Konsumen Indonesia Jalan pembangunan I No. 1 Duren Tiga, Jakarta Phone : 7971378 Fax : 7981038
41.	Sairin, Sjafri	:	Dept. of Anthropology Faculty of Letters – UGM Jalan Bulaksumur, Yogyakarta
42.	Shaltout, Osama	: `	Diplomatic Attache Egyptian Embassy, Jakarta JI. Teuku Umar 68 – Menteng, Jakarta Phone : 333440 331141
43.	Soedjito, Herwasono	:	Culture and Conservation Project/ Ecologist Herbarium Bogorriense, Puslitbang Biologi – LIPI, Jl. Ir. Juanda 22 – 24 Bogor 16122
44.	Soetardjo, Elly A.	: -	PPK Kosgoro Wisma Kosgoro, 17th Floor Jl. M.H. Thamrin No. 53 Jakarta 10350 Phone : 321874
45.	Suprapto, Riga Adi-		
	W OS O	:	Fakultas Ekonomi – UI JI. Salemba Raya No. 4 Jakarta 10430 Ph./Fax : 082–102–3935
46.	Sielzer, Peter	:	Summer Institute of Linguistics (SIL)

		JI. Kebun Kacang Raya Jakarta
47.	Spaey, Marie	UNESCO — ROSTSEA United Nations Building, 2nd floor Jl. M.H. Thamrin No. 14 Phone : 321308 ext. 807 Fax. : 61 — 21 — 334498 Tromolpos 1273 / JKT Jakarta
48.	Tjitradjaja, Iwan :	FISIP — UI Kampus Universitas Indonesia Depok.
49.	Toisuta, Willi :	Rektor Universitas Kristen Satya Wacana, Jalan Diponegoro 52 — 60 Salatiga 50711
50.	Wayns, Willy :	University Luvain + Ciepac/ Worldviews Wildestraat 14 B—9961 — Assenede, Belgium Ph/Fax: 33/97737594
51.	Williams, Roy :	University of Sussex, Brighton E. Sussex BN 97 RG
52.	Yuthok, Karma Gelek :	Dept. of Religion and Culture, Central Tibetan Administration of His Holiness The Dalai Lama, India Gangchen Kyishong Central Tibetan Secretariat, Dharamsala, H.P. India Ph/Fax : 91 – 1892 – 2685

Lampiran 5

SUSUNAN KEANGGOTAAN PANITIA SIMPOSIUM ANTAR BANGSA TENTANG KEBUDAYAAN DAN LINGKUNGAN 1992

I. PELINDUNG : MENTERI PENDIDIKAN DAN KEBUDAYAAN

II. PANITIA PENGARAH

01. Prof. Dr. M. Makagiansar Ketua 02. Drs. GBPH Poeger Wakil Ketua 03. Prof. Dr. W.P. Napitupulu Sekretaris 04. Prof. Dr. S. Budhisantoso Anggota 05. Sampurno, SH. Anggota 06. Drs. Soepojo Padmodipoetro, MA Anggota 07. Prof. Soedomo Anggota 08. Dr. RE. Soeriaatmadia Anggota 09. Dr. Kuswata Kartawinata Anggota

III. PANITIA PENYELENGGARA

01.	Prof. Dr. S. Budhisantoso	Ketua
02.	Drs. Bastomi Ervan	Wakil Ketua
03.	Fuad Wiyono, SH	Sekretaris
04.	Drs. Suloso	Bidang Keuangan
05.	Drs. Yoyo Subagio	Anggota
06.	Achmad Fathoni	Anggota
07.	MD. Djoko Purwono	Bidang Kunjungan Budaya
08 .	Drs. Tito A. Panggabean	Anggota

09. Abdullah A. Masduki, SH.

10. Sukarna Syarif, MA 11. Drs. Joko Pratomo 12. Dinariani, BA 13. Idawati Marin 14. Dra. Henny Andaresny, A. 15. Dra. Dwi Atmini 16. Dra. Dloyana Kusumah 17. Drs. Rusdi Muchtar 18. Drs. Rameli 19. Dra. Helderia Sitanggang 20. Drs. Ndi Suhendi 21. Umardani 22. Sudiro 23. Rahayu Mulati, SH 24. Yusman Sihombing, SH 25. Sudri

26. Dra. Fadjria Novari Manan

Bidang Hubungan Masyarakat Anggota **Bidang Sekretariat** Anggota Anggota **Bidang Registrasi** Anggota Bidang Persidangan Anggota Bidang Perlengkapan Anggota **Bidang Transportasi** Anggota Anggota Bidang Akomodasi Anggota Anggota Seksi Konsumsi

INTERNATIONAL SYMPOSIUM ON CULTURE AND ENVIRONMENT

Presentation of Papers

æ

Thursday, May 21, 1992

MAN, CULTURE AND NATURE

14.30 – 15.00	Dr. John Reader, <i>Man in Nature</i>
15.00 [.] – 15.30	Prof. Dr. Harsja Bachtiar, Man, Nature and Culture
15.30 - 16.00	Prof. Madhav Gadgil, Caste and Ecology in India
16.00 - 16.30	Dr. Roy Willams, The Natural Contract

Moderator : Dr. Kuswata Kartawinata

Ranporteur : Dr. W. Weyns

Friday, May 22, 1992

MAN, NATURE AND THE SACRED

- 08.00 08.30 Mr. Arthur Amiotte, *Man, Nature and the Sacred in the Tradition of the North American Native Peoples.*
- 08.30 09.00 Ven Karma Gelek Yuthok, *Man, Nature and the Sacred in Tibetan Tradition*

09.00 - 09.30	Dr. Helen Ross, Culture in Ecosystems-Australian Ways
09.30 - 10.00	Dr. Safrie Sairin, Man's Interaction with the environment

Moderator : Prof. Madhav Gadgil Rapporteur : Dr. Roy Williams

DEVELOPMENT, ENVIRONMENT AND CULTURAL VALUES

Environmental Activism

14.00 - 14.30 Dr. W. Weyns, Toward a Common Environmental Strategy in a Culturally Diverse World
14.30 - 15.00 Dr. Robin Harger, The Dilemma of Development, Environment and Cultural Values
15.00 - 15.30 Mr. Hiroyuki Ishi, The Media, Values and Environment
15.30 - 16.00 Dr. Chatsumarn Kabilsingh, Values Tradition and

Moderator : Dr. Helen Ross Rapporteur : Dr. Arthur Amiotte

Team of General Rapporteurs

- 1. Prof. Dr. S. Budhisantoso
- 2. Dr. Robin Harger
- 3. Dr. Peter Siczer

