

JENESYS East Asia Future Leaders Programme 2011/2012

Environment & Community Revitalization

From November 19 to November 30, 2011



The Japan Foundation

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Cover photos (from top, left to right)

1. A prayer engraved on a key chain made by Mr. Masami Ogata
2. Ms. Shinobu Sakamoto, a Minamata Disease survivor
3. Modo Fishing Village, where Minamata Disease was first observed in the 1950s
4. Toshiko san of Okawa Village, where *Jimoto-gaku* is showcased
5. A 500-year old tree beside a temple at Okawa Village
6. Bells at the Memorial Cenotaph for Minamata Disease Victims
7. Mr. Masazumi Yoshii, former Mayor of Minamata City, who champions *Moyainaoshi*

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The participants' reports express the opinions of the authors and do not necessarily represent the opinions of any affiliation or organization.

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Preface

The Japan Foundation organized another East Asia Future Leaders Programme from November 19 to 30, 2011, inviting 27 young specialists in the fields of Environment and Community Development from 16 countries in East Asia.

In the previous century, a great amount of economic wealth was attained; however, it seems to be failing to fulfill something precious in the lives of people, which became clear after reaching a certain level of achievement.

Many people wonder in what kind of a society we might live in peace and happiness. In Japan, people question the direction in which society is heading at present, including the issue of sustainable community development. The 12-day program drew attention to the end result of development and globalization with the example of Minamata city, where people suffered from environmental destruction as consequences of economy-first development.

With increasing interests in a sustainable society, I believe it is timely to highlight the case of Minamata and its positive social transformation. Japan, as one of the first countries in East Asia to experience development as well as its effects, has lessons it can share. It is hoped that such an opportunity can provide these youths a forum within which to exchange opinions and develop solidarity.

This program was realized with the invaluable support of the Ministry of Foreign Affairs, the private sector, public sector, NGOs/NPOs and academic experts. Especially for this group, we appreciate the cooperation of SOSHISHA, the Supporting Center for Minamata Disease; Mr. Masazumi Yoshii, Former Mayor of Minamata City; Mr. Masami Ogata, Storyteller of Minamata Disease Municipal Museum; Minamata Soap Works (Eco-net Minamata); Minamata Disease Municipal Museum; Mr. Tetsuro Yoshimoto, Jimotogaku Network; Village Lifestyle Museum Okawa Region; Mr. Yoichi Tani, Solidarity Network Asia and Minamata; Ms. Shinobu Sakamoto, Solidarity Network Asia and Minamata; Dr. Masazumi Harada, and other organizations and individuals.

In particular, Dr. Yoshiyuki Nagata, associate professor at the University of the Sacred Heart, generously took part as an advisor in the planning and execution of the program with great enthusiasm and generous assistance, which led to the success of the program. We wish to express our sincere gratitude to him and all the parties concerned.

Hiroko Tsuka

Managing Director

Arts and Culture Department

The Japan Foundation

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Program Overview

Program Description

JENESYS: Japan-East Asia Network of Exchange for Students and Youths

The programme was launched by the Japanese government at the Second EAS meeting held in January 2007 in the Philippines. Then Prime Minister Shinzo Abe announced a large-scale youth exchange initiative of US\$315 million to invite approximately 6,000 youths every year, mainly from the East Asia Summit (EAS) member states (ASEAN countries, India, Australia, New Zealand, China, and Korea). The five-year plan was later named The Japan-East Asia Network of Exchange for Students and Youths (JENESYS) and various programs such as invitations, dispatches and cultural exchanges have been conducted.

The JENESYS programme aims to deepen understanding of the different facets of Japanese society, including politics, diplomacy, economics, tradition, and culture, and to form the basis of a future vision and to achieve firm solidarity among the East Asia community among the younger generation. Youths who will determine the future of the next generation are expected to gain an understanding of Japan's society and culture, as well as to promote the growth of a close network among their peers and the formation of a shared identity.

About the Japan Foundation

The Japan Foundation is one of the implementing organizations of the JENESYS Programme. Established in October 1972 as a special legal entity supervised by the Ministry of Foreign Affairs, the foundation aims to deepen understanding of Japan overseas and to contribute to the enhancement of culture and the welfare of humanity in the world through international cultural exchange. It was subsequently reorganized as an independent administrative institution in October 2003. As part of its cultural exchange scheme, the organization carries out personnel exchange programs to enhance mutual understanding among countries and to contribute to capacity development and networking in civil society. In this context, the organization was commissioned by the Association of South-East Asia Nations (ASEAN) to implement the JENESYS programme, under which various programs were outlined. The "East Asia Future Leaders Programme" series, along with other JENESYS programs, has been organized by the Japan Foundation, with the aim of promoting cultural exchanges among youths in various fields.

East Asia Future Leaders Programme

The East Asia Future Leaders Programme is one of the JENESYS short-term exchange schemes, which specifically targets young intellectuals and practitioners of particular activities aged up to 35 years. Each program focuses on a specific theme and emphasizes a series of discussions on thematic issues common to the region, and interaction with Japanese experts and citizens with specific backgrounds. Promising youths from the relevant fields with the related expertise expected to become the leaders of the next generation visit Tokyo and other localities, sharing every moment of the study tour program together and nurturing a bond among the members.

In the fifth year (2011/2012) of the JENESYS East Asia Future Leaders programme, "Environment and Community Revitalization Group" was implemented as one of the four batches of the year for the period of November 19 - November 30, 2011.

Background and Concept of “Environment and Community Revitalization” Group

More people in the globalized world are able to appreciate materialistic wealth today. Yet economic growth has not brought us an absolute fulfillment. We cannot neglect the fact that sacrifices have been made in terms of environmental destruction to achieve economic gains. We have to admit that everyone cherishes the modernized lifestyle with the benefits of civilization. In East Asia, where development is being accelerated, such a situation is relevant, and thus it is appropriate to raise the issue for discussion among young leaders. Japan, the host country of the program, has reached a stage at which people are seeking more essential wealth or fulfillment after experiencing the boom times. Setting such a country as the opening stage, the program focuses on “Environment & Community Revitalization” with the intention of providing opportunities, through sharing the lessons of the past. It is hoped that they will think together about the ideal way of achieving a sustainable community in which the people are content and live in harmony.

The participants visited Minamata city and observed how the community was revitalized, despite the environmental destruction and disruption. They learned that the economy only provided so much in terms of “fulfillment”, which led to a discussion on sustainable society. The city was revitalized by the wisdom that respected the natural environment and its local culture. The participants engaged in the fieldwork of “Jimotogaku” and learned the concept of “knowing enough” instead of “wanting more”, which enabled the community to re-unite through a participatory approach.

They also exchanged views on sustainable life from the viewpoints of different actors, such as the central government, the local government, businesses, non-profit organizations, families, fishermen, farmers, and the community as a whole. They shared the situation in each country and developed an understanding of the common issue. The discussion was expected to contribute to the building of solidarity among the East Asian nations.

Participants

A total of 27 participants were carefully chosen from 16 countries (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam, India, Australia, New Zealand, China, Korea, and Japan). There were 10 male and 17 female professionals in the field of environmental preservation, environmental education, revitalization of local communities, and community development.

List of Participants

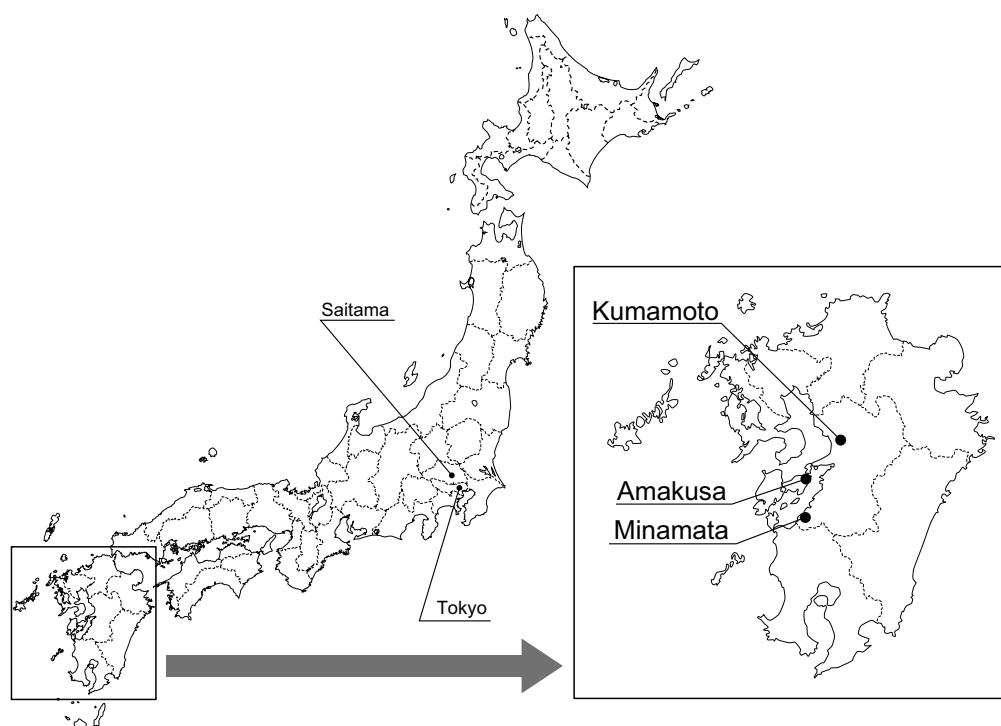
Brunei / ブルネイ	
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Ly Sophorn (Ms.) Deputy Director of Department Nature Conservation and Protection Section, Ministry of Environment	リー ソフォン 課長補佐 環境省自然保護課
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Ngeow Yin Teen (Ms.) Project Executive Singapore Environment Council	ミヤウ イェン・ティーン プロジェクト担当官 シンガポール環境協議会
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Program Itinerary

Date	Program	
Nov. 19 (Sat)	<ul style="list-style-type: none"> Arrival at Tokyo from Respective Home Countries 	<ul style="list-style-type: none"> 来日
Nov. 20 (Sun)	<ul style="list-style-type: none"> Program Orientation Participants' Presentation Informal Welcome Dinner 	<ul style="list-style-type: none"> オリエンテーション 参加者プレゼンテーション 歓迎夕食会（インフォーマル）
Nov. 21 (Mon)	<ul style="list-style-type: none"> Keynote Lecture by Program Advisor Briefing on Field Visit to Minamata Leave Tokyo for Minamata 	<ul style="list-style-type: none"> アドバイザーによる基調講演 水俣ブリーフィング 移動：東京→水俣
Nov. 22 (Tue)	<ul style="list-style-type: none"> Soshisha Minamata Disease History Museum Lecture: Mr. Masami Ogata, Storyteller of Minamata Disease Municipal Museum Minamata Soap Works (Eco-Net Minamata) 	<ul style="list-style-type: none"> 相思社水俣病歴史考証館 水俣病資料館語り部 緒方正実氏 せっけん工場見学
Nov. 23 (Wed)	<ul style="list-style-type: none"> Minamata tour (Chisso Corporation, Hyakken Drainage Outlet, Landfill Park, Modo Fishing Village) Minamata Disease Municipal Museum Lecture: Mr. Masazumi Yoshii, Former Mayor of Minamata city Lecture "Jimotogaku": Mr. Tetsuro Yoshimoto, Jimotogaku Network 	<ul style="list-style-type: none"> 水俣ツアー（チッソ社、百間排水口、埋立地、茂道漁村） 水俣病資料館 講義：吉井正澄 元水俣市長 講義：地元学主宰 吉本哲郎氏
Nov. 24 (Thu)	<ul style="list-style-type: none"> Jimotogaku Field Work Group Presentation Dinner Party 	<ul style="list-style-type: none"> 地元学フィールドワーク シェアリング 夕食交流会
Nov. 25 (Fri)	<ul style="list-style-type: none"> Lecture: Mr. Yoichi Tani, Solidarity Network Asia and Minamata Ms. Shinobu Sakamoto, Patient of Congenital Minamata disease Wrap-Up session of Mianamata Program Leave Minamata for Amakusa Culture Experience: Japanese Style-Hotel 	<ul style="list-style-type: none"> 講義：アジアと水俣を結ぶ会 谷洋一氏 胎児性患者 坂本しのぶ氏 水俣ラップアップ 移動：水俣→天草 日本旅館体験
Nov. 26 (Sat)	<ul style="list-style-type: none"> Leave Amakusa for Kumamoto Kumamoto visit (Kumamoto Castle and Japanese Garden Suizenji) Leave Kumamoto for Tokyo 	<ul style="list-style-type: none"> 移動：天草→熊本 熊本見学（熊本城、水前寺成趣園） 移動：熊本→東京
Nov. 27 (Sun)	<ul style="list-style-type: none"> Group Discussion Individual Site Visit 	<ul style="list-style-type: none"> グループワーク 自由研修
Nov. 28 (Mon)	<ul style="list-style-type: none"> Group Presentation Final Wrap-Up Farewell Reception 	<ul style="list-style-type: none"> 成果発表準備 全体振り返り 歓送レセプション
Nov. 29 (Tue)	<ul style="list-style-type: none"> Culture Experience: Saitama Togyoku Doll Museum, Omiya Bonsai Art Museum, Kawagoe Kitain Temple, Kawagoe Traditional Merchant Houses 	<ul style="list-style-type: none"> 日本文化体験（東玉人形博物館、大宮盆栽美術館、川越喜多院、蔵の町並み）
Nov. 30 (Wed)	<ul style="list-style-type: none"> Departure from Tokyo to Respective Home Countries 	<ul style="list-style-type: none"> 離日

視察先概要



27名の次世代リーダーが勢揃い

11月20日(日) 東京：アジア会館

プログラム初日は、まずは各国から集まったメンバーが、それぞれどのような分野の専門家であるのかを確認しあうために1人10分間のプレゼンテーションが行われた。

参加者からは、高い経済成長と人口増加を続けるEAS地域ならではの切実な問題が報告された。たとえば地下資源の採掘や開発に伴う環境破壊や、地元住民の生活破壊の問題が、インドネシアやタイなどの参加者から報告された。資源大国のオーストラリアからも地下資源開発に関する研究成果が発表された。

山火事や野焼きによる森林破壊や大気汚染の問題については、ブルネイやカンボジア、マレーシアの参加者が取り上げた。増大する一方のゴミや産業廃棄物の不法投棄などに対する問題意識はインドや韓国などの参加者が共有していたほか、シンガポールの参加者からはレジ袋削減の取り組みが報告された。

水質汚染問題や治水対策の難しさ、あるいは電源開発を目的とするダム建設に伴う環境破壊、生活破壊など、



「水」を取り巻く諸問題については、ラオス、ミャンマー、フィリピン、中国、ベトナムなど多くの国々の参加者が言及した。日本の参加者からも、琵琶湖の再生への取り組みや、多摩川における外来種の脅威に関する報告が行われた。「水」に関する報告の多さは、環境問題と「水」が切っても切れない関係にあることを示唆している。

このほかニュージーランドの参加者からは昨年のクライストチャーチ大地震後の復興努力について説明された。

プレゼンテーションに共通していたのは、経済活動の活発化に伴い環境破壊が発生すること。人災にせよ天災にせよ、環境破壊が起きてしまえば地域コミュニティまでもが崩壊の危機にさらされること。そのため環境保全と地域再生を一体で進める必要があるとの指摘などだ。

今回のJENESYSプログラムのテーマである「環境保全と地域再生」の重要性が、参加者のプレゼンテーションからも、改めて確認された。

時間厳守

今回の水俣への旅行中、各国から参加した27名は見事に時間厳守。1回だけ、集合時間にやや遅れた者が出ただけで、あとは全員がキッチリ時間を守って行動していた。時間厳守といえば日本人の専売特許のような印象もあるが、実際にはそうではないようだ。時間管理の概念は国によっても社会によっても異なり、違って当然。時間厳守が普遍的な価値を持っているわけでもない。それでも時間管理が厳密な日本に来たら“郷に入れば郷に従え”とばかり軽々と時間厳守した参加者たち。さすが次世代のリーダーと目される人たち。自己管理能力の高さが時間厳守の態度にも表れていた。

永田准教授が謎を掛けたヒント

11月21日(月) 東京：アジア会館

プログラム2日目は、プログラムアドバイザーである永田佳之准教授が基調講演を行った。ここで永田准教授は参加者に対し、ちょっとした頭の体操をさせた。まず参加者から見えない場所である図形を描き、参加者から1人を選んで図形を見せる。見た者は図形を参加者全員に言葉で説明する。説明を聞いた各参加者は言葉を頼りに正解と思う図形をノートに描く。

最初の図形は、直線と円だけで構成され、言葉で説明しやすく、参加者の大半が正解の図形を描くことができた。ところが2番目に永田准教授が用意した図形は、不定形の曲線が多用されて、言葉では説明しづらいもの。無理やり言葉にしても、イメージが共有できないから言葉の解釈が送りと手と受け手で一致しない。結局、言葉の説明で正解の図形を描けた者はほとんどいなかった。

実は永田准教授は、単なる頭の体操をしたかったわけではなかった。社会の共通認識がまだ育っていない新しい概念を、理解し共有することの難しさが、実感を持って理解できるように仕向けたのだ。というのも「環境保全と地域再生」という今回のプログラムのテーマを考えるにあたってキーワードになるのが、まさに新しい概念である「Sustainability」だからだ。大変重要でありながら、最近10年ほどで急速に使用される頻度が増えた、いわば新参者の言葉。それだけに、Sustainabilityにはまだ確固たる共通イメージが醸成されていない。永田准教授は「抽象的な言葉として一人歩きしているSustainabilityのコンセプトを正しく理解し、共有していくことこそが、われわれの将来にとって非常に重要である」と指摘した。

永田准教授は、未来学者のアーヴィン・ラズロ氏からSustainabilityの重要性について直接説明を受けた際



の言葉を引きながら「われわれの選択肢は2つ。一方を選べばカオスへ、他方ならば成長と平和へ。それを左右するのがSustainabilityである」とし、そのために最も重要なのがEducation for Sustainable Development、つまりESDであると続けた。さらにSustainabilityの概念についてよりよく理解する方法のひとつとして、The Sustainability Compassの考え方を紹介。Nature、Economy、Society、Well-beingの4つの指標でSustainabilityを計るこのコンパスを、プログラムで訪れる水俣に当てはめれば、バランスの取れた状況を見て取れるはずだとした。

永田准教授は、冒頭で紹介した図形を使った頭の体操によって、これから始まるSustainabilityを求める水俣への旅についての、重要なヒントも参加者に与えていた。後々に永田准教授が明かしてくれた説明を借りれば「Sustainabilityが決してリニアな概念ではないことを理解してもらえたら」という思いが込められていたのだ。ちなみに「リニア」には「平板な」や「直線的な」といった意味がある。その言葉の本当の意味を、参加者たちは水俣での体験を通じて深く納得することになる。

水俣病の“語り部”との出会い

11月22日(火) 水俣1日目

ホテルのロビーに集合した際、参加者の一人が誕生日であると知れると、期せずして誕生日ソングの合唱に。水俣の1日目はこうして和気藹々と始まった。この日から、京都大学留学中のタイ人留学生がオブザーバーとして加わりプログラム参加者は28名に増えた。また水俣滞在の4日間を現地コーディネーターとして同行してくれる水俣病センター相思社の永野さんが仲間に加わった。

水俣1日目から水俣病についての本格的な学習が始まった。教室となるのは水俣病センター相思社。バスで相思社へ向かう。駐車場からは徒歩で小高い丘の上にある相思社を目指す。丘の中腹からは青く輝く不知火海が見渡せる。海の美しさからは水俣病の発生が信じられないが、相思社の水俣病歴史考証館では、水俣病の現実が次々と参加者の心を突き刺した。

案内役の相思社・遠藤さんが最初に紹介してくれたのは、1961年当時の漁師の一家団欒の写真だ。食卓には魚が供されている。遠藤さんは「しかし、この時はすでに魚を食べたら病気になることが分かっていた。ではなぜ魚を食べ続けたのか」と参加者に謎をかけ、水俣病が持つ複雑な事情を案内する導入とした。



考証館では、原因企業のチッソ、対応を誤った県や国、病気に翻弄された水俣のコミュニティーなどの実態を展示コーナーごとに学ぶことができた。参加者の関心も極めて高く、わずか1時間ほどの見学中に約20件もの質問がぶつけられた。「病気に侵されたのは猫と人間だけだったのか」「漁師たちは魚以外を食べる選択肢はなかったのか」「チッソは排水を処理してから海に流すことはできなかったのか」「排水と病気の因果関係の特定は難しいと思うが、どうやって特定したのか」「当時の漁業人口はどのくらいいたのか」「海苔を食べることによる被害はなかったのか」などなど。さらには、いったん見学を終えた昼の休憩時間にも、10人ほどが自然に遠藤さんを取り囲み、車座になって質問の続きをするほどだった。不幸にも「Minamata disease」と言えば通じてしまうほど世界の人々に知られる水俣病。関心の高さは、日本人が想像する以上なのかもしれない。

●緒方正実氏による講話

午後からは水俣病認定患者の緒方正実氏による講話を聞いた。講話の前には、会場の広間にある、水俣病被害者の120体以上の位牌を取めた仏壇に向かい合っ
て全員で祈りを捧げた。位牌は人間のものだけでなく、人間より先に水俣病の症
状を発症して死んでいった多くの猫や、水俣病の研究のために犠牲となった猫、
水銀に汚染されていたため埋立地に廃棄された魚たちのものも含まれる。水俣病
の犠牲となったすべての命に全員で祈りを捧げてから、緒方さんを迎えた。

緒方さんの祖父・福松さんが水俣病で亡くなったのは、緒方さんがまだ2歳の
頃だったという。緒方さんは50年以上にわたって水俣病と向き合ってきたこと
になる。緒方さんは「私は水俣病のことを世界のできるだけ多くの人に、正確に知っ
てもらいたいと願っている。今日はそのいい機会だと思う」と話を切り出した。

講話では緒方さんが、38歳まで水俣病であると声を上げることすらできなかったのはなぜなのか。1996年にな
ってから、ようやく病気の申請をしたのはなぜなのか。最初の申請が棄却されてから2006年に勝利するまで
10回もの申請と棄却を繰り返し、それでも諦めなかったのはなぜなのか。その後、水俣病の「語り部」となった
のはなぜなのか等々。長い長い50年間の真実の物語を、約1時間に凝縮した講話に、参加者はみな釘付けだった。

講話が終わると次々と質問の手が挙がる。「水俣病を巡りさまざまな軋轢が生まれたコミュニティでの対立
解消の方法は」「水俣病問題と福島原発問題は似ているのではないか」「50年前と現在とで地方行政は変化したの
か」。そのひとつひとつに緒方さんから丁寧な答えが返ってきた。

「対立の解消法についての結論は、一言では言えない。一人ひとりが知恵を絞って今の水俣を作り上げてきた。
その一人ひとりが何をしてきたか。あまりにありすぎて把握できないし言えない。ただ、さまざまな対立があ
るなかで幼心に『相手の気持ちも少しは分かろう』と思った子供時代の記憶があることは申し上げられる」。

「福島と水俣はまさに同じ問題が根本にある。どちらも豊かさを求める中で起きた出来事だ。幼い頃の水俣の
様子を思い出し、現在の福島と似ている点を感じ、胸が張り裂ける思いだ。また水俣病は正確な情報が伝わら
ずに被害を拡大した面がある。ところが現在はこれだけの情報化社会であるにもかかわらず、正確な情報が必要
な人々のもとに届いていない。そもそも水俣病の教訓を学んでいたら福島原発の事故は起きなかったはずだ」
「水俣病を発生させてしまった頃の地方行政と現在とで、何も変わっていないという見方もある。ただ私はそう
は思わない。水俣病の認定申請を繰り返すなかで、周りからは無理だと忠告された。それでも続けて結局、認
定を勝ち取った。その時『行政も変わったな』と思った。その時実感したのは、我々が行政を信じなければ行政
を支えられないということ。行政、行政と言うが、自分たちの行政である。行政が変わらないとは、自分たち
が変われていないということだ」。

緒方さんの講話の後には、水俣の再生への取り組みの一つとして環境にやさしい石鹼
作りを行っている石鹼工場を見学した。公害病に苦しんだ水俣だからこそ、環境を害
さず、自然への影響を最小限に抑えた石鹼作りをしようというのが、工場の基本的な
考え方だという。相思社から徒歩約10分の石鹼工場では、工場を運営する「エコネッ
トみなまた」の方々の指導で、使用済み食用油を利用する石鹼作りを体験。その後、
食用油で作った石鹼と石油由来の合成石鹼の違いを実感できる実験映像を見た。

合成石鹼を含む水では魚が3分と生存できない実験は、天然成分を使った石鹼・洗
剤の必要性をも物語っていた。実験映像を見た後の質疑応答では、「魚を殺さなくて済
む実験映像はできないのか」と思いがけない質問が出た。相思社の位牌の前で、水銀
汚染の犠牲となり死んでいった猫や魚にも祈りを捧げた後だけに、当然の思いといえ
る。水俣で起きた出来事に対する参加者のかかわり方が、他人事ではなくなってきた



のだと感じられる質問だった。

大量の資料を購入したドンさん

今回のメンバーのなかで唯一、雑誌媒体の編集部員として参加したタイのドンさん(本名:Sujane KANPARITさん)。水俣病歴史考証館の見学後に、館内の売店で水俣病関連の英文資料をあれこれ8冊ほど購入し、両手にかかえていた。聞けば水俣病には関心があったものの、タイではなかなか資料が入手できない。今回は資料を入手できる千載一遇のチャンス。出費は痛い、それよりも、ようやく貴重な資料を手に入れた喜びが大きいという。帰国後は、資料に細かく目を通し、今回のプログラムでの体験や学習の成果を盛り込んで、水俣病に関するまとまった記事を1本書きあげたいのだそうだ。

水俣再生のリーダーが語る

11月23日(水) 水俣2日目

初日の晴天とは打って違って雨模様の水俣2日目。雨の中を、水俣病の元凶であるチッソ工場や、その工場から病気の原因となったメチル水銀を垂れ流し続けた現場である百間排水口、さらには汚染されたヘドロを廃棄した埋立地などを見て回った。それらの視察中にコーディネーターの相思社・永野さん、同・葛西さんから参加者に伝えられた補足情報には、水俣病問題の本質のひとつである人と人との問題に関するものが多かった。

病気が確認された約50年前、被害の大きかった漁業従事者は市人口のわずか3%というマイノリティーであったこと。対してチッソは社員だけでも市人口の10%。家族などの周辺を含めれば人口の6.7割が関係者という存在だったこと。チッソが市の財政を支え、駅や病院スーパーマーケットといった主要インフラが整ったのもチッソがあったからこそ。水俣市は典型的な企業城下町。チッソは水俣の殿様だったのである。こうした事情が被害者に対する差別感情を増幅した。

認定患者の緒方さんは、前日の講話のなかで差別の現実を説明してくれた。緒方さんの実家の家業は漁師の網元。祖父が発病すると、獲れた魚を市場に持ち込むことを拒まれた。伝染病でも遺伝病でもないことが明らかになった後も、差別はなくなる。公害病の被害者でありながら、水俣病のせいで全国から水俣が差別されるのだと二重の差別を受ける。水俣病の騒ぎでチッソの経営がおかしくなれば町はどうなる、という冷たい視線にもさらされる。あげくに補償金をやっかみ「金欲しさに水俣病を名乗る偽患者」といった心ない言葉を患者に投げつける者まで現れる。緒方さんが長く水俣病の認定申請に踏み切らなかったのも、やはり差別を恐れたからだったという。



水銀交じりのヘドロを閉じ込めた水俣湾埋立地では、「慰霊の碑」前で参加者全員が祈りを捧げた。水俣病の被害者は認定患者だけでも約5万人に達する。にもかかわらず慰霊碑に名前を取めているのは300人に過ぎない。未だに差別を恐れて名前を公にしない被害者が多いからだという。慰霊碑を視察しただけでも、水俣病が実はまだ何も終わっていない問題であることが実感される。

埋立地の一画にある水俣病資料館でも参加者の関心の高さがうかがえた。水俣病に関する約15分のビデオを視聴した後、自由視察となったのだが予定の20分間が過ぎても多く参加者が熱心に展示に見入っている。時間ぎりぎりまで熱心にメモを取る参加者も多く、結局、見学時間を10分ほど延長することになった。

次いで訪れたのは茂道漁村。小さな入り江に張り付く120世帯の小集落だ。最も早い時期に水俣病の症状が報

告された村でもある。ここでも参加者は差別の重さを痛感させられることとなった。説明によれば、茂道漁村住民の多くは対岸の天草から、新天地を探して移住してきた貧しい漁師たち。そのため、後に水俣病と判明する、最初の異常が茂道から報告された際にも、行政は真剣に取り合わなかった。報道機関の取り上げ方も中途半端なものだったという。「移住してきた貧しいよそ者たち」の悲鳴を聞く耳を、行政も市民も持ち合わせていなかったことを、参加者は茂道漁村の視察を通して学ぶことになった。同時にそれが未だに克服されていない問題であることも。

コーディネーターの永野さんは、視察のためにバスを降りる前、「水俣病は、この村の人たちにとっていまだに触れたくない話題であることを覚えておいてください」と注意を促した。

●レクチャー：元水俣市長・吉井正澄さん

水俣市は、水俣病の発生によりコミュニティー崩壊の危機にも直面した。認定患者、非認定患者、チッソ関係者、行政関係者など立場による考え方の違い。さらに地縁、血縁、個人的利害が絡み合い、市民の心もばらばらとなった。そんな崩壊寸前のコミュニティーを再生するために立ち上がったリーダーの一人が94年から02年まで水俣市市長を務めた吉井正澄さんだった。その吉井さんからもレクチャーを受けることができた。



1994年の水俣病犠牲者慰霊式で、水俣市の市長として正式に謝罪することからコミュニティーの再生に取り掛かった吉井さんは、レクチャーで水俣における人対人の問題を指摘した。水俣病を、これほどまでに悲惨な公害病とした要因のひとつとして、経済優先の国策とそれに乗ったチッソの存在に加えて、生活基盤であるチッソを守りたいため患者を誹謗中傷した人々のふるまいや、人の口が撒き散らす風評被害を挙げた。

「原爆を投下された広島、長崎と、水俣の違いがわかりますか」と問いかけた吉井さんは「広島・長崎では加害者が外部にいて、だから反原爆で皆がまとまれた。しかし水俣では加害者が水俣城主ともいうべき企業であり、加害者を責めれば責めるほど、住民が苦しむ構造だった」と説明した。

患者と行政、患者とそれ以外の市民、患者同士など、さまざまな対立によって内面社会が崩壊した水俣の暮らしを再生するにはどうしたらいいか。吉井さんは、まずは人と人のつながりを再生し「対立を協調に変換する行為が必要だと考えた」。その第一歩が市長として患者に正式に謝罪することだった。そして崩壊した内面社会を再生する取り組みを「もやい直し運動」として開始する。

吉井さんによれば「もやい直し運動」の主な取り組みは4つ。第1に、市民が「水俣病は公害によるメチル水銀中毒症である」と正しく理解し、誤った理解に基づく偏見・差別をなくすこと。第2に立場の違いで価値観が異なることを、それぞれの立場でお互いに理解できるようになること。第3に、市民それぞれが自らと異なる意見や反対の意見にも耳を傾けるようにすること。第4に、市民同士が新しい水俣づくりについて話し合える関係を作ること。

また吉井さんは、町づくりの基本を、よくある「市民参加の行政」には置かなかったと説明する。逆に「行政参加の町づくり」を基本に置いた。あくまで市民の行動が先出で、それに行政が参加することが重要と考えたからだ。

吉井さんは市長として「もやい直し運動」を進めながら環境都市作りにも邁進する。91年に環境モデル都市づくり宣言をし、94年には環境基本条例を制定。環境都市への第一歩として、市民に呼びかけゴミの徹底した分別を始める。チッソの排水という、いわばゴミによって公害に苦しむことになった水俣だからこそ、ゴミの削減とリサイクルに取り組む、そのための分別だ。現在でも分別は3種類、4種類といった自治体が多い中で、水

候では90年代からすでに19種類、現在では24種類もの分別を、市民の協力で行っている。

現在、水俣には教育機関や自治体、世界各国の研究者やジャーナリストが数多く訪れる。2008年には日本初の環境モデル都市にも指定された。水俣市は「公害都市」から「環境学習都市」へ生まれ変わった。さらに2010年に水俣市は「ゼロ・ウェイスト宣言」し、ゴミを出さない、燃やさない、埋めない町を目指している。

吉井さんが02年に市長を退いて10年。吉井さんが蒔いた水俣再生の種が大きく育ちつつあることを参加者は知ることになった。それだけに、レクチャー後の質疑応答も熱いものになった。地域コミュニティーの深刻な対立の現場で対立解消に取り組んでいるフィリピンの参加者からは「『もやい直し』のような運動をフィリピンでも広めるにはどうしたらいいだろうか」との質問があった。これに対して吉井さんは「1人の力ではできない。多くの人が心を同じくして動かねばならないが、そのためには皆が本当に納得してやらなければ駄目。どうすればいいかの回答はないが、説得や説明だけでは広がらないことを理解し諦めないこと。とくに公務員は、説得や説明だけではいけないという気持ちを忘れずに取り組むべき。そこから運動が広がる可能性も生まれる」と答えた。

「価値観が異なる人々の対立をどう解消したのか」の問いには、徹底した対話の重要性を指摘したうえで、こんなエピソードも披露した。水俣市は企業城下町でありチッソがつぶれても困る。しかし、もちろん患者の救済も十分に行われなければならない。チッソ以外の経済振興も必要となる。どうしても国の力が必要だ。そこで水俣市は東京への陳情団を結成して政府や政党へ働きかける。陳情団のメンバーは患者の関係者、経済振興を掲げる者などさまざま。「目的も利害も異なる完全な異越同舟のメンバーだったが、同じバスに乗り、同じ場所に泊まり、同じ食事をして何回も陳情を繰り返しているうちに変化が起きた。経済振興関係の役所へ行けば、患者関係者はいやでも経済振興派の意見内容を聞いていなければならない。患者救済のための陳情の場面では経済振興派も患者の声に耳を傾けることになる。そうして陳情を重ねていくうちに、双方に連帯感が育まれた。患者側も経済振興の重要性を認め、チッソ側の立場で経済振興を訴える者も患者救済の大切さに気付くようになっていった」。吉井さんはエピソードを紹介した後に、「説明や説得ではない。顔を合わせる機会を作る。そのなかで道が見えてくるもの」と経験を語った。

— 樺を植える吉井さん —

地域再生のリーダーとなり得た吉井さんの、もともとの仕事は林業。プログラムアドバイザーである永田准教授は以前、吉井さんと話した際に「今日の漁獲に一喜一憂する漁業や、来月の収穫が気になる農業ではなく、50年、100年単位で物事を考えざるを得ない林業の経験が、水俣市長としての仕事にも生きた」と吉井さんが振り返っていたエピソードを紹介した。吉井さんは市長退職後は、成長に300年はかかるケヤキの木を自分の山に植えている。永田准教授によれば、「ケヤキが成長する頃には生きていないのに」と指摘する奥様に吉井さんは「死んだ後のことを考えているから植えている。それが幸せなんだ」と答えたという。



●レクチャー：地元学提唱者・吉本哲郎さん

人と人の関係を作り直す「もやい直し運動」と並んで水俣の再生の原動力となっているのが「地元学」。その提唱者である吉本さんは、そのコンセプトを「地域にあるものを探し、元気を作っていく取り組み」と説明する。ないものネダリをしても愚痴が出るだけ。そうではなく、「宝でなくても、リソースでなくてもいい。あるものを、あるものとして探す」。

重要なのは、探す際には自分たちでやることだという。「学者や専門家に頼んで調べてみたこともあったが、結局自分たちの地域について詳しくならなかった。ところがヘタでもいいから自分たち自身で調べてみたら、自分たちの地域に詳しくなることができた」。

こうして地元学を追求し続けて吉本さんがたどり着いた地域再生のひとつのモデルが「生活感幸村」である。「まずは地域が本来そこに持つ豊かな暮らしを再発見する。経済尺度では計れなくてもそこには豊かさがある。地元の人々がまずはその豊かさを再認識し、そのうえで訪れた者に“幸せのおすそ分け”をする。それが「生活感幸村」の考え方だと吉本さんは説明した。



地元学をフィールドワークで体験

11月24日(木) 水俣3日目

水俣3日目のプログラムは、前日に学んだ「生活感幸村」の考え方を実践している村を訪れ、地元学のフィールドワークを体験すること。向かったのは市中心部から東へ約20km、水俣市境に近い大川地区だ。実践の前に「村丸ごと生活博物館」で地元学の若手リーダーである天野さんからレクチャーを受ける。天野さんの指示は「『これは何』『どう使うのか』『どのように美味しいものなのか』など、何でもいいから案内役や出会った村人に疑問、質問をどんどんぶつけ、そこで見つけたものに驚くこと」とアドバイスした。

さっそく地元側の6人が案内役となり、3グループに分かれてフィールドワークに出発。たとえばAグループは出発すると、さっそく道端のムカゴ(山芋の実)をはじめ9種類もの有用植物を、案内役の誘導で“発見”することになる。朝、バスから生活博物館へ向かった際には徒歩5分にすぎなかった山道。フィールドワークでは、たっぷり30分かけて同じ道を降りた。その後も、歩いて通り抜けるだけなら10分ほどの小さな山里を、2時間半かけて探索した。ある民家では、庭先にいるお婆ちゃんに声をかけて話し込むうち、自ら3mほどの竿を操って庭の柿の実をもぎり、われわれにプレゼントしてくれた。聞けば80代だという。地元学は訪れた者を楽しませるだけでなく、地元の人々を元気にする作用も強力なようだ。参加者はすっかり地元学フィールドワークの面白さに目覚めて、生活博物館へ戻った。

●絵地図作成とシェアリング(大川地区・村丸ごと生活博物館)

地元女性陣の手作り料理の昼食をいただいた後、グループごとに絵地図作成に取り掛かる。フィールドワークで見つけた「気づいたもの」や「面白かった事柄」を洗い出してまとめた絵地図だ。各人の発見を提出し、これをカテゴリー分けし、各カテゴリーにタイトルを付ける。これを基に絵地図をまとめる。

グループAは地元学提唱者の吉本さんの指導により、絵地図作りの一環としてグループ集合写真を新たに撮影して絵地図に反映。

グループBは、参加者の発見を最初にじっくり聞く、引き出し上手なリーダー小里さんが作業を誘導。通訳の方まで熱心にカテゴリー分けに加わるほど全員が作業にのめり込んでいた。

グループCは、リーダー井上さんの指導で「今日見つけたものを材料に、大川地区をどう活性化していったら



いいか、提案やアイデアをフィードバックする」要素が加えられた。

最後はグループごとに絵地図を発表。発表された絵地図の共通点のひとつは、全グループが「Water」のカテゴリーを設けていたこと。グループAは、山から流れ出る清流を集落に引き込み、台所の水仕事や農作物の洗浄に使い、さらには池へ流してコイも育てる、合理的で無駄のない水の循環利用の様子を紹介した。

外部の人間でなければ見つけられない「あるもの」も数多く指摘された。たとえばグループBは、村ではありふれた存在といえる「ツバメ(村では幸せを運んでくる鳥とされる)のために軒下に設けた巣棚」に「Birds bring happiness」と副題し、詳細な写真とともに紹介した。日本では当たり前のことながら「家が全部、南を正面にして建っている」ことを“発見”したグループもあった。日本人にとっては気にもならない当たり前の事実ながら、赤道に近い常夏の国から来た参加者にはインパクトの大きい発見だったようだ。

村への提言に取り組んだグループCからは「イラストマップが見られるウェブサイトを作るべき」「村にレストランを作ったらどうか」「都市住民に土地を貸し出してみれば」など、村のさらなる活性化に関するアイデアも提案された。

またフィールドワークで“発見”した合鴨農法の米作りへの関心が高かった。グループ発表後に、地元の人々によってお土産として地元産品が販売されたが、合鴨農法米(1kg)は決して安い価格でないにもかかわらず完売。地元側にとっても予想以上の売れ行きで、村の農業にとっても示唆に富む“発見”となったようだ。

フィールドワークと成果発表に明け暮れた1日の最後は、吉本さんが次の言葉で締めくくった。「地元学は作る、調べる、考えるの繰り返し。そして物を作って加工して売るのも大切。ただし物だけでなく生活文化も売る。これが生活感幸になる。皆さんも国へ帰ってぜひ取り組んでほしい」。

水俣最終日、振り出しに戻る

11月25日(金) 水俣4日目：水俣もやい館

水俣3日目は水俣の再生への動きを追って、「もやい直し」運動や「地元学」について学んだ。翌4日目は水俣最終日。改めて水俣病というものの本質について専門家や認定患者の言葉でおさらいした。

最初に、長年にわたって水俣病問題にかかわり、現在も水俣病患者の支援活動などに取り組む「アジアと水俣を結ぶ会」事務局長の谷洋一さんがレクチャーした。谷さんは、水俣病が解決にはほど遠い状況であり、いまなお被害が継続中の問題であると指摘した。その理由は、まず責任の所在が明確になっていないこと。04年の最高裁判決では県と国の責任が認められたものの、それは「被害拡大の防止を怠った行政の責任であり、チッソが工場から水銀を垂れ流した責任が認められたわけではない」。これだけの公害を起し、なおかつ50年もの歳月が経過してなお、責任の所在が明らかでない。その結果、水俣病に関しては、その責任の所在を巡って現在も5つの裁判が行われている。

また水俣病の全容がつかめていないことも、継続中の公害であることの理由に挙げられた。約30年間にわたって垂れ流された水銀により、不知火海全体が汚染され、魚の流通を通じて微量摂取した人も含めれば、200万人以上が水銀を摂取したと考えられる。ところが微量摂取の影響については未解明。しかも「国が定めた摂取基準値でさえ、それが適切でないことは、当の国の機関の調査結果から見ても明らかだ」という。

さらに水銀汚泥の処理も終わっていない。川や海から回収された水銀を含む大量の汚泥は、現在、八幡残渣プールに埋められているが「そもそも汚泥を安全に最終処理できるはまだ分からず、現在は一時保管に過ぎない。



しかも埋立地であり地震が来れば液状化して噴き出す危険性もある」。

谷さんは最後に水俣病患者の生活面の救済が遅れていると指摘した。チツソは患者と補償協定を結び、患者は金銭支援を受けているが決して十分な金額とは言えない。発生からすでに50年。胎児性水俣病患者の場合は、面倒を見てくれていた家族の高齢化で独居を余儀なくされている者も少なくないのが実態だ。現在はボランティアや支援団体が患者の日常生活を何とか支えている。つまり「社会的な意味においての水俣病も、まったく克服されていない」のが現状なのである。

今回のプログラムの参加者たちは、水俣病の歴史を学び、被害の深刻さを知った。しかし「もやい直し」や「地元学」といった水俣再生への取り組みを通じて、将来への希望を感じることができたはずだ。ところが谷さんのレクチャーにより、参加者は一筋縄ではいかない水俣病被害の深刻な側面を知ることになった。

●お話：胎児性水俣病患者・坂本しのぶさん

胎児性水俣病患者である坂本しのぶさんのお話は、さらにショッキングなものだった。坂本さんは現在55歳。まさに水俣病問題の歴史をそのまま生きてきたのが坂本さんの半生である。その坂本さんの言葉が重かった。

水俣病の影響で、声を絞り出すようにして話す坂本さんは、「水俣病で辛かったことは何ですか?」という参加者からの質問に対し「ヤッ・パ・リ ワ・タ・シ・ノ・お母さん・ノ・コト ウ・ラ・ン・ド・ル・ト・コ・バ ア・リ・マ・ス。イ・マ・ワ ウ・ラ・ン・デ・オ・リ・マ・セ・ン。ミ・ナ・マ・タ・ビョウ・ウ・ニ ナツ・タ・コト・ワ ウ・ン・メ・イ・ダ・ト オ・モ・ウ・テ オ・リ・マ・ス」と答えた。

その坂本さんは「モ・ヤ・イ・ナ・オ・シ・ニ・ワ ハ・ン・タ・イ・デ・ス」と「もやい直し」運動への反対意見を表明した。その理由について坂本さんは、「『もやい直し』は水俣病を解決はしてくれないから」だと説明。谷さんは坂本さんの思いを補足して「世界各地で先住民と侵略者の戦いがあった。たとえば戦いの中で、先住民から和平提案があるのは理解できても、侵略者側から仲良くなろうと和平を持ちかけられても先住民は納得できないはず。水俣病患者の苦しみが一生涯続く中で『もやい直し』は、患者から見ればある種の『和平提案』に見える。最も苦しんでいる坂本しのぶさんのような人には、過去は水に流して新しい町を作ろうという運動に見えてしまっている。そういうことだろう」と解説した。

水俣滞在中に、参加者は水俣病の原因について学び、水俣病患者の苦しみや、事態の経過を知り、一定の解決を前提に「もやい直し」による再生に取り組む水俣市の動きを目にした。再生のための具体的手法の一つである地元学についても体験を交えて学習した。

公害病に苦しんだ地域コミュニティーと患者。しかし50年を経て被害を克服する道筋を見出し、地域の再生へ向けて動き出している——そういう展開であれば、よりわかりやすかったはずだ。

しかし現実にはそうでないことを参加者は谷さんと坂本さんによって思い知らされた。最終日に振り出しに引き戻された格好だ。患者の思いが、「もやい直し」と寄り添うようになるには、まだ何か足りない。参加者はそのことを知ることができた。

水俣での4日間を受けて永田教授は、今回のプログラムの最大の目的である「サステナブル」の理解において、水俣での4

日間は極めて示唆に富む時間だったと評価した。「水俣では多面的な視点の大切さに気付かされ、本当の解決に至るプロセスそのもの、あるいはプロセスを共有することの重要性に気付くことができた」とまとめた。

また東京での基調講演の冒頭、図形を使った頭の体操でSustainabilityの本質をつかむための重要なヒントを提示した永田准教授の意図するところが、水俣最終日に理解することができた。つまり「Sustainability」とは、



決してリニア(直線的)な概念ではないこと。水俣での体験から明らかになったのは、物事の現実はまっすぐに進むのではなく、何かに突き当たったり、曲折を余儀なくされ、曲がりくねりながら進むものであること。そして「Sustainability」とは、そうした現実との折り合いをつけつつ持続性や一貫性を保たねば現実化できない概念であるという事実である。

成果発表

11月28日(月):東京・アジア会館

水俣から戻った参加者は、27日午前中と28日の午前中を費やして研修成果のまとめにとりかかった。6グループに分かれてまとめた研修成果発表が公式スケジュール最終日のプログラムである。発表する内容は①今回訪れた水俣で学んだ内容の分析と②グループメンバーのいずれかの母国が抱える持続不可能な問題を、今回の研修成果を踏まえて分析すること——の2つとされた。

グループ発表で挙げられた各国の問題は「フィリピン・ミンダナオ島のラナオ湖における電源開発工事にかかわる環境破壊問題」、「インドネシアにおける金鉱山開発による水質汚染問題」、「中国における公害問題の現状」、「インドのゴミ問題」、「ベトナムのホーチミン市を流れるドン・ナイ川の水質汚染問題」など。水俣での最終日に講師を務めてくれた谷洋一さんも、東京出張の合間にオブザーバーとして発表会に出席。グループ発表を聞いて「水俣病に通じる問題を、アジア各国が抱えていることを改めて痛感した」と感想を述べていた。



「フィリピン・ミンダナオ島のラナオ湖における電源開発工事にかかわる環境破壊問題」に関しては、地域住民、行政、経済界の利害が複雑に絡み合い住民間でも内部対立が起きるなど水俣と似た状況が生まれている。そのためグループ発表では「すべての当事者が集まって話し合い、『もやい直し』の考えを取り入れることで事態を改善できる可能性がある」と、水俣で学んだ内容をすぐにも生かせる状況があると説明された。

取り上げた問題を「サステイナブル」な解決に導く道を探るためには、コンバスマソッドが使用された。同メソッドはN (Nature)、S (Society)、E (Economy)、W (Well-being) の4つの視点から「サステイナブル」を分析する手法。これを使ってグループごとに問題を分析した。

コンバスマソッドの活用により、N・S・E・Wのバランスの重要性を再認識できる。また、たとえば同じEconomy軸で計った結果、大企業が環境破壊の対象として大きな収益を得る一方で、地元や地元企業、行政などの利益配分が少なすぎるといった問題を発見できるようになるとの報告もあった。

水俣での学びの成果については、水俣病が未解決の問題であるということを感じてきただけに、「終わりはないと認識したうえで、それでも解決に向けて取り組む姿勢の大切さ」を学んだとの発表もあった。「美しい海辺の足元に毒ヘドロが埋められている水俣のように、両極が存在する現実を正視することの重要性」を学んだとの感想もあった。

なおグループ発表会は、JENESYSプログラムの成果を広く知ってもらうために公開で開催。発表会場では一般参加者も傍聴し、発表者との間で質疑応答も交わされた。中国の公害問題に対する中国政府の対応やNGOの活動などが質問され、中国の環境NGOからの参加者が質問に答えるなど、活発な雰囲気のもとでの発表会となった。

●ラップアップ：聖心女子大学永田佳之准教授

発表会の最後を「水俣では破壊のテンションを、創造のテンションに変える取り組みが始まっている点も忘れないでほしい」と締めくくった永田准教授は、最後のラップアップセッションで総まとめをおこなった。

永田准教授は今回の水俣視察を通じて学んだ内容、4つの要素にまとめた。第1が予防原則の重要性だ。「水俣では何事かが進行していることを、人々は感じていたが、科学的に証明されていないことを理由に手が打たれなかった」ことの反省が重要とした。また「予防原則が守られていれば事態は異なっていた」との可能性も指摘した。



第2の要素はESD (Education for Sustainable Development)。今回は水俣で患者や行政、地域活性化の提唱者など、それぞれの立場の異なる人々に話を聞いた。その結果として「批判的な思考、創造的な思考、長期的な思考のいずれもが重要なことを、水俣で出会った人々から教えられた」ことから、ESDの継続こそがサステナブルな社会を実現するために重要とした。

第3の要素はESDにおける学びの姿勢の重要性。単に知識を蓄えるだけでなく、実践し、どうあるべきかを理解し、共生に心を寄せる。さらに社会だけでなく、自分自身も変えよとする姿勢が必要だとする。水俣で出会った、さまざまな立場の人々に共通していた姿勢でもある「まずは自らを変えてみる姿勢」の重要性を指摘する。

第4に寛容と内省の重要性。永田准教授は、水俣病患者でありながらチッソへの赦しを述べ「もし自分がチッソ社員だったら」と自らへ問いかけることのできる、緒方正実さんのような水俣病患者の精神のありように着目。ここに見られる寛容と内省の精神こそが、「Sustainability」に欠かせない要素であり、今回のプログラムで学んだ大きな要素の一つだと説明して、永田准教授はラップアップを締めくくった。

(文責：高岸洋行)

Site Observations

Ready to Lead - 27 Leaders of the Next Generation

Nov. 20 (Sun.) Tokyo : Asia Kaikan

The first day of the JENESYS program began with ten-minute participant presentations to enable the participants from different countries to know one another's areas of expertise.

In these presentations, participants reported about urgent problems in the East Asian Summit region, which is experiencing continuing high economic and population growth. Participants from Indonesia and Thailand, for example, presented about the problems of the destruction of the environment and the lives of local residents caused by mining of underground resources and development. The participant from Australia, a country of great natural resources, also presented research on the impact of the development of underground resources.

The problems of deforestation and air pollution caused by mountain fires and burning of fields were taken up by participants from Brunei, Cambodia, and Malaysia. Participants from India, South Korea, and other countries shared a strong concern about the expanding problem of garbage along with the illegal dumping of industrial waste. In addition, the participant from Singapore reported on efforts to reduce the use of plastic shopping bags.

Representatives from many countries such as Laos, Myanmar, the Philippines, China, and Vietnam referenced various problems surrounding water, including water pollution, the difficulty of flood control policy, and the destruction of the environment and people's lives resulting from dam construction for the development of electrical power resources. From Japanese participants as well, there were reports on the efforts to revitalize Lake Biwa and the threat of non-native species in the Tamagawa River. The prevalence of reports related to water hint at the inseparable connection between environmental issues and water.

In addition to these reports, the participant from New Zealand explained about recovery efforts following the Christchurch Earthquake of the previous year.

What was common to the presentations was the environmental destruction brought about by an increase in economic activity. Further, it doesn't matter whether fires are caused by humans or nature; where environmental destruction occurs, local communities face the threat of collapse. Therefore, participants pointed out that environmental conservation and community revitalization need to be promoted in tandem.

The importance of the theme for this JENESYS Program, "Environment and Community Revitalization," was reconfirmed as a result of these presentations.

Punctuality

During the trip to Minamata, the 27 participants from different countries were admirably punctual. Just once was a person a bit late for the gathering time, and after that, everyone watched the time carefully, moving as a group. When you say "punctuality," you think of something that Japanese people practically have a patent on; however, this is apparently not the case. Concepts of time management naturally differ among countries

and societies; punctuality does not have a universal value. However, when JENESYS participants came to Japan where punctuality is expected, they lightheartedly adopted the attitude “When in Rome, do like the Romans do.” In this way, they really looked like the next generation of leaders. This attitude of punctuality also reflected a high level of self-management skill.

The Hint Dropped by Professor Nagata

Nov. 21 (Mon.) Hotel Asia Center

On the second day of the program, Professor Yoshiyuki Nagata of the University of the Sacred Heart, Tokyo, gave the keynote lecture. In it, he included a bit of “mind exercise” for the participants. First, he drew a geometric figure in a place that was not visible. Then he chose one of the participants and showed the drawing to her. After that, he had the participant use words to explain the figure to the other participants. Each of the participants hearing the explanation then had to depend on the words to draw the figure in their notebooks.

The first figure, composed of only a straight line and a circle, was easy to explain in words, and nearly all the participants were able to draw the correct figure. However, the second figure Professor Nagata had prepared included a number of irregularly curved lines, and was hard to explain in words. Although great effort was made by the second participant selected to describe the shape, no image was held in common by the participants. Thus, the listeners had to make their own interpretations, and the image of the speaker and those of the listeners did not match. In the end, almost no participants were able to make a correct drawing based on the explanation.

Professor Nagata was not simply trying to make participants do an exercise in their heads. He had wanted to enable the JENESYS participants to experience the difficulty of understanding and sharing a new concept for which there is not yet a common understanding in the society. This is important because a key word in thinking about “Environment and Community Revitalization,” the theme for the program, is a new concept of “sustainability.” This concept is extremely important, and the frequency with which it is used has increased rapidly in the last ten years. Yet, as a word, “sustainability” is a newcomer. As might be expected, therefore, no solid, common image of the word has been developed. Professor Nagata pointed out that correctly understanding and sharing this abstract and pliable concept of sustainability will be extremely important for our future.

Professor Nagata quoted futurist scholar Ervin Laszlo whose explanation of the importance of sustainability he had heard directly. “The alternative evolutionary paths that now open for society can be illustrated by two “scenarios”: a breakdown and a breakthrough scenario.” In Laszlo’s explanation, the first leads to rising stress in the economic, social and cultural spheres and growing degradation in the ecological sphere, and the second leads to peace and cooperation emerging as the foundation of a sustainable world. For this reason, continued Professor Nagata, what is most important is Education for Sustainable Development, or ESD.

Professor Nagata then introduced the thinking behind the Sustainability Compass, a method for enhancing understanding of the concept of sustainability. This “compass” measures sustainability, using the four indicators of Nature, Economy, Society, and Well-Being. Professor Nagata said that if participants applied this compass to Minamata during the upcoming tour, he expected that they could discern whether the situation was in a sustainable balance.

Through the mind exercise using geometric figures, Professor Nagata started participants off with an important hint for the upcoming trip to Minamata, which would focus on sustainability. To borrow an explanation that

Professor Nagata divulged later on, the exercise incorporated his thought that: "I would like you to understand that sustainability is not a linear concept." Participants would come to grasp the true meaning of these words through their experience in Minamata.

Meeting *Kataribe* Who Speak about Their Minamata Disease Experiences

Nov. 22 (Tues.) Day 1 in Minamata

When participants gathered in the hotel lobby, they learned that it was the birthday of one of the participants. Without any hesitation, they burst into a chorus of the birthday song. The first day in Minamata began on this congenial note. Starting on this day, a Thai student at Kyoto University joined the group as an observer, making for a total of 28 participants. In addition, Ms. Nagano of Soshisha, the Supporting Center for Minamata Disease, joined the group as a local coordinator for the four days in Minamata.

The earnest study of Minamata disease began right away in Minamata. The classroom would be Soshisha, the Supporting Center for Minamata Disease, to which the group headed by bus. After arriving in the parking lot, participants walked toward Soshisha up a small hill. From the middle of this hill, the group could see a gorgeous view of the shining blue Shiranui Sea spreading out in the distance. From the sea's beauty, it was hard to believe that it was the origin of Minamata disease. However, at Soshisha's Minamata Disease Museum, the realities of Minamata disease began to pierce the hearts of the participants one by one.

The first thing that Mr. Endo, the guide from Soshisha, introduced was a photograph from 1961 of a happy gathering of a fishing family. Fish was laid out on the table to eat. Ms. Endo quizzed participants: "But at this time it was already known that eating fish caused the sickness. Why did they continue eating fish?" This was an introduction to the complex situation of Minamata disease.

In the various exhibit corners of the Museum, participants were able to learn the realities of Chisso, the company that caused the disease; the prefectural and national governments that made mistakes in their handling of the disease; and the Minamata community that suffered from the sickness. The interest level of the participants was extremely high, and during the short one-hour visit they asked more than twenty questions. "Were those affected by the disease just cats and humans?" "Were there no other food choices for fishing families other than fish?" After Chisso treated the effluent, couldn't they dispose of it in the sea?" "I believe it was difficult to identify the cause-effect relationship between the effluent and the disease? how was this determined?" "At that time, what was the population of individuals involved in fishing?" "Was there no damage from eating dried seaweed?" etc. etc. Even during the lunch break after the tour had been completed, about ten of the participants surrounded Mr. Endo, sitting in a circle and continuing to ask questions. Unhappily, the words "Minamata disease" are known by people across the world. Thus, the interest in it is probably higher than Japanese people imagine.

Speech of Masami Ogata

In the afternoon, the group heard a speech from Masami Ogata, a certified Minamata disease patient. Before this speech, all of the participants had visited the Buddhist altar in the meeting space hall, where there were more than 120 mortuary tablets for Minamata victims. There they had offered their prayers. The tablets were not only for humans, but also for the many cats that showed early symptoms of Minamata disease and later died, cats that were sacrificed for research on Minamata disease, and mercury-polluted fish that were thrown away on reclaimed land. Once the group had prayed for the lives of all of those who had been victims of Minamata disease, participants were

ready for the speech from Mr. Ogata.

Mr. Ogata said that when his grandfather, Mr. Fukumatsu, died of Minamata disease, Mr. Ogata was only two years old. Thus, he has been dealing with Minamata disease for over 50 years. He began his speech by saying: “I want to help as many people as possible know accurately about Minamata disease. I believe today is a good opportunity for this.”

Why in his speech did Mr. Ogata say that he was not able to raise his voice and say that he had had Minamata disease until he was 38 years old? Why in 1996 did he at last apply to be certified as a Minamata disease patient? Why, after his first application in 1996 was rejected and he applied and was rejected a total of ten times, did he not give up until he won certification in 2006? After that, why did he become a *kataribe*, one of the people who volunteers to speak publicly about Minamata disease? Mr. Ogata condensed this long and true 50-year tale into a one-hour speech that had participants riveted to their seats.

Once his speech ended, hands were raised one after another to ask questions. “What were the methods for relieving the various frictions in the community that arose surrounding Minamata disease?” “Aren’t the Minamata disease problem and the Fukushima nuclear problem similar?” “Has the local government changed in the 50 years between that time and now?” Mr. Ogata responded carefully to each one of these questions.

“Concerning the methods for relieving frictions, I can’t express a conclusion in one word. We have created the current Minamata through each person contributing as much wisdom as she or he possibly can. What has each one of these people gone through? There is so much that it is impossible to grasp or say. However, I can humbly mention that, in the midst of various conflicts, it would be good to remember what your mind was like as a child, when you thought things like: ‘Let’s understand the other person’s feeling better.’

“Fukushima and Minamata truly have the same problem at their core. Both of these incidents took place amid the demand for abundance. I do feel points that resemble the current Fukushima when I remember the Minamata of my childhood, and it breaks my heart. There was a facet of the problem in Minamata, too, in which correct information was not communicated and this exacerbated the damage. Even though we have reached the point now of becoming such an “information society,” accurate information is not being delivered to the people who need it. I also think that had the lessons of Minamata been learned, the Fukushima incident would not have occurred.

“Some people do have the opinion that nothing has changed in the local government from the time that Minamata disease arose until the present. However, I am not of this view. When I was applying over and over again for certification as a Minamata disease patient, I was warned by others that my effort was useless. Still, I continued, and ultimately I won the certification. At that time, I was able to feel: ‘Gee, the government has changed.’ And I felt that if we don’t believe in the government, we are not able to resist it. We talk about ‘the government did this,’ or ‘the government did that,’ but the government is ours. If the government is not changing, it means we are not changing.”

After Mr. Ogata’s speech, we visited a soap factory to see an example of efforts to revitalize Minamata through making environmentally friendly soap. The basic thinking behind the factory is that because Minamata suffered the effects of a pollution-related disease, people in Minamata should not pollute the environment and should make soap in a way that is least harmful to the environment. Thus, in the soap factory that is only a ten-minute walk from Soshisha, we experienced making soap from used household cooking oil under the supervision of people from the group Econet Minamata. Following that, we watched a movie that depicted the differences between soap made with cooking oil and soap made from a petroleum-based composite.

An experiment in the movie showing that fish could not live for three minutes in water in which the synthetic

soap was used spoke to the necessity of soap and detergent made from natural ingredients. However, during the question and answer session after the movie, an unexpected question came up: “Can’t a film be made without killing fish?” Following a prayer in front of the memorial tablets at Soshisha for cats and fish that had died of mercury poisoning, this was a natural thought. The question seemed to signal that participants had ceased to feel like “others” in their relationship with those who had perished in the events of Minamata.

Mr. Kanparit Buys Many Books

Mr. Sujane Kanparit was the only magazine editor among the participants on the trip. After the Minamata Disease Museum tour, he went to the museum store and purchased eight English-language books, which he carried in both arms. When I asked him about them, he said he was interested in Minamata disease but that it was difficult to obtain such materials in Thailand. This visit was a once in a lifetime chance to obtain the materials. While the expense was painful, he said he felt great happiness in having the precious books at last. His plans are to return to Thailand, read through the books carefully, and write an article about Minamata disease incorporating his program experiences and learning.

Leaders in Minamata’s Revitalization Speak

Nov. 23 (Wed.) Day 2 in Minamata

The weather changed suddenly to a rainy second day from the clear sky of the first day. In the midst of the rain, we traveled to see the Chisso factory that was the main cause of Minamata disease, the Hyakken Drainage Outlet that emitted the methyl mercury that was the source of the sickness, and reclaimed land where the polluted sludge had been disposed of. Mr. Endo, the coordinator from Soshisha, as well as Mr. Kasai, provided supplemental information, mainly related to the relationships of human beings with one another that were at the heart of the Minamata disease problem.

About 50 years ago when the disease was confirmed, the fishermen who were severely impacted comprised only 3% of population of Minamata and were a minority. In contrast, Chisso employees amounted to 10% of the population. Further, if one adds in family members and people involved in other ways, the total connected with Chisso amounted to 60 or 70% of the population. Chisso supported the city from a financial perspective, and the important infrastructure of Minamata ? the train station, hospital, and supermarket ? were all created because Chisso was there. In this way, Minamata-city was a prototypical “company castle town,” with Chisso as the feudal lord. This situation increased the discrimination felt by the Minamata victims.

Mr. Ogata, a certified patient, explained the reality of the discrimination. His family had led the fishermans’ union. When Mr. Ogata’s grandfather developed the disease, he was prohibited from bringing fish to market. Even after it became clear that the disease was neither communicable nor genetic, the discrimination did not end. In fact, victims actually faced an additional layer of discrimination because their presence could stir discrimination against the city of Minamata throughout Japan. These victims bore the brunt of the cold-hearted view that that the town would face an uncertain fate if Chisso’s management faced problems due to uproar over the disease. Ultimately, there were even people who expressed resentment about the compensation payments and made heartless comments to the patients calling them “phony patients who want to use the name ‘Minamata disease’ to

make money.” Mr. Ogata said that the reason he did not apply for certification as a Minamata disease patient for a long time was likely because he feared this discrimination.

The participants all prayed in front of the Minamata Memorial located on reclaimed land from Minamata Bay in which the mercury-mixed sludge had been encased. The number of certified Minamata patients alone has reached 50,000. However, there were not more than 300 people’s names inscribed on the memorial tablets. It is said that even now, many patients fear discrimination and do not want their names made public. Even just seeing these memorial tablets, participants could feel that the problem of Minamata disease has truly not ended.

The high level of interest of the participants was also in evidence at the Minamata Disease Municipal Museum, which was located on one side of the reclaimed land. After watching a 15-minute video about Minamata disease, participants had a chance to explore the exhibits freely. Even though the planned time had been exceeded by 20 minutes, participants continued enthusiastically looking at the exhibits. Many participants carefully took notes up until the last minute, and the time of the visit had to be extended ten minutes.

The group next visited the fishing village of Modo. This was a small town of 120 households clinging to a small inlet. It is also the village where the first symptoms of Minamata disease were reported. Here, too, participants were pained by the weight of the discrimination that had occurred. According to the explanation, the majority of the people in Modo were poor fishing families who had moved from the village of Amakusa on the opposite shore seeking new land. As a result, even when Minamata disease was identified through the first strange conditions being reported from Modo, the government did not take serious action. The way in which the press took up the issue was also half-hearted. Participants learned through this trip to Modo that the government and citizens did nothing when they heard the first screaming voices of these “poor, immigrant outsiders.” They also learned that this problem has not yet been overcome.

Ms. Nagano, the coordinator, warned the group before getting off the bus for the visit: “Please remember that Minamata disease is a topic that the villagers don’t like to touch upon even today.”

Lecture : Former Minamata Mayor Masazumi Yoshii

As a result of Minamata disease, Minamata also faced the crisis of the destruction of its community. Some of this was due to different ways of thinking among the certified patients, non-certified patients, people connected with Chisso, and government officials. Adding to this were the entanglements of regional affiliations, blood relationships and individual interests. As a result of these different perspectives, the core feeling of citizenship became dissipated. One of the leaders who stepped up to revive this community on the brink of destruction was Mr. Masazumi Yoshii, who served as mayor of Minamata from 1994-2002. The group was lucky to be able to hear a lecture from him.

In 1994, at the annual Minamata Disease Victims Memorial Service, Mayor Yoshii made an official apology for the Minamata disease problem and launched initiatives to promote the recovery of the community. During his lecture to the JENESYS group, he focused on the problem of human relations in Minamata. In Mayor Yoshii’s view, what had caused Minamata disease to become the pollution-related tragedy on such a large scale was not only Japan’s national policy prioritizing the economy and Chisso jumping on that bandwagon. Another factor was that Chisso was the base of people’s livelihood in Minamata, and that people tried to preserve Chisso through behavior that included slandering patients and spreading damaging rumors.

Mayor Yoshii asked the group: “Do you know what was different between Hiroshima and Nagasaki after the atomic bombings and Minamata? In Hiroshima and Nagasaki,” he explained, “an outsider had caused the damage so people became united in opposition to the atomic bomb. However, in Minamata, the cause of the damage was a

company that was equivalent to a feudal lord in the city. The structure was one in which the more one attacked the company, the more residents would suffer.”

How could one revitalize life in Minamata where the society’s intimate, interpersonal relationships had been destroyed through conflicts between patients and the government, patients and other citizens and among the patients themselves? Mayor Yoshii thought that one first had to restore bonds between individuals - “that action to change conflict to conciliation is needed.” His first step was to apologize officially as mayor to the patients. Then he began the *moyainaoshi* movement aimed at restoring the inter-personal relationships that had been destroyed.

According to Mayor Yoshii, there are four main initiatives within the *moyainaoshi* movement. First is for the citizens to understand correctly that Minamata disease was caused by methyl mercury pollution and to eliminate prejudices and discrimination based on mistaken understanding. Second is for the citizens to understand one another’s perspectives by recognizing that people will hold different values by virtue of their differing situations. Third is for all citizens to listen to opinions that are different from or in opposition to their own. Fourth is to build relationships that enable Minamata’s citizens to discuss creating a new Minamata with one another.

Mayor Yoshii explained that he did not establish the philosophy of town planning in Minamata as the usual “local government in which citizens participate.” Rather, he promoted the opposite - “town planning in which government participates.” This is because he thought it was important to be clear that the actions of citizens come first, and then government participates.

While promoting the *moyainaoshi* movement, Mayor Yoshii also worked vigorously towards Minamata becoming an “Environmental Model City.” In 1991, Minamata issued a proclamation of its intention to become an Environmental Model City, and in 1994, the city enacted a Basic Environmental Ordinance. As a first step towards becoming an Environmental Model City, Mayor Yoshii called upon the citizens and started a comprehensive garbage-sorting program. Because Minamata-city had been harmed by effluent from Chisso - in fact, garbage - the activity was aimed at reducing garbage and promoting recycling. Even now, there are many municipalities that sort only three or four types of garbage. However, with the cooperation of the citizens, Minamata sorted 19 types even beginning in the 1990s and, at present, the city sorts 24 types.

Now many educational institutions and municipalities, as well as researchers and journalists from all over the world, come to visit Minamata. And in 2008, Minamata was designated as Japan's first Environmental Model City. Minamata has changed from a "pollution city" and been reborn as an "environmental learning city." Further, in 2010, Minamata made the "Zero Waste Declaration," aiming to become a city that doesn't throw away, burn, or bury waste.

It has been ten years since Mayor Yoshii retired in 2002, and the participants came to know how much the seed he had planted for Minamata's recovery was growing. Because of this, the question and answer session after his lecture became dynamic. A participant from the Philippines, who was involved in trying to resolve a deep conflict in the local community, asked: "What should I do to implement a movement like *moyainaoshi* in the Philippines?" To this, Mayor Yoshii replied: "You can't do that with the power of one person. You have to move with the power of many people of the same mind, and to do this, it won't work if you don't truly convince everyone. I have no particular answer to what you should do, but you should realize that the movement will not spread only through persuasion and explanation. You should approach government officials never forgetting that things will not work just on persuasion and explanations. From this understanding, possibilities for spreading the movement will arise."

To the question "How did you eliminate the conflict among people with different values?" Mayor Yoshii pointed to the importance of comprehensive dialogue, and opened his heart about the following episode. The situation was

that Minamata was a corporate castle town and that there would be problems if Chisso collapsed. However, at the same time, patients needed to be provided with enough aid. Economic revitalization outside of Chisso therefore became necessary, and this could only be accomplished with the power of the national government. To gain the support, Minamata formed a group of petitioners to go to Tokyo and reach out to the government and political parties. The members of the petitioning group were diverse - including those connected with patients and those advocating for economic revitalization. The members of the group had completely differing goals and interests, but they got on the same bus, stayed at the same lodgings, and ate the same meals. After repeatedly bringing petitions so many times, a change occurred. If the group met with economic development agencies, the patients had to listen to the opinions of the economic revitalization faction even if they didn't want to. Where there was petitioning for economic support of the patients, the economic revitalization group had to listen to the patients' voices. Through the process of submitting multiple petitions, a feeling of solidarity developed between the two sides. The patients came to realize the importance of economic revitalization, and those advocating for economic revitalization from the Chisso side came to realize the importance of economic support for patients. After Mayor Yoshii introduced this episode, he summarized his experience. "It is not explanations or persuasion. It is creating opportunities for face-to-face encounters. Through this, the road forward will become clear."

Mayor Yoshii Plants Zelkova Trees

Mayor Yoshii, who became a leader in community revitalization for Minamata, had worked previously in the forestry industry. Professor Nagata related an occasion in the past in which Mayor Yoshii had said to him: "In contrast to today's fishing industry which is focused on the day-to-day catch or farming industry which is worried about next month's harvest, my experience with the 50-year or 100-year time units in the forestry industry is alive in my role as the Mayor of Minamata." After Mayor Yoshii retired, he planted Zelkova trees, which take 300 years to grow, on his mountain. Mayor Yoshii's wife said, "But when the trees are grown, you won't be living."

According to Professor Nagata, Mayor Yoshii answered, "I planted them thinking about things after my death. That makes me happy."

Lecture: Tetsuro Yoshimoto, Advocate of Jimoto-gaku

Alongside the *moyainaoshi* movement, the initiative of *jimoto-gaku* is contributing momentum for the revitalization of Minamata. Mr. Yoshimoto, an advocate of *jimoto-gaku*, describes the concept in this way: "*Jimoto-gaku* is an initiative in which people search for things in the community and create joy. If you ask about something that's not there, you will only hear complaints. Even if what is there is neither a treasure nor a resource, you search for what is there from what is there."

Mr. Yoshimoto said that what is important is that people search the community by themselves. "There were times we tried investigating with the assistance of scholars and experts," he said. "However, they did not become familiar with the community. It doesn't matter if the work is unskillful. If people try investigating on their own, they become knowledgeable about their community."

By continuing to pursue *jimoto-gaku* in this way, Mr. Yoshimoto arrived at a model for community revitalization called "Village Lifestyle Museums." "First, communities rediscover the fundamental abundance they have. Even if this cannot be measured by economic indicators, there is abundance. The local people first need to become

conscious again of this abundance. Then they share a ‘gift of happiness’ with visitors.” Mr. Yoshimoto explained that this was the way of thinking behind the Village Lifestyle Museums.

Experiencing *Jimoto-gaku* Through Fieldwork

Nov. 24 (Thurs.) Day 3 in Minamata

The program on the third day in Minamata was to visit a village implementing the Village Lifestyle Museum concept, which was learned the day before, and to experience fieldwork in *Jimoto-gaku*. The group headed for the Okawa District located near the edge of Minamata about 20 kilometers east of the city’s heart. Before this, at the Village Lifestyle Museum, the participants heard a lecture from a young leader in *jimoto-gaku*, Mr. Amano. Mr. Amano’s instructions were to ask the guides and the people met in the village “What is this?” “How do you use it?” “In what way is this tasty?” - whatever. He advised participants just to keep asking about things they don’t understand and questions they have, and to keep track of their discoveries and what surprised them.

Immediately, six local people stepped up as guides and participants left for the fieldwork divided into three groups. “A Group,” for example, quickly discovered nine types of useful plants by the roadside including, first and foremost, *mukago* (the fruit of a yam) under the lead of their guide. When the JENESYS group headed from the bus to the Lifestyle Museum in the morning, the walk on the mountain road had taken less than five minutes. During the fieldwork, participants spent a full 30 minutes going down the same road. Afterwards as well, participants spent two and a half hours exploring a village hamlet that was so small one could pass through it in ten minutes. When people called to an old woman in the garden of a private home there, the woman maneuvered a three-meter pole to pick persimmons, which she gave to the group as presents. When participants asked, she said she was in her eighties. *Jimoto-gaku* not only brought enjoyment to the people visited; it also seemed to have a strong effect in giving energy to the local people. Participants returned to the Lifestyle Museum awakened to the enjoyment of *jimoto-gaku* fieldwork.

Making Picture Maps and Sharing (Village Lifestyle Museum, Okawa District)

After having lunch made by the local female staff, each group started to work on making picture maps. They were picture maps that drew out the “things noticed” and “interesting things” discovered during the fieldwork. Each participant submitted discoveries which they divided into categories, and then placed titles on each category. Based on these categories, the groups created summary picture maps.

Group A, under the guidance of *jimoto-gaku* advocate Yoshimoto, retook a group photo and included it in their map.

Group B first listened carefully to participants’ discoveries and Ms. Ori, who was very good at drawing people out in conversation, guided the work. Everyone was so involved in the work to the point that the group even engaged the translator in dividing the discoveries into categories.

Group C, under the leadership of Mr. Inoue, added the element of: “With the ingredients that you discovered today, how would you vitalize the Okawa District? Please give feedback with your plans and ideas.”

Lastly, each group presented its map. One of the things the maps had in common was that all of the groups had established a “water” category. Group A introduced a rational, non-wasteful life cycle of water use in which the water flowing down from the mountains was brought into the village, used in the kitchen for water-related jobs and

washing fruits and vegetables, and later run off into the pond to cultivate carp.

A large number of things were pointed out that only outsiders to the community could have discovered. For example, Group B saw the common “nesting shelves” for sparrows under the overhangs of Japanese roofs. They introduced the nesting shelves through detailed photos with the caption “Birds Bring Happiness.” (Sparrows are considered birds that bring happiness.) There was even a group that “discovered” what is a matter of course in Japan - that “all of the houses are built with the front door facing south.” Even though this is an obvious fact that a Japanese person wouldn’t care about, the discovery had a big impact on participants who came to Japan from countries near the equator with perpetual summer weather.

From Group C, which aimed to make a proposal to the village, various ideas to vitalize the village were suggested, including “a Web site where the picture maps can be seen.” “What about making a restaurant in the village?” and “What if land was lent out to residents of the city?”

The interest in the *aigamo* rice cultivation method, in which ducks are employed to eat weeds instead of using chemical fertilizer, was also high when “discovered” during the fieldwork. In fact, when the local people sold their products as souvenirs, the rice sold out even though the price of the one-kilogram packages of rice cultivated through this method was not cheap. The local people sold more than they expected, and for the local farming industry, this too was a “discovery” full of hints.

At the end of a full day of fieldwork and presentation of results, Mr. Yoshimoto concluded the day with the following words “*Jimoto-gaku* is a repetition of creating, investigating, and thinking. It is also important to create things, put on the finishing touches, and sell them. However, we are not only selling things, but also daily culture. This becomes the joy of life. I would love for you to return to your countries and implement *jimoto-gaku*.”

Final Day in Minamata: Returning to the Starting Point

Nov. 25 (Fri.) Day 4 in Minamata: Moyai City Hall

On the third day in Minamata, participants had explored movements aimed at the revitalization of Minamata, learning about the *moyainaoshi* movement and *jimoto-gaku*. This day, the fourth day, was the last day in Minamata, and participants experienced a review of the essential aspects of Minamata disease from an expert and a certified patient.

First, participants heard a lecture from Yoichi Tani who has been involved with the issue of Minamata disease for many years and who serves as director of Solidarity Network Asia and Minamata, whose activities include assistance to patients. Mr. Tani pointed out to the group that Minamata disease and the damage is still ongoing and that the problem is still far from being solved. The reason for this, he said, is that, first of all, the locus of responsibility is unclear. In 2004, the Supreme Court of Japan acknowledged the responsibility of failure to prevent the spread of the *disease* but not the responsibility for causing the disease in this way: “The Government of Japan and Kumamoto Prefecture are responsible for failing to prevent the spread of the disease; Chisso’s responsibility for releasing the methyl mercury is not acknowledged.” This extent of pollution has occurred, fifty years have passed, and the locus of responsibility is still unclear. As a result, five ongoing court cases are still pursuing the responsibility for Minamata disease.

Mr. Tani also said that the reason that the full picture of Minamata disease is not being grasped is that the pollution problem is still ongoing. As a result of mercury being released for approximately 30 years, the Shiranui

Sea became completely polluted. Owing to the circulation of the fish, one can consider that over 2 million people absorbed the mercury, including those who absorbed it in small amounts. However, the effects of small amounts of absorption are not yet clear. "Even the standards set by the government for mercury absorption are not appropriate and this is obvious looking at the country's own research results," he said.

Furthermore, clean up of the mercury-polluted mud has not been completed. A large volume of mud, including mercury gathered from the rivers and sea, is presently buried in the Hachiman Pool. However, it's unknown when the mud will be safely dealt with in a final manner, and the current situation is nothing more than temporary storage. Furthermore, if an earthquake was to occur in the area of the reclaimed land, the mud could liquefy and be released in an eruption.

Mr. Tani lastly pointed out that assistance to support the livelihood of Minamata disease patients has come too late. Chisso made reparation agreements with the patients, and the patients are receiving funds. However, one cannot say that the assistance is sufficient. Fifty years have already passed since the Minamata disease outbreak. In the case of the Minamata disease patients affected in-utero, many are unavoidably being left alone due to the aging of their family members. Volunteers and assistance organizations are somehow managing to support patients in their daily lives. In other words, the current situation is that: "From a societal point of view too, Minamata disease has not been overcome."

The participants on this JENESYS program learned the history of Minamata disease and the severity of the damage. However, with efforts such as *moyainaoshi* and *jimoto-gaku* aimed at the revitalization of Minamata, we expect participants were able to feel hope about the future. Nonetheless, as a result of Mr. Tani's lecture, participants learned the serious damage from Minamata disease that is hardly straightforward.

Speech: Shinobu Sakamoto, Congenital Minamata Disease Patient

The talk from congenital Minamata disease patient Shinobu Sakamoto was even more shocking. Ms. Sakamoto is now 55. She has truly lived this half of her life in parallel with the history of Minamata disease. Her words were heavy. Because of the effects of Minamata disease, she had to strain to get her voice out. A participant asked: "What was painful about Minamata disease?" She answered: "I...felt...resentment...toward...my...mother. But...now...I...don't...resent her. I...think...having...Minamata...disease...was...my...fate."

Ms. Sakamoto declared her opinion against the *moyainaoshi* movement, saying: "I...oppose...*moyainaoshi*." As to her reason, Ms. Sakamoto explained that "*moyainaoshi*" would not fix Minamata disease for her.

Mr. Tani supplemented Ms. Sakamoto's thought, saying: "In various places all over the world there have been battles between native peoples and invaders. If, for example, a peace plan comes from the native peoples in the midst of a battle, one can understand that. However, if the invading side puts forward a plan to get along, we can hardly expect that the native peoples will accept it. From the eyes of the patients, *moyainaoshi* in the midst of the suffering that will continue for the rest of their lives looks like this kind of 'peace proposal.' For the people like Ms. Sakamoto who are suffering the most, it looks like a movement to wash away the past and create a new town. Probably this is what she means," Mr. Tani explained.

During the stay in Minamata, participants learned about the causes of Minamata disease, the suffering of Minamata disease patients, and the changing situation of Minamata disease. They also observed the movement of the city of Minamata to use *moyainaoshi* in order to vitalize the city under the premise of a fixed resolution. And they learned and experienced *jimoto-gaku*, a practical method for revitalization.

One sees a local community and patients suffering from a pollution-related disease. However, 50 years later they

discover a route to overcome the disease, and are starting a movement to revitalize the community. If this were the evolution, it would be easier to understand.

However, participants learned from Mr. Tani and Ms. Sakamoto that this is not the reality. On the final day, participants were pulled back to the starting point. The feeling of Ms. Sakamoto was that if she got closer to the idea of *moyainoashi*, something would still be missing. Program participants were able to understand her feeling.

Looking back at the four-day stay in Minamata, Professor Nagata gave it a high evaluation for being time filled with hints related to understanding the concept of "sustainability" - the priority of the program. He summed it up this way: "In Minamata, participants realized the importance of viewing things from multiple angles, a process for arriving at a true resolution, and the importance of sharing that process in common."

Also, on the last day in Minamata, participants came to understand Professor Nagata's intention in using the mind exercise with geometric figures during his keynote address in Tokyo as a way of hinting at the essence of sustainability. He had aimed to communicate that "sustainability" is not a linear concept, and the experience in Minamata showed clearly that the reality of something does not progress in a straight line. To realize sustainability, one needs to continue to aim towards the goal, even as one repeatedly moves forward and back and gets diverted to the side. Sometimes, just like the group's experience in Minamata, we think we see the answer, and in the next second we must return to the starting point. In the face of this, we need to have an attitude of perseverance.

Final Group Presentation

Nov. 28 (Mon.) Tokyo: Hotel Asia Center

The participants who returned from Minamata spent the mornings of Nov. 27 and 28 summarizing the results of the study tour. Public presentations of the results of the tour from the six groups were noted on the final day of the official program schedule. The content for the presentations was: 1) To analyze the content learned on the trip to Minamata; and 2) To touch upon the results of the study trip in analyzing issues related to unsustainability in the participants' home countries.

The issues participants raised in the group presentations included environmental damage caused by power plant construction by Lake Lanao on the island of Mindanao in the Philippines, water pollution caused by gold mining development in Indonesia, the current pollution situation in China, the garbage issue in India, and water pollution in the Dong Nai River which flows through Ho Chi Minh City in Vietnam. Yoichi Tani, who served as a speaker to the group on the final day in Minamata, also participated as an observer at the presentation event while on a business trip in Tokyo. On hearing the presentations, he offered his feeling: "I felt again strongly how Asian countries are dealing with the same problems that surround Minamata disease."

Concerning the problem of the environmental damage caused by power plant construction by Mindanao's Lake Lanao, the interests of the local residents, government, and businesses are intertwined in a complex way. Even among the residents, internal conflict is occurring - and a situation similar to Minamata is arising. Because of this, the participant from the Philippines explained: "There is a possibility that by bringing all the parties involved together to talk that we can introduce the concept of *moyainoashi* and improve the situation." Thus, he said, there is an immediate opportunity to make use of the content learned in Minamata.

In order to seek a path towards "sustainable" solutions for the issues raised, the Compass Method was used. This method analyzes sustainability from four points - N (Nature), S (Society), E (Economy), and W (Well-being). The

participants divided into groups and used this method to analyze the issues.

Through application of the method, participants reaffirmed the importance of a balance among North, South, East and West. In addition, for example, one group reported that as a result of measurement using the same Economy axis, one could discover that, on one hand, a large company destroying the environment could earn substantial profits, but that the distribution of profits to the locality, local companies, the local government and others is too small.

One group presented about their learnings from Minamata, saying that because the group felt strongly that the problem of Minamata disease had not been resolved, “It is important to have the attitude to work to resolve the problem with a base of understanding that the problem has not ended.” There was also the thought that: “Like Minamata where poisonous sludge is buried under the beautiful seashore beneath ones feet, one must carefully observe a reality which encompasses the existence of both poles.”

In order to enable the results of the JENESYS Program to be known more broadly, the group presentation was open to the public. Members of the general public came to the presentation hall and engaged in a question and answer session with the participants. Questions concerning how the Chinese government was addressing pollution and NGO activities in China were asked, and the program participant from a Chinese NGO responded to the questions, helping to create a dynamic atmosphere for the presentation session.

Wrap-up: Professor Yoshiyuki Nagata, University of the Sacred Heart, Tokyo

Professor Nagata provided this closing following the presentation event: “I want you not to forget the point that actions to change from the tension of destruction in Minamata to a creative tension have started.” Then he summarized the final wrap-up session.

Professor Nagata summarized the content learned through the Minamata study visit in four elements. First is the importance of the Prevention Principle. “In Minamata, people felt that some kind of thing was progressing, but they used the reasoning of a lack of scientific proof not to do anything.” It is important to reflect and learn from this. Also, he pointed to the possibility that, had the Prevention Principle been followed, the situation might have been different.

The second element is ESD (Education for Sustainable Development). On this trip, participants heard from patients, government representatives and advocates working for the revitalization of the community, each having a different perspective. As a result, participants were taught by the people they met in Minamata about the importance of critical thinking, creative thinking, and long-term thinking. Based on this, participants realized the continuation of ESD itself is important for realizing a sustainable society.

The third element is the importance of one’s attitude toward learning. One should not simply accumulate knowledge, but experiment, understand how things should be, and put one’s mind towards creating symbiotic relations with others. Also necessary is the attitude that one must not only change society, but oneself. Professor Nagata pointed to the importance of a common attitude of the people from various perspectives that we encountered in Minamata - “first one must try changing oneself.”

Fourth is the importance of tolerance and introspection. Professor Nagata drew our attention to the spirit of Minamata patients such as Masato Ogata who, despite his status as a patient, expressed forgiveness for Chisso, asking the question: “What if I were a Chisso employee?” Professor Nagata closed the wrap-up session, saying: “The tolerance and introspection seen here is an essential element of ‘sustainability’ and a significant learning from this program.”

(Original Japanese Records by Hiroyuki Takagishi)

Lecture Records : Keynote Lecture (November 21)

Challenges of ESD in Asia and the Pacific Towards a New Century of Sustainability

Yoshiyuki Nagata
Programme Advisor,
Member of ESD-MEEG (UNESCO HQ),
Assoc. Prof., Univ. of the Sacred Heart, Tokyo

Program for International Exchange / Cooperation

- * For a host country to make friends ?
- * For a host country to show its strengths ?
- * For a host country to show off its beauty ?

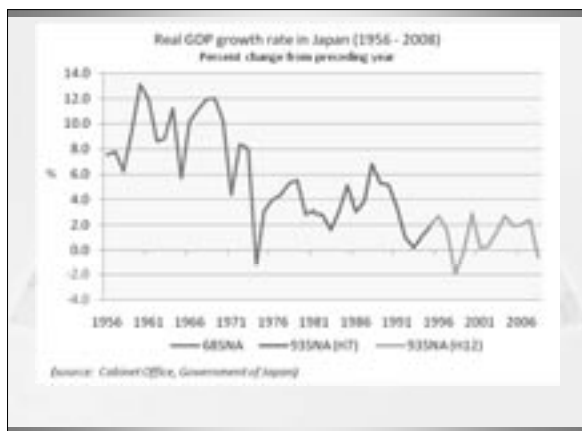
Characteristics of Environment & Community Revitalization Program

For a host country:

- * to share its weaknesses
or bitter experiences
- * to share its wisdom
- * to share its alternatives

→ Minamata as a field full of wisdom by
change agents.

Why SD?



Rapid Development, but ...

水俣・新潟展
MINAMATA Niigata Exhibition

Photo : Minamata Forum

Minamata Disease



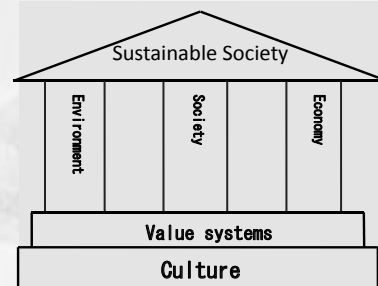
An irony

- * Especially after Minamata, so many efforts have been made for environmental protection. But they did not necessarily lead to solution.

Why?

They were issues not only environment, but also...

Three Pillars of SD



CORE ISSUES 1

Environmental Issues

- Conservation of natural resources
- Control of climate change
- Sustainable urbanization
- Disaster prevention and mitigation

UNESCO Bangkok 2005

CORE ISSUES 2

Socio-Cultural Issues

- Fulfillment of human rights
- Guarantee of peace and human security
- Gender equality
- Good health (e.g., HIV/AIDS prevention)
- Good governance
- Reinforcement of intercultural/international understanding
- Preservation of cultural diversity

UNESCO Bangkok 2005

What are ESD and DESD?

- ESD
Education for Sustainable Development
- DESD
Decade of Education for Sustainable Development



UNESCO

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A wise man said ...

We cannot solve problems by using the same kind of thinking we used when we created them. (...) We have to learn to see the world anew.

Albert Einstein

ESD is not only for new skills / knowledge

ESD as a new vision of education, ... a vision (...) addressing the complexity and interconnectedness of problems.

UNESCO-UNEP 2008. *Youth Xchange*.

ESD: A new pedagogy. (...) a new approach to learning. (...) Educators become facilitators of learning for change. ...

IUCN CEC Communication

ESD as a Paradigm Shift

- * Fragmented thinking ⇒ Systems thinking
- * Mechanistic view ⇒ Ecological view
- * Teaching-oriented ⇒ Learning-oriented
- * Top-down control ⇒ Bottom-up process
- * Competition ⇒ Collaboration

Model of Sustainable School/Community



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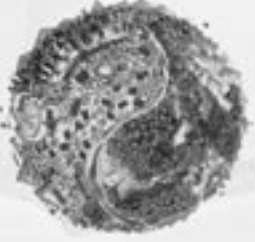
www.suschool.org.uk

The Eight Doorways (Sustainability Themes)

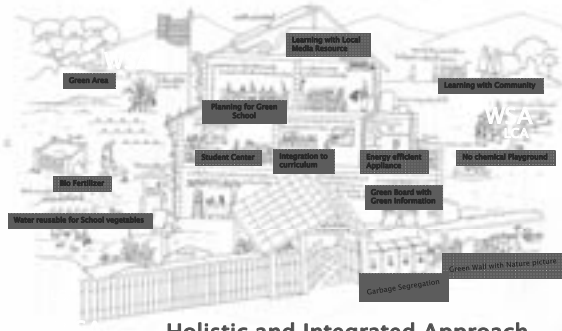
- 1) Food and Drink
- 2) Energy and Water
- 3) Travel and Traffic
- 4) Purchasing and Waste
- 5) Buildings and Grounds
- 6) Inclusion and Participation
- 7) Local Well-being
- 8) Global Dimension

His Majesty, King Bhumipol (Pumipon)

* “To be a tiger is not important. The important thing for us is to have a sufficiency economy, which means to have enough to survive.”




Thai Environment Institute



Holistic and Integrated Approach

Thailand Environment Institute (TEI) 'Sufficiency towards ESD'

Seven Activities



Thailand Environment Institute (TEI) 'Sufficiency towards ESD'

What is ESD for you?





Photo: Y. Nagata

What is ESD for you/your community?



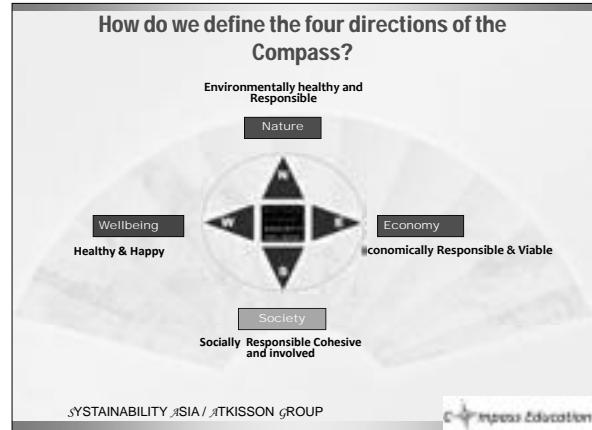
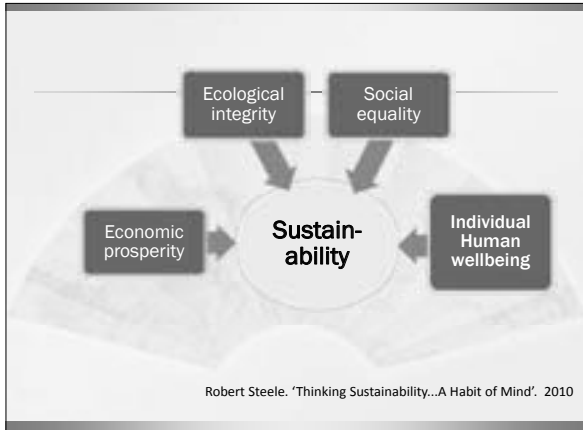
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The Sustainability Compass



Four fundamental aspects of a life in the 21st century
 A tool for assessing our present situation and setting direction towards living and learning more sustainably
 It helps students and schools look at their community from different viewpoints in order to learn, make decisions and take action in sustainable ways where they live.
 A tool to integrate sustainability into all areas of school life

Robert Steele. 'Thinking Sustainability...A Habit of Mind'. 2010



The Compass of Sustainability

The Compass of Sustainability uses the four directions of the Compass (N, E, S, W) to reflect four fully interdependent dimensions of life:

- (N = Nature) - The natural systems on which all life depends; healthy air, water, land; sustainable resource use; sufficient habitat; preservation of scenic beauty;
- (E = Economy) The economic systems that provide humanity with goods, services, and meaningful work; includes revenue, jobs and wages, budgets, taxes, markets, etc;
- (S = Society) The social and cultural systems that provide cohesion, identity, security and freedom; cultural traditions; legal frameworks
- (W = Wellbeing) - The health, happiness, and quality of life for individual people and their families

Robert Steele. 'Thinking Sustainability...A Habit of Mind'. 2010

Compass Exercise

Robert Steele. 'Thinking Sustainability...A Habit of Mind'. 2010
Impress Education

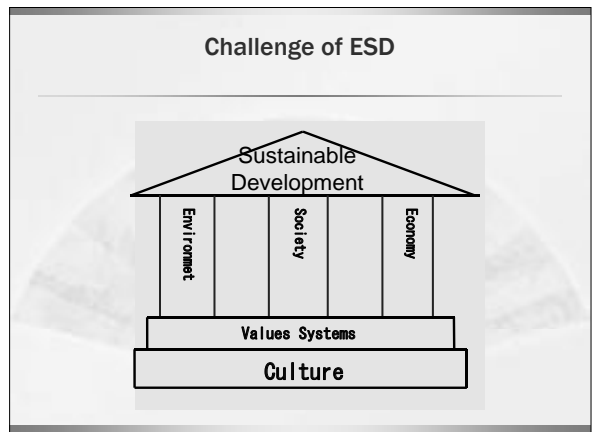
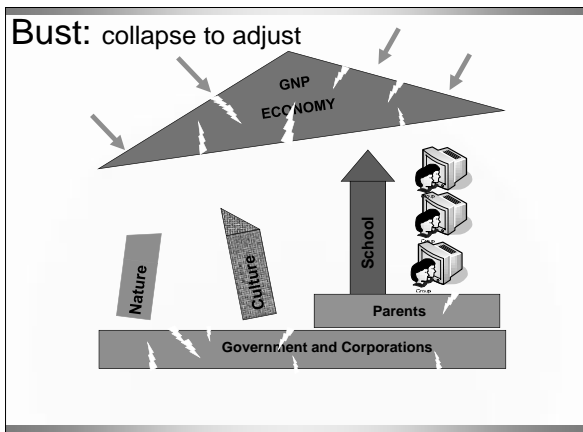
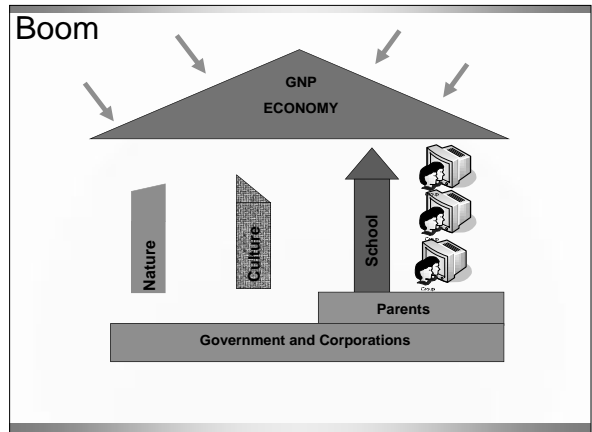
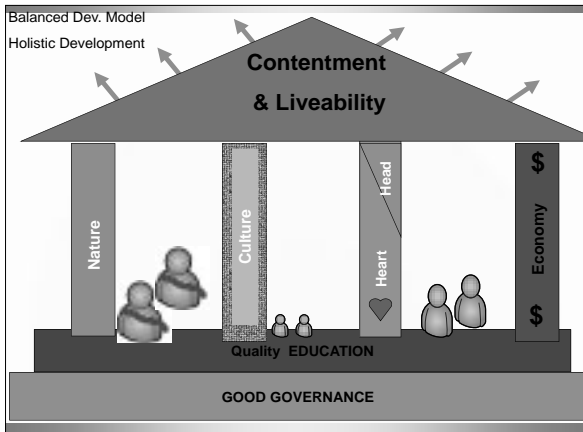
Compass Exercise

Task
Each Compass Point should talk together and come up with some questions that could be asked about this photo and its context from your Compass Point perspective

Robert Steele. 'Thinking Sustainability...A Habit of Mind'. 2010

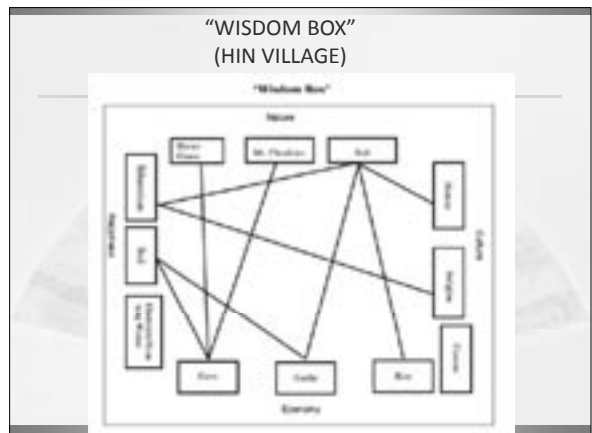
Case : Lao PDR ESD Project with COMPASS

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Investigation on interconnectedness

- * Creation of 'Wisdom Box'



SITUATION ANALYSIS
OF XK PROVINCE

- : Well-being
- : Poverty
- △ : Influences
from outside
the Province/
Country

- Green : Nature
- Blue : Economy
- Purple : Culture
- Red : Well-being

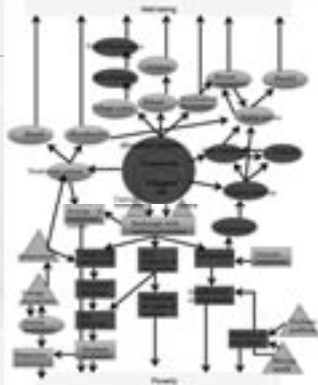
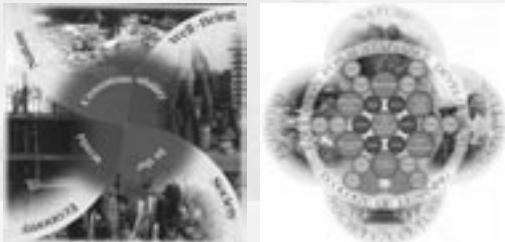


Figure 1. Sustainability and environmental in Yangon Province
This diagram was created under the guidance of YOSHI NAGATA

Presentation by Students



<http://www.u-sacred-heart.ac.jp/graduate/report/1104.html>



A Journey to meet change agents will start now!

Let's think of
what sustainability is,
and what we should sustain
for our future for a week!

YOSHI NAGATA
Univ. of the Sacred Heart, Tokyo

Lecture Records : Program Wrap-up (November 28)

Essence of Learning What we have learnt in Minamata?

28 Nov. 2011
Univ. of the Sacred Heart, Tokyo
Yoshiyuki NAGATA

Lessons for Minamatas in Asia

- There are many potential Minamatas in Asia
- There were some chances to decrease the degree of danger or number of victims in advance ...

What we do need as change agents is lessons!

Lesson 1 The Precautionary Principle

- When an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.

The Precautionary Principle

Common sense idea behind many adages/proverbs:

- Be careful!
- Better safe than sorry.
- Look before you leap.
- First do no harm.

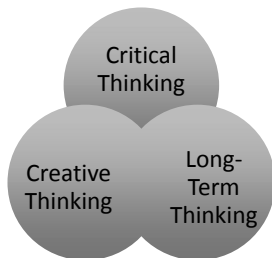


- Precautionary Tools for Reshaping Environmental Policy
- Nancy Myers, et al.
- The MIT Press
- 2005

Lesson 2 ESD - Thinkings

- Critical Thinking
→ Mr. Ogata, Mr. Tani and Ms. Shinobu Sakamoto
- Creative Thinking
→ Mr. Yoshimoto
- Long-term Thinking
→ Mr. Yoshii

ESD – Thinking Skills



Lesson 3

4 + 1 Pillars of Learning

Do you know 4 PILLARS of LEARNING?

- Learning to know
- Learning to do
- Learning to be
- Learning to live together

UNESCO "Learning to Be" (Edgar Faure Report)

What is "+1" ?

- Learning to know
- Learning to do
- Learning to be
- Learning to live together
- Learning to transform oneself and society

Transforming oneself, first!

- "Before changing people in villages, I found it necessary to change myself" (YOSHIMOTO)
- "Since I cannot change other people, I will start to change myself first." (SUGIMOTO)
- "People in Ohkawa Village have transformed themselves!" (KESINEE)

Transforming oneself, first!

"I cannot provide a poisonous substance with other people. I will be healthy so that I can be a good lump of earth in Minamata." (SUGIMOTO)

- "Because Japanese society cannot be changed, let's start with Minamata for true change." (YOSHIMOTO)
- "We have to foster/cultivate government/administration. The reason why they do not change is that we do not change ourselves." (OGATA)

Why don't we start from ME / around ME



Lesson 4
Tolerance and Prayer
towards self-communion

- “Don’t blame Chisso only. If you want to criticize, do blame Japan.” (OGATA)
- “Thanks to Minamata disease, I have encountered people and fish.” (SUGIMOTO)
- “I will pray for people of Chisso Co. which caused physical trouble of mine.” (SUGIMOTO)

Beyond Dichotomous Thinking:
‘Offender vs. Victim’

“Chisso was I...”

(Masato OGATA)

Lesson 5: Learning as a key
Message from Minamata to the World

- You have to learn that there is a way how to change pains and sorrows into happiness. Only learning helps you to change your life better. And facing the fact before you is the only way to learn it. (Masami OGATA)

Message from Minamata to the World

- You have to learn that there is a way how to change pains and sorrows into happiness. Only learning helps you to change your life better. And facing the fact before you is the only way to learn it. (Masami OGATA)

Our Journey Comes to the END...

Take a safe journey back to your country with new:

- Knowledge (Theory)
- Skills
- Ideas
- Courage
- Spirit
- Wisdom...

Your new journey will start soon!

O God, give us:

Serenity to accept what cannot be changed,
Courage to change what should be changed,
And Wisdom to distinguish the one from each other.

Reinhold Niebuhr

For our sustainable future,
keep on learning !

yoshy@pobox.com



General Overview
by Program Advisor

Program Advisor / プログラムアドバイザー

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EDUCATION

1991 Master's Degree in Education, International Christian University, Tokyo, Japan

2003 PhD in Education, International Christian University, Tokyo, Japan

PROFESSIONAL EXPERIENCE

1995-2001: Researcher, Section for International Cooperation in Education, National Institute for Educational Research (NIER) of Japan

2001-2007: Senior Researcher, Department of Research Planning and Development / Department of International Research and Co-operation, National Institute for Educational Policy Research (NIER) of Japan

2003-2004: Visiting Scholar of the Flinders University International Institute of Education (FUIIE), Adelaide, Australia

2007-Present: Associate Professor, University of the Sacred Heart, Tokyo, Japan.

RECENT PUBLICATIONS (In English Publication Only)

- *Prospect and Retrospect of Alternative Education in the Asia-Pacific Region.* (eds.). NIER. 2002.

- 'Education for Peace and International Understanding'. (Co-author: G. R. (Bob) Teasdale). In: *International Handbook of Educational Research in the Asia-Pacific Region.* Part I. Asia-Pacific Educational Research Association. Dordrecht: Kluwer Academic Publishers. pp. 641-653. 2003.

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- *Sustainable Development and Education for the 21st Century: What We Can Do Now for the Children of the Future - An Educational Paradigm Shift* -. (eds.). NIER, pp. 1-104. 2005.

- *Alternative Education: Global Perspectives Relevant to the Asia-Pacific Region.* Springer. 2006.

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- *Report of the Planning Research for International Study Meetings on Education for Sustainable Development in Asia and the Pacific.* (Research-in-Grant Report by the Japan Society for the Promotion of Science. (No. 18633010). 2007. <http://groups.google.com/group/Education4SD>

- *Roots and Wings: Fostering Education for Sustainable Development - Holistic Approaches towards ESD - : Final Report of International Workshops and Symposium: Holistic Approaches towards Education for Sustainable Development (ESD): Nurturing "Connectedness" in Asia and the Pacific in an Era of Globalization.* Japan Holistic Education Society / Asia/Pacific Cultural Centre for UNESCO (ACCU). 2007. (Eds.: Y. Nagata and J. Teasdale)

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総 評

学びの深化を共有した 10 日間

永田 佳之

このたび「環境保全と地域再生」というテーマのもとに、水俣をフィールドにしたJENESYSプログラムを開催する運びとなった。水俣へのツアーは二度目であるが、今回のプログラムに先立って一年半前に開催された水俣プログラムの意味合いと今回のそれとは決定的に違っていた。というのも、2011年3月に起きた東日本大震災後、人間と自然、人間と人間、人間と科学技術などのあらゆる関係性が問い直されるさなかに、今回のプログラムは企画・実施されたからである。プログラム期間中、参加者の学習をケアする「学びの世話人」として各国の若きリーダー達と学びの旅を共にする機会に恵まれたが、旅の節々で上の関係性について参加者が深く考える旅となったと言えよう。

ところで、ユネスコが世に説いたメッセージの中に「教育の4本柱 (Four Pillars of Education)」がある。『学習：秘められた宝』として知られる、J. ドロールが1996年に出した「21世紀の教育のための国際委員会」の報告書で「知ることの学び」「なすこと of 学び」「人間存在を深めるための学び」「共に生きること of 学び」が学習の原理として提唱され、広く世界中で受け入れられた。

JENESYSで水俣への旅を共にした27名はまさに、この4つを体験したと言える。フィールドに行く前の事前研修で持続可能性に関する知識を得て、フィールドでは地元で育まれた知恵と思想に基づくアクティビティを実際に行った。また、地元での講義では、想像を絶する苦悩と運命を引き受けた水俣の人々との出会いを通して人間としての存在を深め、さらに参加者同士の交流を通して国境を越えて共に生きることの重要性を学んだ——そんな10日間であった。こうした過程を共にすることができたのは、「学びの世話人」としてこの上ない喜びであった。

しかし、後述するように、このプログラムでは、上の4つの学習を越えて、「5本目の柱」が大きな意味をもった。それは、ユネスコが主導機関(リード・エージェンシー)をになうESD (Education for Sustainable Development) において重要であると言われている学習概念の「自らと社会を変容させること of 学び」(learning to transform oneself and society) である。つまり、自己と社会を変容させていくための学びである。近現代になって以来の社会変革は自由や平等に象徴されるイデオロギーをもって行われてきたと言えよう。しかし、ポストモダンとも言えるこの時代に求められるのは、もっとしなやかなアプローチ、つまり、まずは自己を変容させ、その延長線上で社会変容を思い描くというプロセスへの参加ではないだろうか。理念が人々を牽引していた時代では、環境の重要性を主張しながらも自己の生活は環境破壊につながるような生活をしている人や、平和の大切さを訴えながらも自らの言動は暴力的な性質を帯びている人は少なくなかった。彼らに欠けているのは「当事者性」、つまり、みずからこそが社会変革の大切な一部であるという意識である。他者や世の中を変えようとするのであれば、まずは自らを変え、それが周囲の他者も変わるきっかけとなり、やがては共同体が変容していく一助となる。水俣で、私たちの講師を務めてくださった人々は皆、こうした当事者性を自覚している市民であった。

1. 水俣プログラムの特徴

1)「痛み」の分かち合い

前述のとおり、水俣で生まれるJENESYSは二度目となる。では、なぜ水俣にこだわるのか。

ここ数年、国際交流基金のJENESYSで筆者が担当する教育や環境・福祉の分野でのプログラムの組み方には構造的なくふうをこらしてきた。それは、先進国としての日本の優れたところやイノベーションを海外の人々、特に発展途上国と称される地域の人々に見てもらうのではなく、フロントランナーであったからこそ、誰よりも先に体験した痛みを、近隣の友がくり返さないように、その現場とそこで暮らす人々との出会いを通して公正なアジア太平洋地域の共同体形成に結びつけてもらいたいという、ある種のヒューマニズムに基づく工夫であった。

確かに自身の恥部を公にするという行為は勇気が要るのかもしれない。しかし、「負の遺産」とも称されることもある水俣であるが、そこに息づく人々の知恵は決して恥部ではなく、むしろ試練を引き受け、労苦を乗り越えた勇気ある行動から生まれた希少な「資産」であると言える。このプログラムでこのような勇気や生き様に触れた参加者たちは、本報告書の参加者アンケートの結果やホームページに公開されているビデオにも示されているように、深い次元で学んだと言える。ひと言でいえば、それは人類に共通の「痛み」を分かち合うプロセスでもあった。

2)多様性とバランスにこだわったプログラム構成

今回の水俣ツアーでは、前回よりも滞在型にし、じっくりとフィールドで考え、学びを深められるようにした。とはいえ、水俣での実質的な滞在は4日間であり、質的にプログラムを高めなくてはならない点は前回と同じであった。

今回、我々がこだわったのは、地元の講師ラインナップである。語り部として活動されている水俣病の犠牲者の他、水俣病問題の渦中で行政上の勇断をした元市長や役所の職員、地元のNPO職員など、異なる立場の人々からの講演に参加者は耳を傾けた。

また、水俣で生まれたフィールドワークの技法である「地元学」についても実際に村の人々と村を一緒に歩いて体験し、絵による地図をみずから作成し、村人に自分たちが気づいたことについて発表した。

2. 参加者は何を学んだのか

旅を通じて、「学びの世話人」の目には、参加者は次の5つの重要性について学んだと映った。

① 予防原則(Precautionary Principle)の重要性

水俣病の拡大を防ぐことのできなかった理由の一つに、予防原則が機能しなかったことが指摘されてよい。もしある活動によって環境や人間の健康に害を及ぼす危険性が高まったとき、たとえ害の因果関係が科学的に十分に確認できなかったとしても、活動を停止するという原則がとられるべきである。水俣の近代史が物語るのは、こうした予防原則の重要性であり、アジア諸国で見られる「もう一つのMINAMATA」に対しては、この原則をもって毅然と対処していく必要がある。

② ESDの思考スキルの重要性

ESDの重視する学習スキルとして「批判的思考：critical thinking」や「創造的思考creative thinking」、さらには「長期的思考：long-term thinking」があげられる。これらは上の原理と共に重視されるべき、持続可能な社会形成にとって欠かせない思考スキルであり、ユネスコは「高次の思考スキル：higher-order thinking skills」と総称している。これらが各国や地域のカリキュラムで重要視されているか否か、まずは確認していく必要がある。

③ 自己変容に基づく社会変容の重要性

講演者の一人、吉本哲郎氏が引用していた水俣病患者の故 杉本栄子さんは「人様は変えられないから自分が変わる」と語っていたという。この言葉に象徴されるように、他者を変えようとすることはおぞましい行為であり、傲慢さが見てとれる。他者を攻める前に、まず自分の立ち居ふる舞いを問いただすことが真の持続可能な共同体への第一歩であると言えよう。

④ 加害者の中に自身を見るところ

最終講義の中で「チッソは私であった」と語った水俣病患者の緒方正人氏の言葉を筆者は紹介した。緒方氏は「チッソの中にいたとしたら、自分は絶対に同じことをしていないという根拠がない」という想いに至り、「加害者vs 被害者」という二項対立の図式を越えて内省を重ねた。上の言葉は緒方氏がそうした心の闘争の末に至った境地を表す言葉でもある。これは、他者、それも自らに危害を及ぼした加害者の立場に自分をも重ね合わせるというラディカルな捉え方である。講演者の一人の緒方正実氏の言葉、「チッソだけを責めるな。責めたければ、日本を責める」も参加者の心に残った言葉のひとつであろう。水俣には、加害者に対して激しく責任を追求していく言葉と共に、上のような祈りにも近い言葉も聴くことができた。こうした言葉は対立状況の中で対話が生まれる契機となる知恵の現れなのかもしれない。

⑤ 学びそのものの重要性

緒方正実さんは次の言葉で講演をしめくくった。「苦しいでき事や悲しいでき事の中には幸せにつながっているでき事がたくさん含まれている。このことに気づくか気づかないかで、その人生は大きく変わっていく。気づくにはひとつだけ条件がある。それは、でき事と正面から向かい合うことである。」

参加者は、水俣病の患者でもある講演者の方々がいかに日々、多くを学んでいるのかを実感したいではない。彼らは人から、自然から、共同体から、学び続けており、学び自体が社会を変えていく原動力となっていると言えよう。

3. 学びの旅のクライマックス

旅の道中、ふしぶしに参加者は、「もやい直し」が共同体再生のキーワードとして機能し、水俣はこの言葉を旗印として再生の道をたどったことを学んだ。ところが、最終日に耳にした言葉には誰もが絶句した。つまり、「私のもやい直しには反対です・・・。」水俣病の患者の一人である女性によるこの言葉を聞いたとき、戸惑いを隠せなかった参加者は少なくなく、思わず参加者の一人が「なぜ、もやい直しに反対なのですか?」と尋ねた。すると答えの主旨は「取り残されてしまう気持ちになる」ということであった。

また、講演会に同席していたNPOの代表の方は「『もやい直し』は重度の患者にとって、植民地にされていた宗主国から和解案を提示されるようなものだった」という説明を添えた。確かに、ある程度の元気がある人は、様々な復興運動にも参加できるが、訴訟を続けるだけでも大変な患者は少なくない。水俣病は終わっていないにもかかわらず、「もやい直し」で万事が解消されてしまったような印象を受ける人々が存在することは忘れてはならないであろう。

以上は一例であるが、このように参加者は大切なことに気づき、それについて深く学び、さらに学んだことを時には否定されるという「ゆさぶり」を体験した。こうした学びのプロセスを参加者は日々、くぐり抜けたと言ってよい。それは特定の知識の習得や思考スキルの訓練にとどまらず、ESDの目指す価値観・行動・ライフスタイルの変容に迫る内容であったと言っても過言ではない。

「学びの深化」を体験した参加者は、重要なアイデアや思想、理論、アプローチを習得し、水俣を後にした。こうした参加者に最後のセッションで筆者が届けた言葉をもってこの総評の結びとしたい。その言葉は米国の

キリスト教神学者の名言であるが、それはキリスト教にとどまらず、より普遍的なメッセージであることを信じて、ここに記す。

神よ、

変えることのできるものについて、?それを変えるだけの勇気をわれらに与えたまえ。?変えることのできないものについては、?それを受け入れるだけの冷静さを与えたまえ。?そして、?変えることのできるものと、変えることのできないものとを、?識別する知恵を与えたまえ。

ラインホルド・ニーバー (大木英夫 訳)

まさに水俣の人々は「変えられないもの」を受容し、「変えられるもの」を変え、この両者を識別する知恵を培ってきたと言えよう。この知恵こそ、持続可能なアジア太平洋地域にとって必要不可欠なものではないだろうか。

General Overview

Ten Days of Sharing in the Deepening of Learning

Yoshiyuki Nagata

On this occasion, the JENESYS program was held under the theme “Environment and Community Revitalization” with fieldwork in Minamata - actually the second time JENESYS incorporated a tour to Minamata. However, the significance of this program was completely different from the one a year and a half earlier. This is because the latest program was planned and implemented after the March 2011 Great Eastern Japan Earthquake, as relationships such as those between humans and nature, humans and other humans, and humans and science and technology were being questioned. I was blessed to have the opportunity to learn together with the young leaders from various countries while serving as the “learning facilitator” responsible for the academic component of this program, and I can say that the participants thought deeply about the relationships above throughout the course of the program.

Among the messages that UNESCO advocates to the world, there are “Four Pillars of Education.” Jacques Delors, in his 1996 *Report to UNESCO of the International Commission on Education for the Twenty-first Century*, expresses these principles of education to be “learning to know,” “learning to do,” “learning to be,” and “learning to live together.” These educational pillars have been widely accepted throughout the world.

The 27 people who traveled together to Minamata on the JENESYS program truly experienced these four principles. During the opening session that preceded going into the field, they gained knowledge concerning sustainability. Then they actually conducted activities based on the wisdom and thought developed in these local areas. In addition, by virtue of lectures held in the local areas, they deepened their understanding of their humanity through encounters with people in Minamata who had experienced an unimaginable fate and suffering. And, through exchange with other participants, they learned the importance of a coexistence that transcends borders. That was the kind of ten days it was. There was no greater happiness for a “learning facilitator” than accompanying participants in this learning process.

However, as I will explain later, this program went beyond the four types of learning mentioned above, adding a fifth pillar with great meaning. This was “learning to transform oneself and society,” a learning concept that is important to Education for Sustainable Development, for which UNESCO serves as the lead UN Agency. This learning aims to change the self and society. One can say that since modern times, social change has been driven by ideologies such as those of freedom and equality. However, in what one can call this “post-modern” era, one needs a strong yet flexible approach - a process in which one first changes oneself and then envisions how to change society. In eras when the pull of ideas was strong, many people expressed the importance of the environment but conducted their lives in a way that harmed the environment or expressed the importance of peace but did not realize how their words and actions bespoke a violent character. What these people lacked was a sense of their own connectedness with the issues - a consciousness that they themselves were important elements in changing society. If one wants to change others or the world, one first has to change oneself; this will become a catalyst for other people to change and ultimately for the community as a whole to change. All of the people who served as our teachers in Minamata were citizens aware of their involvement in this process of change.

Special Characteristics of the Minamata Program

1) Sharing “Pain”

As stated earlier, this was the second time that JENESYS was held in Minamata. Why did we insist on holding the program in Minamata?

Over these last several years, we had developed an effective strategy for the Japan Foundation's JENESYS Program while responsible for the areas of education, environment and social welfare. This strategy did not involve having people from abroad, particularly those from the so-called “developing” regions, seeing the best aspects of Japan and its innovations as an advanced nation. Rather, it rested on a kind of humanism based on the idea that Japan's neighbors should not have to repeat the pains that Japan had experienced as a developmental “frontrunner.” The programs enabled participants to meet with people in local communities where such pains had occurred and aimed at building a just community in the Asia-Pacific region.

It is true that the act of revealing one's shameful side to the public requires courage. However, while Minamata is sometimes called a “negative heritage,” it is absolutely not the case that the wisdom of the people living in Minamata is a negative. It is rather a rare asset born from the acceptance of trials and tribulations and from courageous actions to overcome hardship. The participants who came into contact with this courage and sensitivity learned at a deep level as is apparent from the results of the participant surveys in this program report and the video on the program homepage. To sum this up in a word, it was a process of sharing humanity's “pain.”

2) Composing a Program with Diversity and Balance

During this tour of Minamata, we had participants stay in Minamata longer than the previous occasion, giving them time to think carefully while in the field, and to deepen their learning. The group stayed in Minamata for four days and, as with the last program, we worked to raise the quality level of the program.

This time, we gave special attention to the line-up of local speakers. Participants heard speakers of differing perspectives. In addition to Minamata disease patients who were active in speaking about their experiences to the public, we had a former mayor and a local government official who took decisive actions within the government in the midst of the Minamata disease issue as well as staff from local nonprofit organizations.

In addition, using the locality-based learning methodology called jimoto-gaku that they had learned for the Minamata fieldwork, the participants walked around the village together with the villagers, drew picture maps of the village, and presented to the villagers about what they had noticed.

2. What Did the Participants Learn?

From the eyes of the “learning facilitator,” the participants seem to have learned the following five important things through the trip.

① The Importance of the Precautionary Principle

One can point to the lack of function of a precautionary principle as one of the reasons that the spread of Minamata disease was not prevented. One should operate under the principle that when the danger of harm to the environment or people's health is raised by a particular action, one should stop the action - even if the scientific cause of the damage cannot be confirmed. The story of the modern history of Minamata is of the

importance of this Precautionary Principle. We need to operate based strictly on the Precautionary Principle so that we do not see even “one more Minamata” in the countries of Asia.

② The Importance of ESD Thinking Skills

ESD emphasizes the learning skills of critical thinking, creative thinking, and long-term thinking, which are termed higher-order thinking skills by UNESCO. These are thinking skills that are essential for building a sustainable society and should be emphasized in conjunction with the above principles. Thus, one of the first things that one should confirm is whether or not these thinking skills are emphasized in the curriculum of each country or region.

③ The Importance of Social Change Based in Transforming Oneself

One of the lecturers, Tetsuro Yoshimoto, quoted Minamata disease patient Keiko Sugimoto, who had passed away. According to Yoshimoto, she said, “It's not right to change other people, so I will change.” These words convey the idea that it is a horrible act to try to change another person, as it can be perceived as arrogance. It follows that the first step towards a truly sustainable community is to re-evaluate one's own behavior before attacking others.

④ Seeing Oneself among the Perpetrators

In the final lecture, I introduced the quote “I am Chisso,” from Minamata disease patient Masato Ogata. Ogata had realized there was no basis for thinking that he would have acted differently if he had been at Chisso, and that one needed to go beyond the divisive way of thinking of “perpetrators” versus “victims.” This quote also expresses Ogata having reached a stage where the struggle in his heart had ended. This is a radical view - that you are entwined within the perspective of the others who have harmed you. One of the other speakers, Masami Ogata, said in his speech: “Don't only attack Chisso. If you are going to attack somebody, attack all of Japan.” This was one of the comments that really remained with participants. In Minamata, we heard words that harshly pursued responsibility of the perpetrators, as well as words like those above that were similar to a prayer. These latter words are probably a sign of a turning point, in which wisdom has been generated by dialogue in a situation of conflict.

5. The Importance of Learning Itself

Masami Ogata closed his speech with the following words: “You have to learn that there is a way how to change pains and sorrows into happiness. Only learning helps you to change your life better. And facing the fact before you is the only way to learn it.” There is no doubt that program participants felt deeply just how much the speakers who were Minamata disease patients were learning every day. They are continuing to learn from people, nature, the community ? and one can say that learning itself is the impetus behind their efforts to change society.

3. The Climax of the Learning Journey

In the midst of the trip, participants learned that the term *moyainaoshi* (“re-establishment of emotional ties”) functioned as a key word in community revitalization and that Minamata had held this word up as a flag as it struggled its way towards recovery. However, on the last day everyone was left speechless by something they heard: “I oppose *moyainaoshi*.” When participants heard these words from one of the female Minamata patients, many participants could not hide their confusion and one participant asked reflexively: “Why are you against *moyainaoshi*?” The central point of the response was: “I end up feeling like something left behind.”

One of the NPO representatives added the explanation that “For the majority of patients, the word moyainaoshi has the feel of a compromise plan presented by colonialists to their colonies.” Certainly, those people who are lively to a certain extent can participate in various revitalization activities, but there are many patients suffering just through continuing their legal battles. We have to remember that Minamata disease is not gone, and people exist who have the impression that the words “reestablishment of emotional ties” mean that all is erased.

The above is one example, but participants made important discoveries, learned deeply, and sometimes experienced the “harassment” of what they had learned being refuted. It is accurate to say that participants made it through this learning process every day. This learning went beyond gaining specific knowledge and practicing thinking skills. It would not be an exaggeration to say that the content pushed participants towards the changes in values, behavior and lifestyles that are the aims of ESD.

The participants who experienced a deepening of learning left Minamata having gained important ideas, thoughts, theories and approaches. I would like to close this overview with a message I delivered to the participants at the closing session. These are the famous words of a Christian scholar in the United States, but they are not limited to Christianity and I express them here because they have a universal message.

*O God, give us serenity to accept what cannot be changed,
Courage to change what should be changed,
And wisdom to distinguish the one from the other. Reinhold Niebuhr*

One can say that the people of Minamata truly accept “what cannot be changed,” change “what should be changed” and are building the wisdom to distinguish between the two. This wisdom is a precious resource for promoting sustainability in the Asia-Pacific region.



**Post-Program Reports
by Participants**



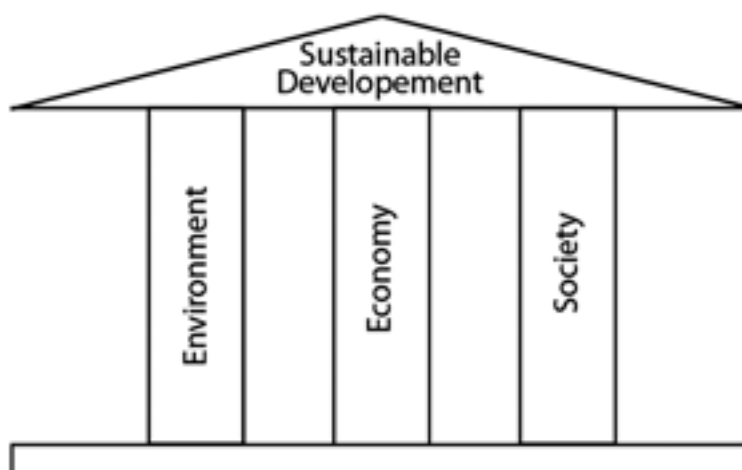
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Brief Overview

Kampong Ayer is Brunei's ancient water village, which has existed for more than 500 years. It is situated in the capital city of Brunei, Bandar Seri Begawan. The houses and buildings of Kampong Ayer are built on stilts above the Brunei River. Due to its uniqueness, the village is an ideal tourist attraction to help tourists better understand the traditional and culture heritage. Kampong Ayer is also known as "Venice of the East" by many tourists.

The ancient village not only needs to be preserved but also to improve further in terms of infrastructure, living standard and cleanliness. The waste management processes (such as collecting and disposing of solid waste in Kampong Ayer) are still inadequate. Some people just throw the trash into the river and it is an eyesore to see rubbish floating on the water. This is the issue that needs to be addressed in order to help achieve environmental sustainability. The diagram below shows the pillars model of Kampong Ayer and there are three key factors (i.e. environment, society and economy) to achieve sustainable development.



Environment

Improper disposal of rubbish can cause several environmental problems.

Health, Safety & Ecosystem

Accumulated waste in Brunei River can create unpleasant smells and attract pests. Eventually, it can affect people's health. If serious, it can lead to respiratory disease. In addition, some residents, especially children, treat the river as their water playground and swim and play in the water frequently. Although there is no known official report showing that polluted water has affected someone's health, it is still concerning to see people swim in the river.

The accumulated waste also raises safety concerns, as there is a chance that the solid waste may block the sewer system, which can result in disastrous flash floods.

Disposal of rubbish into the river can affect the fish ecosystem as the river has a few delicate breeds of fishes, such as the grouper and barramundi. If this continues, the water life forms could slowly disappear.

Rubbish underneath the Brunei River

Disposal of rubbish into the river has been in practice since the early days. Previously, a research study was conducted, which aimed to measure the amount of waste lying beneath the river. The study stated that there was enough rubbish to fill from 5 to 50 million of 24 by 35-inch black plastic rubbish sacks. This is a shocking statistic and will take a great deal of effort to clean. To make matters worse, the majority of the rubbish is not really accessible, as some has already sunk to the bottom of the river.

As part of the research work, a survey was conducted to gather feedback from tourists who had visited Kampong Ayer. There was around 200 respondents and 80 per cent of them found that unpleasant sightings of rubbish in the river would discourage them from visiting again. The statistic is worrying when the village is supposed to be a tourist attraction area.

Society

Government

The government is well aware of the issues of improper garbage disposal in Kampong Ayer. In fact, the authorities have done a lot in order to resolve this long-standing issue.

In 2006, the Department of Environment, Parks and Recreation (Jastre), initiated a campaign to clean up the river and it is estimated to be completed in 2012. Jastre has taken over the responsibility of managing the collection and disposal of solid waste since the campaign started.

The government has also provided waste collection bins in Kampong Ayer to encourage a proper disposal of solid waste. The waste collection is totally free of charge for all the residents in the village.

A system to continuously monitor the water quality is currently being set up. However, a timeline for the completion is yet to be announced. This monitoring system will be able to detect any forms of water pollution and assist in conducting studies about the water quality.

Jastre also expanded their efforts to promote a public awareness campaign, to encourage people to take good care of the environment and participate in conservation activities. The campaign is not just for the residents of the village but also for all the individuals and society of the country. Activities such as conducting workshops in schools, seminars, conferences, and working closely with media, were undertaken to enhance public awareness of the need to keep Brunei clean and green.

It is clear that Brunei's government has put in a lot of effort to tackle the issue. However, support and cooperation from the community, (i.e. village residents, public and individuals), is needed to achieve the objectives.

The community

Most residents of Kampong Ayer are depending too much on the government to clean the river. People expect the government to do everything for them. Although the government has provided a proper system of rubbish disposal, such as supplying the free waste collection bins, some residents are not using them. This is because they are accustomed to an easier method of rubbish disposal ? throwing it into the river.

No matter how many times the government cleans the river, the rubbish will resurface again. It is an irresponsible mindset that the residents of the village need to change. However, it has been pointed out that some of the rubbish does not come from the village ? it is the flow of rubbish from upstream places, which then accumulates in Brunei River. Both the villagers and the people who live upstream are responsible for the condition of the river.

Therefore, the individuals and public from the land also needed to be educated, not just the residents of Kampong Ayer. It is the responsibility of everyone in the country to take good care of the environment.

However, on the plus side, some residents are actually willing to help out and very supportive with the initiatives done by the government. Educating the majority of the residents on proper methods of waste disposal will require participation from the community. Younger generation residents who are well-educated are more environmentally conscious which is a good sign for the future.

Economy

Within the village

Improper rubbish dumping might have harmed the economy of the village as it can damage the delicate mini-ecosystems in the river. Some fishermen (who have been fishing for over 30 years in the village) have mentioned that the fishes they are catching are getting smaller and smaller and harder to catch. According to the fishermen, making a living is getting harder as well; many now have to look for other sources of income.

The country as a whole

For decades, Brunei has been blessed with oil and gas reserves under the sea. The country's economy has been mainly supported by the exports of crude oil and natural gas, which has been contributing more than 50% of the GDP. However, it is an unavoidable fact that the hydrocarbon resources will dry out one day. When that day comes, it will have a huge negative impact on the economy.

Hence, the country's government has been formulating a long-term development plan in order to diversify the

economic dependency away from oil and gas industries. The tourism industry is one of the potentials for economic diversification. In addition, the country is trying to promote eco-tourism as well. When related to eco-tourism, waste management is quite important, as specialists or environmentalists may judge a country based on how the waste is being disposed.

Hence, the 500-year-old village plays a very important role in the tourism industry as it holds endless revenue potential for the country.

Suggestions

There are few activities that can be done by the government and/or community to restore Brunei River:

Clean the rubbish underneath the river

The first priority is to remove the solid waste from the river. It is known that Jastre has already held a cleaning campaign. But they are only removing waste that is visible or floats on top of the river. The rubbish at the bottom of the river still remains an issue. The water will not be crystal clear with the waste lying beneath.

The government should look into the case of Minamata disease in which the Japan's government was able to remove 70-150 tonnes of mercury waste from Minamata Bay. Removing the industrial waste entails a very sophisticated procedure. So, how much harder is removing the rubbish from Brunei River than mercury from Minamata Bay? Therefore, technically it is possible to clean the tonnes of rubbish from the river provided that the right process is used. When it comes to the cleaning process, there must be something that the government can learn from Japan.

Impose fines

Right now, there is no fine imposed upon those who dump rubbish into Brunei River. The authorities should consider enforcing a law to put a stop to improper disposal of waste. The government has done a lot for the village already. If the residents cannot be changed in the soft way then the government has to do it the hard way, which means imposing fines. This will result in the residents becoming more environmentally conscious.

Waste separation

This activity of waste separation could be too much to begin with because residents are not even disposing of non-separated waste properly. However, this practice can be started with the locals who live on land. At the initial stages, the trash can be separated into three categories - plastic, aluminum tin can and paper.

If it is successful, only then can the trash-sorting practice can be brought into the village. Although it will take more time to educate the community on waste separation, it is worthwhile, as recycling is the way forward in trying to attain sustainable development.

With all the waste properly categorised, it will streamline the process of recycling and potentially attract more recycling companies to be established in Brunei.

Establishment of recycling plants

With the current on-going clean-up project initiated by Jastre, the waste that is collected from the river is actually sent to the landfill ?this could be a problem in the future as there is limited space available. By establishing more

recycling plants in the country, it will greatly reduce the amount of waste ending up at the landfill. Furthermore, recycling plants will be needed when waste separation is widespread, since separated trash needs to be sent to places with facilities for recycling.

The government should do research on what kind of recycling facilities the country needs and then list all the potential facilities for entrepreneurs to establish. By doing so, entrepreneurs will feel more secure in starting up such facilities, knowing that the projects are supported by the authorities.

The practice of Jimotogaku concept

In the case of Minamata disease in Japan, Jimotogaku is one of the core methods to revitalise the community in Minamata city. Jimotogaku is a concept of putting the community in a role to develop, formulate and improve the local development. In addition, it helps people to understand the surrounding area better and make full use of the resources that the community has. The concept mainly focuses on community development.

So how does it apply to the case of Kampong Ayer? Obviously, the rubbish in Brunei River is dumped by mankind. If the mindset of the residents or individuals on land who trash the waste do not change, it will be hard to achieve and maintain cleanliness. It is believed that the Jimotogaku concept can play a role in this situation, by helping people to understand the hardship that everyone has faced. Conducting environmental education within the community tends to be more effective as they live closer to each other and share the same culture.

In short, all the bad habits should be left behind. Uniqueness, cultural values and heritage must be protected and be passed over to the future generation. Once we combine the good governance that the country already has, with a united community and a diversified economy, Brunei can then potentially achieve sustainable development.



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1. CASE STUDY

The Water Village or “Kampung Air”, as it is locally known, has been globally considered as Bruneian heritage noting to its status as the capital and business center since the 15th Century. Located along the shore of the Brunei River opening towards the embrace of the Brunei bay, it had perseverely maintains its existence amidst the development and progress underwent at the land areas of Bandar Seri Begawan. However it has been noted that Kampong Air throughout its existence, has also undergone several development and destruction without marring its original state. As to date, large number of the residence mostly comprising of the new generation had moved out of Kampung Air, to settle in other areas of Brunei Muara with the opening up of Government Housing Scheme in areas like Lambak, Rimba, Mentiri and Muara. This is also due to the rapid development of business, education and employment opportunities in other areas like Gadong, Kiulap and Rimba. In addition to that, it is a lot easier to travel on land as compared to the water village. Also, as most of the financial centres, shopping complexes, entertainment ammenities, government building and administration can be found on land. The Government through the provision of the housing scheme, granted landless citizen with land or houses in selected areas, thus giving more reasons to leave Kampung Air and stay on land.

As a result more houses are left vacant in the water village, which increase the numbers of illegal activities such as drug abuse, illegal migrants and theft. It is also noted that the houses are mostly rented out to foreigners especially laborers creating different cultures where previously the Bruneian culture are nested. Environmentally, the water village is badly polluted with household garbage, oil leaked from the water-taxis and untreated sewage. These pollutants came either from the villagers itself, the people doing business or activities on the other side of the river and also from the water-taxis operators passing through the river. Some of the pollutants were also brought in from tidal changes in water and water moving down stream from the inland tributaries. As most of the houses are built close together and made of materials easily caught fire like wood and timber, several occurence of fire incidents had broken out destroying homes and villages leaving behind half built houses and many columns rising from the water. Thick black smoke and ash from the fire resulted in massive air pollution around the Kampong Air area. Living things like fishes and other water animals and plants had also suffered from it. The move by the government to

destruct empty or abandon houses aim at curbing illegal activities and social ills had also leaves pillars and columns left over of the respective houses. This not only gives danger to the fish living in the river but also to children and people who might fall down on these sharp pillars or columns. Several cleanup campaigns to get rid of the garbage had been taken by numerous government agencies and voluntary institutions had reduce the waste polluting the river. Awareness campaign had also been undertaken by the relevant agencies and media to educate the public on the importance of preserving the water village as a national heritage and also the Brunei River which had provided livelihood for the people.

Acknowledging the need to protect the water village, its tradition, community and livelihood, the Government had embarked on a program to revive Kampung Air. This includes for a start building a gallery to house and portray the rich culture of Kampung Air, its history and developments. Improvement was made to ensure proper supply of clean water and safe electricity supply for the villagers. There has not been much study made on the quality of water in the river and other environmental effect from the current state of the water village. Improvement is also made on the waterfront area facing the water villages to make it more manageable and secure for the public. It is also planned to relocate the housing scheme to include the water village as an area for relocation, with facilities and infrastructure attracting more people to stay there. Looking forward, it is pertinent that kampong Air not only be revived but its sustainability is ensured in the future.

2. SUGGESTIONGS / IMPLICATIONS

It is a positive move that the Government look at the revival of Kampung Air, preserving the heritage and culture ensuring that it will be there for the future. With the revival steps currently in its planning stage, it would be beneficial to conduct studies on the water quality, environmental effect of the program, use of environmental friendly materials for the development and importantly quality of life of the community. The study outcome can be used as a guide for the authorities in ensuring its sustainability and not just revival.

A comprehensive waste disposal system should be in place, considering recycling and other environmental friendly ways of eradicating waste. Educating the villagers, river users and the public in general on the importance of maintain the ecological balance and living in harmony with nature is a must to preserve the available resources. Learning from history, the previous generation had survived and advanced economically by using the available resources without wasting it. They also appreciate nature as the source of these resources. This should be reemphasize that economic activities must not cost the loss of natural resources.

In the quest to revive the water village it must be cautioned that revival alone is not sufficient if it cannot be sustained. The revival activities should consider balance in all aspect without sacrificing any party or resources over the other.



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1. CASE STUDY

“Management of protected areas to ensure conservation, protection and sustainable uses of natural resources and biodiversity in Cambodia”

The 23 Protected Areas (PAs) in Cambodia were designated by Royal Decree dated on 01st November 1993 and covering about 3.3 million ha (18.3 percent of total land area). Through PA's law, which signed by the King in 2008, the PA are modified into 8 categories: National Park, Wildlife Sanctuary, Protected Landscape, Multiple use area, Ramsar site, Biosphere reserve, Natural heritage site, and Marine Park. The PAs are under jurisdictions of the General Department of Administration for Nature Conservation and Protection (GDANCP), Ministry of Environment (MoE).

Each protected area is divided into four management zoning systems as the following:

1. **Core zone:** management area(s) of high conservation values containing threatened and critically endangered species, and fragile ecosystems. Access to the zone is prohibited except the Nature Conservation and Protection Administration's officials and researchers who, with prior permission from the Ministry of Environment, conduct nature and scientific studies for the purpose of preservation and protection of biological resources and natural environment with the exception of national security and defense sectors.
2. **Conservation zone:** management area(s) of high conservation values containing natural resources, ecosystems, watershed areas, and natural landscape located adjacent to the core zone. Access to the zone is allowed only with prior consent of the Nature Conservation and Protection Administration at the area with the exception of national security and defense sectors. Small-scale community uses of non-timber forest products (NTFPs) to support local ethnic minorities' livelihood may be allowed under strict control, provided that they do not present serious adverse impacts on biodiversity within the zone.
3. **Sustainable use zone:** management area(s) of high economic values for national economic development

and management, and conservation of the protected area(s) itself thus contributing to the local community, and indigenous ethnic minorities' livelihood improvement. After consulting with relevant ministries and institutions, local authorities, and local communities in accordance with relevant laws and procedures, the Royal Government of Cambodia may permit development and investment activities in this zone in accordance with the request from the Ministry of Environment.

4. **Community zone:** management area(s) for socio-economic development of the local communities and indigenous ethnic minorities and may contain existing residential lands, paddy field and field garden or swidden (Chamkar).

Through 19-year of working in managing PAs, the GDANCP under MoE has experiences in support the important local participation in managing natural resources and improve local livelihood living near and in the protected areas. This is an optional strategy to increase effectiveness in conservation and sustainable development activities due to there are villages located in or nearby PAs, moreover, most of them are poor and depend on natural resources for their daily living.

In motivation to community and indigenous ethnic minorities' people, the PA's law has also state with reference to providing those people the rights in participation management on natural resources by establishing Community Protected Area (CPA). As result in cooperation with NGOs partners, GDANCP/MoE had facilitated CPA formulation, by the end of 2009, there are 84 CPAs have been established with involvement from 140 villages, in which there are 15,796 families are members, managing about 93,339 hectares of the Protected Areas.

2. SUGGESTIONS / IMPLICATION

Community Protected Area is a mechanism to oversee natural resource area in natural protected area based in community participation approach. Local residents participate in planning management and using their non-timber forest products as sustainable way. These factors cannot be taken without participation from local authorities, development partner organization, and other stakeholders especially participation from rangers based in natural protected area. In the manner, they shall be granted legal rights for using and enjoying the benefit from non-timber forest products in natural protected area such as wood for housing, materials serving agriculture and traditional medicine according to planning management which support their living. Throughout local community participation in forest management underlying community protected area, Royal Government of Cambodia will encourage and facilitate to have Carbone credit market for community resident to bring Carbone credit in international market. This would boast living standard of residents and using budget from selling Carbone credit to develop infrastructure and human resource in community.

While implementing law to prevent offenses, law on natural protected area had layout the determination of management zone into sustainable use zone serving national economic development through providing development investment projects on large-scale and small-scale agro-industry to take part in poverty reduction by

distributing and improving local community income and providing planting technique to them.

Since the creation of natural protected area in 1993 up to now, the protected area are facing some challenges require different solutions based on specific location and situation of nation. The common challenges a raise rapidly almost all protected areas including illegal land occupation from unknown, illegal logging for private ownership, shooting wild animal, deforestation etc. These problems require a close cooperation among competent stakeholder and local authority especially local resident to prevent those illegal acts. While implementing the law, the essential of natural resources mainstreaming also take part in natural resources protection as well. Obviously, rangers have cooperated with various development partner organizations to create life skills such as inventing forest products for diary business and improving family living.

In conclusion, local community participation with assistance from specialize institutions and local authorities is really important that cannot be split out from managing and sustainable use natural resources in natural protected area to promote community living standard as well as poverty reduction of residence.



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1. CASE STUDY

"Toxic Waste Dumped in Sihanouk province, Cambodia"

About 3,000 tons of toxic waste was dumped about 15 kilometers from Sihanoukville town, Sihanouk province which is known as one of the most activated trade and coastal tourist place in Cambodia. The waste was dumped to the said area in four day later after importing from Taiwan on November 30, 1998. It was contained in triple lined sacks bearing the skull and crossbones warning sign and the materials were labeled construction waste which claimed to have imported as raw cement to be used for making crockery. The waste was belonged to Taiwanese petrochemical giant Formosa Plastic Group (FPG), the largest industrial conglomerate in Taiwan and the largest manufacture of Polyvinyl Chloride (PVC) in the world.

At first, the company strongly denied that the waste was toxic but admitted it contains traces of mercury. They claimed it had been certified by Taiwan's Environmental Protection (EPA) Administration as well below hazardous levels and safe for landfill disposal. However, the initial test result conducted in Singapore shows that the waste is highly toxic. Three preliminary analyses of a soil sample from the site show a mercury content of 675 parts per million, which far exceeds safety standards. Moreover, the second test conducted in Japan (the National Institute for Minamata Disease) has also judged a sample of the mercury-tainted waste to be highly toxic. The five samples test showed a mercury content ranging from 97 parts per million to 3, 984 parts per million (NGO Forum, 1998). Thus, in all cases the toxicity was high compared to normal safety standards (0.2ppm). So far, the persons who had direct contact with the hazardous waste containing mercury such as dock workers, villagers and armies who repacked the waste, complained about somatise, dizziness, weakness, visual trouble, headache, etc. At least, 10 people were hospitalized.

Cambodian government paid a great deal of attention to the matter. As the result of the discovery and negotiation with Taiwanese government, the Taiwan EPA concluded that FPG had unlawfully exported the wasted and ordered its removal from Cambodia's soil. Therefore, two Taiwanese were accused of falsifying the shipment's documents by the Cambodian municipal court. They were then fined \$ 480,000 and sentenced to five years of jail for violating people's health and environmental safety (TED Case studies, 1998). More than 30 Cambodian customs officials

have been suspended and accused in bribery and miss performed their duties.

It was until three months later, in March, 1998, that the waste began to be removed from the province and sent back to its original country. It was difficulty by the fact that, Cambodia, at the time of dumping, had no law explicitly forbidding toxic waste imports and Taiwan is facing similar problems in addressing the incident. The Formosa Plastic could only be fined in a small charge which hardly to recover the health of the residents. Up on the agreement, however, Formosa agreed to pay some compensation (Feb. 1999) and accepted partial responsibilities for the medical treatment to the victims from the waste and grated medical care to those diagnosed as suffering from the effects of the waste for the period of one year.

2. SUGGESTIONGS / IMPLICATIONS

There was suspected that the waste is widespread in the water, soil and probably the air as it was dumped in an open area. However, water sampling was conducted by the National Institute for Minamata Disease and WHO which concluded that the mercury concentration in water sources in the areas around the former hazardous waste dumping site were lower than the national and WHO's effluent quality standard. Thus, the communities can use water sources in these areas as required.

Hence, the story sound ended with such a good solution. However, was it true? Was it really the end of the story?

Based on the worst experience of the above case, Cambodian government have to recognized that there is a lack of environmental legal instruments which is one of the key factors of failure in the environmental quality management. The gap in the law and its enforcement remains wide which normally bring the poor to be as the victim of the illegal action. They are often at the front edge and the impacts always hurt them before any other types of people in the society. Corruption, additionally, is also the root cause of the case and causes disturbance to the whole country. The government should have considered that the lack of environmental legal instruments and law enforcement would become a major obstacle to carry out the poverty alleviation policy of the nation.

The story probably shows that Cambodia is a successor in combating/dealing with the mercury waste if comparing to the case of Minamata in Japan. However, it is just an idea that the economic logic behind dumping a load of toxic waste in the lowest wage country is impeccable. When hazardous waste left to the free market forces, it will inevitably flow on a path of least resistance from the rich, or from the heavily industrialized countries to the poorer countries. Everyone should face up to that and Cambodia either.

Indeed, the repetition of this unwanted free trade in toxic waste could be happen all the time in Cambodia if Cambodians are trying to forget the occurrence at Sihanouk province as well as Minamata's case, or are tempted to dismiss the cases as a one-time event and take no action to minimize the opportunities of the predicted tragedy. Otherwise, it will not be **“the end of the story”** and Cambodia itself will surely be victimized again and again.



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1. CASE STUDY

For the post program report I will try to analyse the case of Jakarta Bay pollution. The choice of location was mainly due to the distance factor and the proximity of the topic by the author as the citizens of Jakarta daily. Jakarta Bay is the shallow waters in the northern city of Jakarta, with the western boundary at Tanjung Pasir and the eastern boundary of the Tanjung Karawang. Port of Tanjung Priok and entertainment area of Ancol Dreamland is also located in the Bay of Jakarta. Some properties of high commercial value such as malls, luxury housing and industry on a national scale is also located at the mouth of the Bay of Jakarta.

Despite having a high commercial interest, but similar to Minamata case, Jakarta Bay is one of the most polluted bays in the world. The difference with Minamata, for Minamata the pollutant is only Chisso Corp, while the Jakarta bay the pollutant are varied. Citing a research from GTZ, Jakarta Bay is the mouth of 13 rivers that flow from the Greater Jakarta; with 1100m³ bring waste directly into the Jakarta Bay. The same research also states that the status of ecosystems and marine life in the Jakarta Bay has been on emergency stage. In a statement in the Kompas daily dated October 27, 2010, North Jakarta Mayor Bambang Sugiono states that the water in Jakarta Bay is so dirty; waste consists from household waste, dead animals to industrial waste flows into the Bay of Jakarta. An example of who contributed to the increasingly dirty waters of Jakarta Bay is case an oil leakage from ships that pass-traffic in the harbor. The spill contaminate the sea as thick as 3-5cm; damaging the whole area.

The Jakarta Municipal initiative in tackling this problem is to deploy dredging waste from the Jakarta Bay regularly. Last recorded on 21 November 2011, Jakarta Governor Fauzi Bowo launched the campaign "Save the Jakarta Bay Together"; held at the Ancol Dreamland. The main program of the campaign is to mobilize 400 fishermen who are members of the fisherman community to clean up trash floating in the Jakarta Bay.

There is a visible contradiction in terms of policy planning in Jakarta. On one side the governor campaigned vigorously to clean the sea of garbage, but on the other hand facilitate the reclamation permit to. Reclamation is an activity to fill certain space over the, so the sea is part of the mainland. Similar initiatives conducted in Minamata

by Masazumi Yoshii while served as the Mayor; when he transformed the sea into the Eco Park.

Why the reclamation plan is adding to a more aggravating conditions Jakarta Bay and what about the direct impact to the citizens? For this case, because it violates the reclamation permit General Spatial Regional Plan; plus six of the reclamation developers do not have the Environmental Impact Assessment (EIA). Some civil society organizations such as the Indonesian Forum for Environment (Walhi), the Association of Indonesian Legal Aid (PBHI), Institute for Policy Research and Advocacy (Elsam) has won the lawsuit in the Supreme Court. But the, victory was countered back so the reclamation continues. Without the EIA and development that deviates from the plan; the alleged reclamation will bring more severe environmental damage.

If we go back and compare the experience of Minamata to restore the ecosystem to the level of cleanliness it reach up until now; it will show just how minimal the initiatives already undertaken by the Regional Government of DKI Jakarta. The Jakarta Regional Government step to dredge the coast of Jakarta Bay did not break the chain of waste disposal in the area. The problematic behaviors that cause polluted Jakarta Bay dredging is not adressed and corrected properly, hence the initiative to clean the waste from Jakarta Bay will be next to useless. The last campaign in 2011 only urged the public to not only discharge their waste into the sea. For example, there is no policy to establish a strong law enforcement to the parties who dispose of their garbage in Jakarta Bay.

Applying a sustainable development approach as a solution to the of environmental damage in Jakarta Bay above is a initiative none has ever considered before. Easy definition of sustainable development is "meeting the needs of the present without compromising the needs of future generations". We understand that to expect a change in behavior without any supply of basic knowledge is like waiting for the sun to rise from the west.

Why choose a sustainable development approach to find solutions for the Jakarta Bay pollution problem? Notably because we want to seek solution which has holistic impact to the ecosystem. Actor act as culprit in in the Jakarta Bay pollution case is ranging from commoners, government official to big industries. Some important questions to ask in measuring how the sustainability of a development are the following:

1. how responsive an individual is facing environmental cases in the smallest scale?
2. how is the curricula for environmental education materials ?
3. how is the local culture be a factor in the case of environmental damage?

When compared with Minamata, the case of pollution in Jakarta Bay has no casualties yet with news value so media coverage can not be relied to give to add pressure for the Government . Pollution that occurred in Jakarta Bay become such a routine; thus making it difficult to identify any factor to mobilize communities to make any initiative.

2. SUGGESTIONS / IMPLICATIONS

Divided into three namely for policy makers (local government and local parliament), business and society

Policy makers: to make a breakthrough by making a participatory process while designing regional spatial planning thereby increasing public control. Acknowledge that the policy concerning Jakarta Bay pollution is a mistake and needed public assistance to find a solution. Proposals coming from the community can be used as incentives, for example for a company that initiated the work on the EIA are routinely granted tax relief area. Given the 13 rivers run the Jakarta Bay also passed in other provinces; a permanent forum to establish communication among local governments from each area for the purpose of updating the development concerning the river stream is a must. Legal issues that functions as factors blocking the enforcement of environmental cases should be addressed in short time. If the problem is in the legislation then a debottlenecking process must be conducted.

The business: running a business not in a prudent way is bad for everybody, not just the environment. Companies could reap benefit from a good reputation as a compensation for the contribution. The company's contribution can be in the form of corporate social responsibility by providing funding for environmental cleanup and citizen initiatives projects and a tax deduction

Society: the need to be done for civil society groups are environmental activists involved ordinary people in a way that does not patronize and deficits, so that in conducting its activities carried out in a positive way.



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The Impacts of Coal Mining in South Kalimantan Province ***(Case Study of Unsustainable Development)***

Introduction

Coal mining is one of the most significant parts of South Kalimantan province's economy and that it is steadily growing in importance. However, it also shows that the industry disproportionately benefits the better-off sectors of society and is having an unsustainable impact on the environment.

In South Kalimantan coal mining is very profitable business. It creates employment, generates value-added, and improves the foreign investment of a country or region. However, coal mining has its disadvantages including negative impacts, especially for environment. Coal is a dirty business for locals, with problems commonly including contamination of water, coal-dust in the air and coating everything inside and outside houses, and health problems. Coal mining also causes floods, deforestation and land degradation. Many mining areas are left without rehabilitation. As a consequence, land and ecosystems are damaged.

In South Kalimantan Province, there are have 26 (twenty six) mining permit from central government and 430 (four hundred thirty) mining permit from local government and also with environmental licenses to operate. They have 1,2 million hectares mining concessions, meanwhile this province just have 3,7 million hectares area, it means almost one per three of South Kalimantan larges is mining area. Legal miners are generally large-scale company. Besides these legal miners, there are many other small-scale coal miners without permit. We are called illegal miners. The number of illegal miners is growing. Almost every district of South Kalimantan Province contains several illegal coal miners. Illegal miners are unique and cannot be treated the same as legal miners, particularly in the application of rules and regulations.

Although the coal business seems to be profitable for both individuals and businesses, the benefits of this activity to the province are unclear. The coal industry is an industry of booms and busts, and hence the welfare of the community in the region is usually closely tied to the health of the coal industry. In South Kalimantan, this does

not seem to apply. There is a marked difference in the welfare and incomes of the communities living nearby the mine concessions and along the coal transportation roads and those of the coal miners who earn much more. The public get the dust and dirt of the coal industry, while the workers and managers get the benefits and advantages.

Actually, South Kalimantan produced more than 100 million tons coal in 2011, most of the coal mining in South Kalimantan is for export, in 2011 more than 70% or equal for 70 million tons coal exported to other countries in Asia and Europe, 29% is for Java and Bali coal power plant, and only less 1% for this province themselves including power for electricity generators, cement manufacture and other industries.

Economic Impacts

So far economic impacts of coal mining in South Kalimantan are added value for factorial incomes. This income is received by factors of production (labor and capital) in all economic sectors in South Kalimantan Province. Total royalty from coal mining in South Kalimantan Province reached only 404,6 billion Rupiah in 2011. This means that in South Kalimantan Province, royalty is a more dominant contributor to economic value. This has some influence on income distribution. This is the largest contribution among sectors in the South Kalimantan Province economy contributing 21.91% to total added value in the province followed by agriculture, 21.33%, Trading reached 15.30% for economic income this province.

Total employment in South Kalimantan reached 1,468,590 in 2004 out of a total population of 3,250,100. This implies that about 45% of the population works. Among all sectors in the economy, agriculture has the highest employment with 741,298 people. This is about 51% of the working population, implying that the agriculture sector is still dominant in the province. The other sectors with large employment shares are trading (15%), and services (11%). Although coal mining sector is quite dominant in terms of value-added and output, this sector together with other mining activities absorb only about 2% of the working population. There are only 33,738 people working in this sector.

If we have a look at investment in the region, we see how dominant coal mining in the South Kalimantan economy. From the total investment in South Kalimantan Province valued at 5,4 trillion Rupiah, 30.3% was invested in the coal industry. Large-scale coal mining absorbed 24.2% (1,3 trillion Rupiah) and small-scale mining absorbed 6.1% or 332,752 billion Rupiah. Although this value is less than investment in industry which has a value of IDR 2,2 trillion Rupiah, the coal mining sector is still leading considering the fact that the industry sector is grouped together with several sub-sectors, including textiles, clothing, plywood and wood sawmills, wooden goods, bamboo and rattan furniture, paper, printing and publications, chemicals, rubber and plastic, and non-metal digging.

Environmental Impacts

The mining method and the activities to deliver the commodity to consumers have negative impacts on the environment. In South Kalimantan, the strip mining method is commonly used. This method contributes to land degradation and forest cover destruction. The transportation of coal from mining areas to stockpiles also creates

problems such as water contamination, air pollution and deterioration of road transport services in terms of increased road damage, road accidents, and road density leading to traffic jams. All these environmental distortions reduce community welfare.

It is important to understand the environmental impacts of mining, processing, and utilization of coal. The choice of mining method is largely determined by the geology of the coal deposit. Underground mining currently accounts for about 60 percent of world coal production, although surface mining is more common in several important coal producing countries. In Indonesia also surface mining is given importance. Surface mining or open pit mining is only economic when coal seam is near the surface.

Open pit mines damage a large land surface area, displace people from their ancestral homesteads and cause agricultural losses. But the method is cost effective recovery is high, comparatively better in safety aspects and is considered to be a modern method. Surface mining requires large areas of land to be temporarily disturbed. This raises a number of environmental challenges, including soil erosion, dust, noise and water pollution, and impacts on local biodiversity. Mine subsidence can be a problem with underground coal mining, whereby the ground level lowers as a result of coal having been mined beneath. In South Kalimantan, almost mining company left their hole mining without reclamation and rehabilitation.

Social Impacts

Coal mining, despite the very substantial benefits they bestow on society, stir strong emotions. A great ongoing social challenge for the mining industry is sustainable development and community acceptance of it's role in society. The problem of mining-induced displacement and resettlement poses major risks to societal sustainability, for example:

- *Landlessness*: mining-induced displacement and resettlement raises the significant risk of landlessness by removing the communities upon which productive systems, commercial activities, and livelihoods are articulated.
- *Joblessness*: The ethnic people living in the designated areas depend generally for their livelihood on the land. Since, in mining areas the land is taken for mining and associated activities these people lose their livelihood. Post-displacement unemployment or underemployment is often chronic following the dismantling of the local income-generating resource base.
- *Homelessness*: Defined as the "loss of house-plots, dwellings and shelter." For many people homelessness may be only temporary, but in poorly executed displacements, it remains chronic.
- *Risk of Marginalization*: The risk of marginalization threatens displaced individuals and entire communities as they slip into lower socio-economic status relative to their local areas.
- *Changes in population dynamics (culture)*: All the manpower required for mining and associated activities comes from outside as such trained manpower is usually not available in ethnic population. Thus, the population dynamics of the area undergoes a major change over the years resulting in dilution of the ethnic population

- *Cost of living*: Increased industrial and economic activities generate more money and increase the buying power of the people directly and indirectly associated with these activities. This leads to an increase in the cost of living, which adversely affects the other people, including ethnic people, who are not associated with these activities.
- *Health Risks*: The already marginal health status of displaces is worsened by the stress and trauma of moving. Recurring problems are reported with resettled populations gaining access to safe potable water and safe sanitation; increased dysentery and epidemic infections often result.
- *Disruption of Formal Educational Activities*: Risk occurs in the disruption of education and routine socialization. Displacement and relocation often cause a significant interruption in the functioning of schools and in child access to education during the year of transfer or for longer periods of time.
- *Addictions*: Increased economic activities and affluence brings in more addictions in the society. In the tribal areas the ethnic people may also get affected by additional addictions.
- *Sexual disease around mining areas*. The prostitution sites are spreading around mining area. Last August, local newspaper reported the victim of Gonorrhoea venereal disease/GO had reached 39 people. At present GO sufferer can be twice as much. GO sufferer mostly within in the productive age range of 20-40 years old. Tanah Bumbu region with the most of mining permit have the first rank of AIDS/HIV victims in South Kalimantan Province.
- *Human right violation*, such as intimidation, terror, and displacement. The security officer and the government is always accompanied the land acquisition and the unilateral price decision by the mining company.

Unsustainable Development to Sustainable Development

Mining is a short-term activity with long-term effects. There can be no doubt that when it takes places in forest zones and around community productive areas, it is a factor of deforestation and land degradation. Mining comes along with its promise of wealth and jobs, but millions are those throughout the whole world who can testify to the high social costs that it brings with it: appropriation of the land belonging to the local communities, impacts on health, alteration of social relationships, destruction of forms of community subsistence and life, social disintegration, radical and abrupt changes in regional cultures, displacement of other present and/or future local economic activities. All this is added to the hazardous and un-healthy working conditions of this type of activity.

It may be held that many of the affected communities have given their consent. However, it is hard to speak of previous, genuine informed consent, as they do not have the opportunity to fully understand what is waiting for them when they are asked to place their signature on the dotted line at the foot of a contract. For this reason, mechanisms to enable indigenous and local communities to effectively participate in decision-making processes are called for, together with legislation enabling them to reject this type of undertaking in their territories.

Coal mining bring some benefits to economic growth but it's very unsustainable because of coal are one of un-renewable resources, have some negative impacts for environment and community, according with deposit of coal

resources in South Kalimantan just enough for 20-25 years to go, if we cannot reduce production and thinking about our next generation. When economically the most favorable strategy is no longer leading in terms of environment indicators. In fact, it gives the highest environmental impacts.



One of Concept of Sustainable Development

The quality of human life in the future is about the choices we make. For our choices and actions to be sustainable, they must be ever elastic, adaptable, and creative. You can plan and plan, but then also leave yourself open to mystery and discovery, for biophysical research and ecosystem science have demonstrated the interdependent functions in nature, as well as between nature and humans, and how recognition of these interconnections is important to preventing harm from our actions (Jacobs, 2000; Norton, 2005).

Sustainable development involves the carrying out of activities that offer economic benefits in the present without negatively affecting social and environmental choices that are available to people in the future, or in other places. We should be concerned about the "needs of the future" in our thinking about sustainability. In other words, people should be concerned about making sure the opportunities they have to achieve their own system values, the things important to them (range of environmental, social, and economic opportunities), are not in any way constrained for other places or people in the future by actions taken today. When we state a set of ideals (values) for what we want our community to be like, we identify those options and opportunities that give meaning to life in a place (Norton, 2005) for the present and for as much as we know about the future. "Important options" represent a variable to be specified as particular communities articulate their values and decide what is important to save for posterity. "An action or a policy is not sustainable if it will reduce the ratio of opportunities to constraints on people in the future" (Norton, 2005).

All people today should have sufficient resources (human, financial, environmental) to meet their needs, provided in a way that does not interfere with the ecological integrity of natural systems (options always depend upon having healthy environments and productive natural resources), so that similar options will be open to future generations. Our task ahead is to shape a sustainable future, using resources less intensively, where “resources” includes those things that support our economic and social productivity while also absorbing our waste products, by combining social, economic and environmental strategies that produce opportunities and minimize constraints for future generations (Norton, 2005) and people in other places through the practice of sustainable development.

Communities themselves are responsible for choosing what is important to monitor and what is important to protect, not inhibited by some kind of sustainability definition established somewhere else. Acting sustainably, assuring sufficiency and opportunity, guarantees a resource will not fall below a threshold required to perpetuate it through time to insure all people have sufficient resources to achieve a decent life and that everyone has opportunities to seek improvements in ways that do not compromise future generations. In many instances it comes down to differentiating “needs” from “wants.” Decision-making or government should encourage equitable distribution of resources to create a sense of fairness, identifying and satisfying real needs before wants and leaving options open for future generations. Living sustainably is maintaining the important mix of options and opportunities while creating no new and burdensome constraints; living unsustainably is losing them, narrowing the range of options that people in other places or subsequent generations can choose among in their attempt to adapt, survive, and prosper (Flint, 2006). Sustainability is most fundamentally equality over time and place, making sure we consume less than Earth's natural resources can provide. Economic development that is sustainable must be both environmentally sound and shared fairly among all society members. Not to meet this objective is to open the doors of conflict.

Suggestions

As sustainability concepts begin to take hold, the triad of concerns - economic development, social equity, and environmental protection - which were once considered an impractical, blue-sky ethic, have begun to define both long-term strategy and everyday practice of sustainable development and decision-making. Sustainability can be effective in helping the general populous to better understand why the overriding economic priority in our society is not profit and growth, but rather people and planet.

Sustainability is as much a construct in the social sciences as the natural sciences. In recognition of this intended multi-sector approach with regards how to sustainability, emphasizing the need to simultaneously consider and problem-solve for economic, social, and ecological goals. There is an immediate need for a system-wide integration of the different sectors of the environment as well as the different sectors of humanity when solving system-wide problems. The era of the specialist is over and the era of the generalist has begun. The methods of yesterday solutions are what caused the problems of today. We must be sure that they do not cause the problems of tomorrow as well. A holistic approach, better informed by the sustainability described here, is crucial to developing new methods of analysis and decision-making.

Regulatory Framework

A strong regulatory framework allows countries to set standards that companies must follow. Some experts contend that a more flexible regulatory framework is preferable than the more traditional command-and-control approach. Others acknowledge that a minimum set of rules by which companies must operate is necessary. Key components of a regulatory framework for mineral development include environmental impact assessments, environmental quality and social laws, environmental liability and strategic environmental assessment.

Environmental Quality and Social Laws

A framework of environmental laws and regulations provides guidance to mining and oil companies regarding a country's expectations for environmental and social performance. Some countries have strong laws and regulations on the books, including soil, water and air standards; indigenous/local community rights; and requirements for decommissioning and site clean-up. Implementation of existing legislation may also be lacking. Difficulty implementing laws may stem from conflicting mandates amongst government agencies.

Environmental Liability

Another important component of sound environmental legislation is the ability to hold polluters accountable. This may be accomplished through a requirement to post a reclamation bond, which is held until the company has satisfactorily complied with government standards for closure and remediation of a mine site. There are no set international standards for the amount that should be retained in reclamation bonds, and estimates of potential environmental damages are often provided by the companies, which have an incentive to underestimate true costs.

Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) is the process by which environmental considerations are required to be fully integrated into the preparation of Plans and Programs and prior to their final adoption. The objectives of the SEA process are to provide for a high level of protection of the environment and to promote sustainable development by contributing to the integration of environmental considerations into the preparation and adoption of specified Plans and Programs.



Aloon Phengmany (Laos)

**Deputy Director of Environment Section
Department of Natural Resources and Environment of Champasack
Province
(improved / announced On 25 Nov 2011 renamed from Water Resources and
Environment Office)**

1. CASE STUDY: Head of Water Area Management of Paksong District;

Paksong District is one of 10 districts depended on Champasack province located in the northeast of province with 355,235ha or 3,550 Skm2 approximately and it is covered by head of water of 13 steams and other springs that flow down to Mekong River and it is very important for providing water to agricultural plantation, industrial sectors and consumption of people living condition that is including in 3 district as, Pathomphone, Sanasomboun and Bachieng district, with population of 248,847. In previous time, the head of water in Paksong can assist to make a good condition of weather, biodiversity, providing to agricultural products and others. The weather temperatures are about 12-28 C and forested cover area is 80% of district area. Moreover there are many kind of natural resources such as, mining, high value timbers/wood, water resources, wetland area and land use for industrial trees plantation and vegetarians, etc. all of natural resources are supported to the local government as, well as the central level needed to make economic growths/GDP. Since 2000 to 2009, there are many companies came to Paksong and invested in many sectors. It is supplied to the government purposes; however, the developers did not follow/illegal implementation of investment law and some of them did not do an Environment Impact Assessment (EIA) and strict in controlling, monitoring and inspecting of project activities, people's activities and other causes which the Paksong head of water area is damaged, at last few years, some streams were dried and some little water can flow down, in some area is scarcity of water, the forest cover in the steam banks are destroyed, it is effected to 4 district's agricultural areas down stream , people's livelihood area and lack of drinking water in the next five/ten years or more than. If it is still existing.



Table of rainfall and temperatures in Paksong District 2006 - 2010.

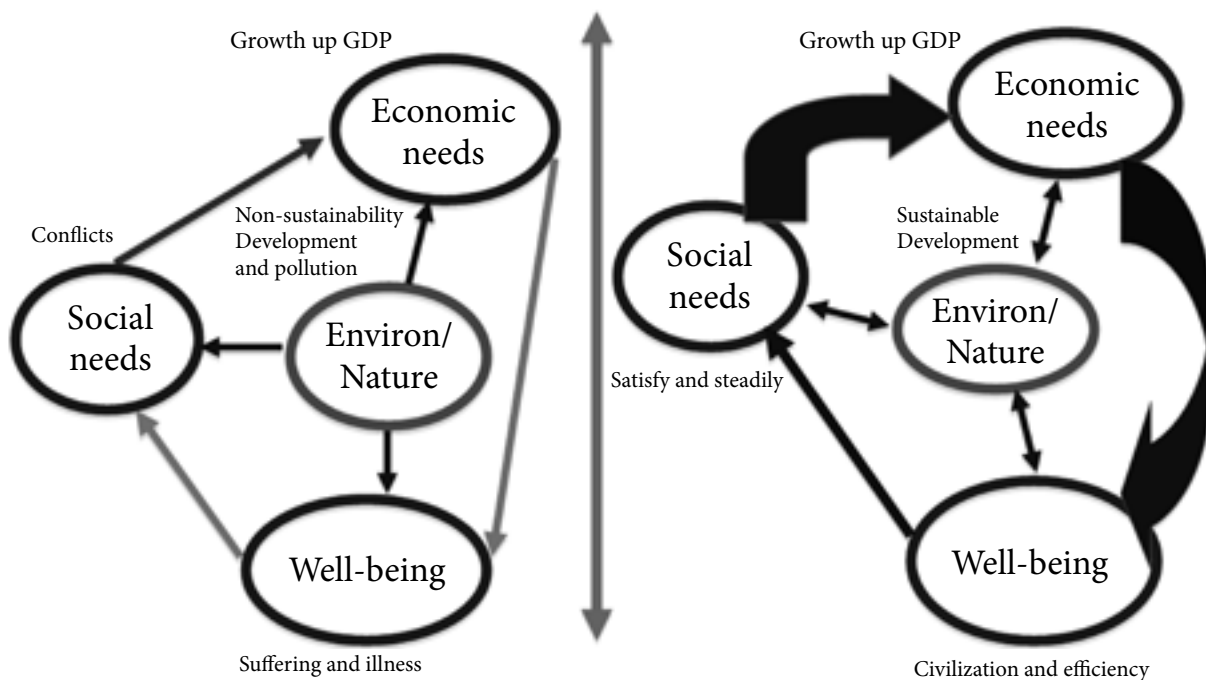
Descriptions	unit	2006	2007	2008	2009	2010
Rainfall	mm	2,693.5	1,888.2	1,813.7	2,219.5	1,467.3
Raining days	days	117	119	119	127	102
Temperture rate Avg.	oC	28.1	27.8	26.8	27.2	28.5
Temperture rate Avg. Hightest	oC	38.3	38.3	37.0	38.2	33.1
Temperture rate Avg. Lowest	oC	14.5	14.6	14.7	12.7	23.9
Moisture rate Avg.	%	71	72	72	72	68



Non-Sustainability Structure A:



Sustainability Structure B:



2. IMPLICATIONS

In Laos, there are many regulations, Laws, Decrees, Legislations and others that can use in line agencies works administrative, management, monitoring and inspecting to the project activities or project owners at central level

to local levels and we have policies and strategies to put and support for investors, country/community social-economic development such as, Environment Protection Law and regulation of Environment Impact Assessment (EPL, EIA), Water and Water Resources Law, Administrative Law, Investment Law and related laws. Above all mentioned should provide, aware, disclose/disseminate, evaluate of implementation and strictly enforcement to people, businessmen, investors and developers to know.

The local government as well as central should have a good structure for developing in each zone, which is suitable for. And will be sustainable development. In the other hand, the government should build more qualification of the staff, learn from other countries that are least impacts to the environment and social culture, and have more better academic/technicians officials who have high degrees, experiences and qualification. Moreover, the government should do project screening exactly before project allowance as, doing an EIA, IEE, etc.

To conduct a monitoring and inspecting project activities regularly for evaluation which project can follow and implement or be illegal by the laws and make a seminar or training workshops to review of real impacts from their project when we found any problems and punish who continue to make impacts or more effected to the environment and social/ people's living condition.

Developers should comply with related laws and regulations of Lao PDR and also participate more public awareness events. Thus, that they will increase their understanding on sustainable development way and think about benefits into 4 target groups as, people/social, state, developers and environmental sustainability/natural resources.

The beginning of project process/ procedure for doing a feasibility study or data collection of project should make a public consultation meeting, in this session should have representative/stakeholders from villages, concerned district and province level, this is very important for project development sustainability. Because, the meeting can recommend and expected to negative and positive ways. As, in Paksong district, the head of water area should consider and provide to projects establishing suitability. However, nowadays the local/central government awoke and hurried up to protect in this area, there are many policies, plans and projects and other activities to do and resolve for revitalization.



Sengphet Thanousone (Laos)

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Faculty of Environmental Sciences
National University of Laos**

Community Natural Resources Conservation and Environmental Awareness in Fueng District, Vientiane Province, Lao PDR

1. Background

The development of hydropower facilities, with planned and managed environmental impacts, is seen as an ideal opportunity for Lao PDR to enhance its economic prosperity and improve the lives of its people. However; the natural resources management should not be ignored from development activities. Hydropower development for example induces series of impacts and problems. The social and environmental impacts may include flooding of forest areas, changes in natural water flows, loss of high productivity on agricultural land, biodiversity loss, resettlement of people living in areas that will be inundated, loss of their access to and control over water resources and the migration of the impacted villagers from the project to the new resettlement area will inevitably depress on the natural resources and conflict with host communities in terms of sustainable natural resources usage and food security.

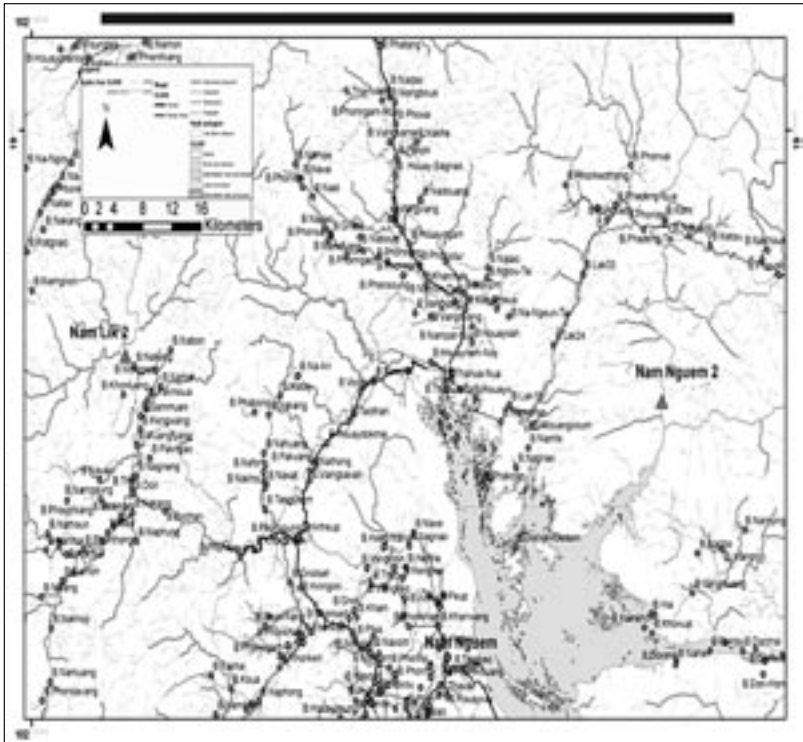
Nam Ngum2 hydropower is one of the great resettlements of nearly 6000 inhabitants to live so far from their old villages and traditional live style to settle in the living environment. These impacted people had relied their daily life on natural resources, fisheries, livestock, and non-timber forest product gathering for consumption and additional income. The new resettlement village is about 100 km from their old village or about 170 km from Vientiane to the north and nearby Nam Lik 1-2 Hydropower plant.

The increasing of high density population need the large of land for agricultural production, fisheries on the river, and access to forest nearby for non-timber forest gathering for food and energy sources; especially, the NTFPs contribution is significant to the national economy due to their important role for household economy, and rural food security, which is the one of the main government policies for the agriculture and forestry sectors. The Lao definition of food security “to assure enough food and foodstuffs for every person at any time, both in material and economic aspects, with increasing demand on nutritional quality, hygiene and balance so as to improve health and

enable normal development and efficient work". The forests play a critical role in both community livelihoods and national economic development in whole of Laos.

While this resettlement project has been limited for natural resources accessibility, this would be depression on the livelihood of the settled people. The main objectives of the research project are to investigate the benefits of forest land on contribution to local food sources and survey of forest land which possible to rehabilitation for edible plants for food consumption. The result found that the villagers get a small agriculture land about 0.5 ha/household for agricultural activities such as cash crop growing, orchard garden, paddy rice growing which depend on land suitability, location and water and about 600 m²/household of land parcel for housing; including mixed trees and vegetable, fish pond and others depending on land use planning by owner for food sources in the village. These program can be solve the food shortages in sometime of a year, but it is not can be provides all year round when compared with the old community settle near the natural forest area.

The resettlement project of NN2 at the Phonsavath Village with population about 5,992 people and the existing degraded forest area of village about 1958.91 ha, the forest can be categorized into protected forest 306.4 ha, watershed forest 472.07 ha, production forest 749.30 ha and other about 400 ha. The forest is mainly located on Limestone Mountains and abundant upland cultivation in the slope area. There are only some of villagers (new comers) know that where is their village forest area. The benefits of village forest to the new comers are very low proportion comparing to existing residents and about less than 20 edible species of non timber forest products which causes insufficient food for local food consumption, limitation of fuel wood access for daily energy cook and lack of house repair material and some of villager practices on upland rice growing for rice sufficient. The case study site show on the map:



Faculty of Environmental Sciences, National University of Laos has established Environmental Research Station at Fueng District near by the resettlement project. We plan to conservation the forest area by conduct the research on potential of NTFPs for contribution of food to the resettlement community, this small program of NTFPs management and village forest conservation is a one solution discussed to conserve and rehabilitation the forest to contribute local food security in the future.

The lesson from field trip in Japan I visited community forest and natural resources management at Jimotokaku community. The experience and local wisdom was importance to transfer the local knowledge for using water resources, forest resources, and Land resource. The experience has transfer to youth to participating in forest and used edible plants very clever and preserved to consumption for year round.

The Laos case study as mention above is very similarity with the Jimotokaku community where people depend on natural resources for food, medicinal plants, water for agricultural production and timber for house construction. The villagers at Jimotokaku also believe Buddhism and mountainous gods. Based on their long term experiences, villagers have taken the concept of efficiency economy and strong sustainable forest management. Leadership and active participation of community members have been expanded, improve the relationship between believe and conservation the forest, watershed and environmental awareness could be summarized as bellow:

- The communities have been carried out a series of forest restoration and also conducted to strengthen the role of villagers and youths in forest restoration. Edible medicinal plants have been planted in supporting people livelihood. Fruit Trees and Organic vegetable garden also use for education purposes and awareness purposes.
- Moreover water supply. The community emphasized the important of water storing in the streams for clean water supply. People realized the importance of improving riverine ecology. Villagers who live nearby the stream have been encouraged to consider the important of social benefit. It is expected that water quality is improved and all year round water supply is possible.
- Local Institutional development activities- Institution defined as organization, rules, agreement, traditional beliefs, cultures and decided in forest management goal as “forest healthy, increased food sources, and water for sufficiency agriculture.
- Every plans and activities were agreed from the villagers such as participated in meeting and discussion, shared the idea of forestry management practices and make decision.
- Responsible stakeholders. Not only community forested committee that involve in the management of the forests, water and land resources.

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- The roles of the village organization were collaboration within and outside community and act as coordinator for implementation of program activities.
 - The community leaders take a strong lead in the environmental committee. Successful program of community forest will depend on the activation of the leadership role.
 - Villagers: The elders participating for training and conduct activities to encourage leaning among the youth groups regarding community forest management and sustainable forest dependency. Thus, the elders also transferred their knowledge, experience, local wisdoms, jointed in forest management plans and decision-making.
 - Schools/Teachers: teachers jointed natural resources management and extend knowledge and learning process to students about community forest and natural resources management, improved local wisdoms, human resources development and emphasize awareness-raising for students and youth with in communities and for visitors.
 - Youth group: inherit community possessed knowledge, wisdom regarding forest management and participated in forest management activities. Youths have been trained to understand the important of forest resources, water, land and air and strengthening youth group for active participation in natural conservation.
 - Networking and collaborative development- These participations allowed community development in forest management system and exchanged knowledge with the support and collaboration of concerned agencies.
 - Community participation and development- Knowledge sharing and information exchange regarding community forest management, water management, facilitate training the local students on special environmental education guide.
 - Other activities- More activities have been done such as encouraging traditional community practices, publicizing to and coordinating with neighboring communities, promoting and strengthening community networks, facilitating skills development to extend community lesson learnt, and improving the community information center.
 - The success lesson learn from Japan case study are possible to transfer and implement in Local area of Laos for community forest conservation, water resources management and sustainable Land use in the resettlement project in Lao PDR.

2. Objective and Scope of Study

General objective

The general objective of this study is to assess the natural resource use and conservation by local community, indigenous knowledge and resources management activities.

Specific objectives

- To survey the socio-economic, Land use and mapping by villagers' participation
- To assess daily contribution of NTFP in terms of quantity to food security at households level.
- To identify level of understanding and good practices of local people toward utilization of NTFP, Forest, Edible plants, Medicinal Plants, Water resources use which is supposed to be good for dissemination and to require extension support.
- Interview with key informants: youth, elders, village headman and women group to identify the community status

3. Data Collection

The method of data collection will be used at site:

- Semi-structured interviews with key informants (local administration, development authorities...) as well as to identify problems on resources use and conservation.
- Baseline data collection through households interview using specific questionnaires focusing on socio-economic and environmental awareness.
- Forest, Land and Water resources survey and mapping
- Drawing sketch maps, Brain storm and Discussion with villagers.

4. Data Analysis

The data will be analysis with multidisciplinary and expected result such as information description, charts, picture, resources mapping, land use calendar, forest resources use activities, water resource use problem and also including to pesticide use in agriculture production of local villagers. To identify the strengthening, weakness, opportunity and threaten and what information and lesson learn from Japan could be apply for community participation on natural resources conservation.

5. Programme Activities(Environmental Training and Awareness)

- The volunteer activities on environmental awareness and forest conservation
- Community mapping with villager such as elders, youth, village headman, women group, teachers and school students.
- Exchange knowledge between FES student and local community
- Problem discussion and solution
- Activities with youth group at village, district level with participation of volunteer student of FES on water check dam construction, environmental awareness guideline development, forest planting activities, edible plant planting activities
- Awareness on the impact of pesticide use
- Discussion and planning about organic vegetable garden

6. Expected Outcome

The expected outcome of this natural resources conservation study and awareness could be summarizing as bellow:

- The understand the natural resources management status of the community
- Provided more detailed information of resettlement project
- Field site guideline development for Faculty of Environmental Sciences(FES)
- Provide information for environmental awareness for the villagers, teachers, student and improved for develop of community learning center.
- The student of FES could be learn about community at field site through community mapping and photo activities.



Norazlina Hidawaty Binti Mohd Radzuan (Malaysia)

Assistant Secretary

Ministry of Natural Resources and Environment

1. BACKGROUND

Malaysia serves an important passway for ship from all over the world. By virtue of its geographical location, the seas bordering Malaysia namely the Straits of Malacca and the South China Sea serve as important sea-lanes linking the west with the far east. In recent years, there has been a steady increase in the volume of vessel traffic along the Straits of Malacca partially due to increased oil trading. Hence, operational or accidental oil spills, spills from maritime casualties namely vessel collision or grounding as well as spills from deliberate illegal discharge of oil sludge/oil waste are among our concerns. The scene is somewhat dissimilar in the South China Sea where operational oil spills resulting from rampant off-shore oil and gas explorations activities is a predominant apprehension.

2. CASE STUDY - OIL SPILLS IN MALAYSIA

Around mid-October 1997, the Straits of Malacca suffered from the largest oil spill to date due to a collision between the loaded east bound tanker Evoikos with an empty west bound tanker Oraphin Global. Although the accident occurred in the Singapore waters, the 20.5 mile long slick drifted into the Malaysian and Indonesian waters affecting coastlines of west coast Peninsular Malaysia. In most recent years since 2007, however, we have been made aware by the media of reports on oil sludges from unknown sources landing on beaches in southern Johor especially in Kota Tinggi district, affecting the livelihood of the local community and fishermen.

Despite improvements in safety of navigation especially along the Straits of Malacca and Singapore coupled with diligent maritime enforcement and surveillance efforts in our waters, maritime casualties resulting in oil spills continue to occur.

More recently, on 25 May 2010, the collision between a tanker MT Bunga Kelana 3 carrying light crude oil collided with a bulk carrier MV Waily about 4 nautical miles off the coast of Tanjung Setapa, Pengerang, Johor, resulting about 2,500 metric tones of light crude oil spilling into the sea affecting both waters of Singapore and Malaysia . In

Singapore, the media reports that an estimated 7.2 km of beaches and rock bunds along Singapore's east coast as well as a canal, have been affected by the slick. On the Malaysian side, despite all efforts to contain and recover the oil at sea, slicks of oil were washed ashore affecting approximately 18 km of beaches along the south and south east of kota tinggi district from tanjung pengelih to tanjung punggai. Close to 200 fishermen were reportedly affected by the incident.

3. IMPLICATIONS

NATURE

Behavior of oil in the sea

Petroleum or crude oil is a naturally-occurring, toxic, flammable liquid consisting of a complex mixture of hydrocarbons of various molecular weights, and other organic compounds, that are found in geologic formations beneath the earth's surface. Each petroleum variety has a unique mix of molecules, which define its physical and chemical properties, like colour and viscosity.

Assessing the toxicity of oil can be a tricky business. The main difficulty is that 'oil' is typically a mixture of many different chemicals. Proportions in the mixture vary even within a single category of oil, like crude oil. For example, Arabian crude oil differs in composition from Louisiana crude oil, which differs from Alaska North Slope crude oil.

When oil is spilled, most of the volatile compounds evaporate quickly. The oil, however, remains floating on the surface of the water and starts to spread, forming a very thin film which can cover large areas of water. A small percentage undergoes process of dispersion, sedimentation, biodegradation and dissolution. Over time, as the oil weathers, it emulsifies and forms a chocolate mousse-like appearance.

Effects on the marine ecosystem

Oil spills largely affect marine life which live, hunt, or travel in the area covered with oil. Different types of marine life are impacted differently, depending on their physiology and habits. The compounds left behind after the volatile compounds play a large part in why oil spills affect marine life, it usually happens at multiple levels of the food chain, requiring a lot of work to fix the problem.

One of the most direct ways in which oil spills affect marine life is by essentially suffocating plants and animals. Marine plants can be covered in a film of oil which prevents oxygen and water exchange, causing the plants to die. Marine life which feed on this vegetation will in turn struggle to survive. Coatings of oil on the flesh of birds and mammals can literally kill them through suffocation. Oil spills also affect marine life such as birds by stripping the water resistant coating from their feathers. A bird weighed down by oil may have difficulty flying, and could develop hypothermia as a result of exposure to extremely cold water. Bird mortality is recorded to occur during most spills and in some major spills, breeding colonies have been seriously depleted.

Marine mammals also suffer, as oil can remove water resistant compounds from the coat of furred marine life like otters and seals. Some animals eat the oil while trying to clean it off their fur or feathers, or while scavenging on dead animals. Oil is toxic when ingested and can cause sickness or death and in our case, especially to the famous dugong, a protected marine mammal in Malaysia that can potentially feed on contaminated seagrass beds. Oil spills also affect marine life like filter feeders by concentrating in the flesh of these animals. Clams, mussels and oysters may quickly accumulate toxins which can kill the animals or be passed on along the food chain. Animals that rely on these filter feeders for food may become sick and die as a result of consuming them. In the long term, oil spills affect marine life by interfering with the ability to breed, reproduce, grow, or perform other vital functions.

ECONOMY AND SOCIAL

In addition to the direct biological, ecological and environmental impacts, there are less direct but equally pressing economic and social disruptions that take place post-oil spill. Contamination of coastal amenity areas is a common feature of many oil spills, leading to interference with recreational activities such as bathing, boating, angling, and diving. Hotel and restaurant owners and others who gain their livelihood from the tourist trade can also be adversely affected by oil spills if their water intake points are affected by oil slicks. On the part of fisheries, oil spills can damage the boats and gears, apart from economic loss suffered by fisherman as they are not able resume fishing in the affected area for an extended period of time.

The collision of the tanker MT Bunga Kelana 3 and a bulk carrier MV Waily has caused 2,500 metric tones of light crude oil spilling into the sea affecting both waters of Singapore and Malaysia. It has affected the livelihood of Malaysian fishermen and the tourism industry around the affected area. Total claims for clean-up cost by the Department of Environment and the Malaysian Maritime Enforcement Agency and claim for loss of income by the fishermen and resort operator was about USD2.4Million.

4. SUGGESSTION

Sometimes the attempts to clean up an oil spill can also indirectly cause harm to coastal flora and fauna. In addition, simply sending unskilled cleanup teams into an oiled area or usage of heavy machinery on swampy sites can trample sensitive organisms and mix oil more deeply into the soil, consequently worsening efforts to remove oily residue. This is the reason as to why the experts who respond to oil spills consider all of these potential problems when evaluating the trade offs of how far to go in removing spilled oil.

To avoid collisions in future, passage of ships along these sensitive areas must be monitored closely including areas as far as the middle of the sea. Arial monitoring using helicopter is more effective compared to the light aircraft (Cessna).

Contractors for the cleaning works must always be ready all the time and well equipped.

Rehabilitation and restoration

The natural adaptations of populations of animals and plants to cope with environmental stress, combined with their breeding strategies, provide important mechanisms for coping with the daily and seasonal fluctuations in their habitats and for recovering from predation and other stochastic events. Removal of bulk oil contamination through a clean-up operation is the first stage in the recovery and restoration of damaged environment. Dependent on the scale and nature of the spill, some habitats are able undertake natural recovery while in cases where habitat recovery would be relatively slow, the clean up operation needs to be followed by restoration measures.

While it may be possible to help restore damaged vegetation and physical structures, developing an effective restoration strategy for aquatic life is a greater challenge. In reality, the complexity of the marine environment means that there are limits to the extent to which ecological damage can be repaired through human intervention.

While the short-term effects of oil spills on many marine aquatic life and ecosystems are better recognized and predictable, concerns are raised about possible long-term effects to determine the full extent of damage and progress of the recovery. Broad spectrum research and detailed post-spill studies should be carried out with scientific rigour, objectivity and balance, with the aim of providing reliable and useful information towards assessing pollution damage, reasonable reinstatement measures and habitat recovery.



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1. Case Study

Sustainable development refers to development that meets the requirements of the present generation without destroying the ability of future generations to meet their needs. An important concept in talk about Sustainable Development is "the world must live within the limits of capacity of planet earth".

Jimotogaku practice was firstly started in Minamata where local communities had been destroyed by adverse impact of Minamata disease. It helped the local people to re-construct and revive community actions there, and then Jimotogaku practice was spread out to various local communities throughout Japan where local people and outsiders learn each other to find out existing resources and to utilize them for community development.

On the sixth day of the trip, we visit Village Lifestyle Museum in Okawa, Minamata to experience Jimatogaku Fieldwork with the all the participant and Mr. Tetsuro Yoshimoto, from Jimotogaku Network. At the first glance, I realized the similarity of the Jimatogaku concept applied by the people in Malaysia.

In the early 50's, Malaysian government has introduced an agency that deal with the scheme to relocate rural population into new areas developed in order to improve their economic status. The agency known as the Federal Land Development Authority (FELDA) focuses on the opening a farms for each settlers who join the resettlement. Settlers will be given a land of 40,000 meter square in a particular placement for working in rubber plantations or oil palm. Each settlers are also given spacious 1,000 meter square residential areas in a planned village equipped with basic amenities such as water, electricity, schools, medical centers and places of worship. FELDA schemes are only reserved for the Malays who form the majority of Malaysia's population. By 2000, FELDA cultivate the land of 9,000 square kilometers, mostly oil palm plantations. Although the main objective is to reduce poverty for the Malays in rural through the resettlement, it is reported also holds minority interests in some of Malaysia's major banks.

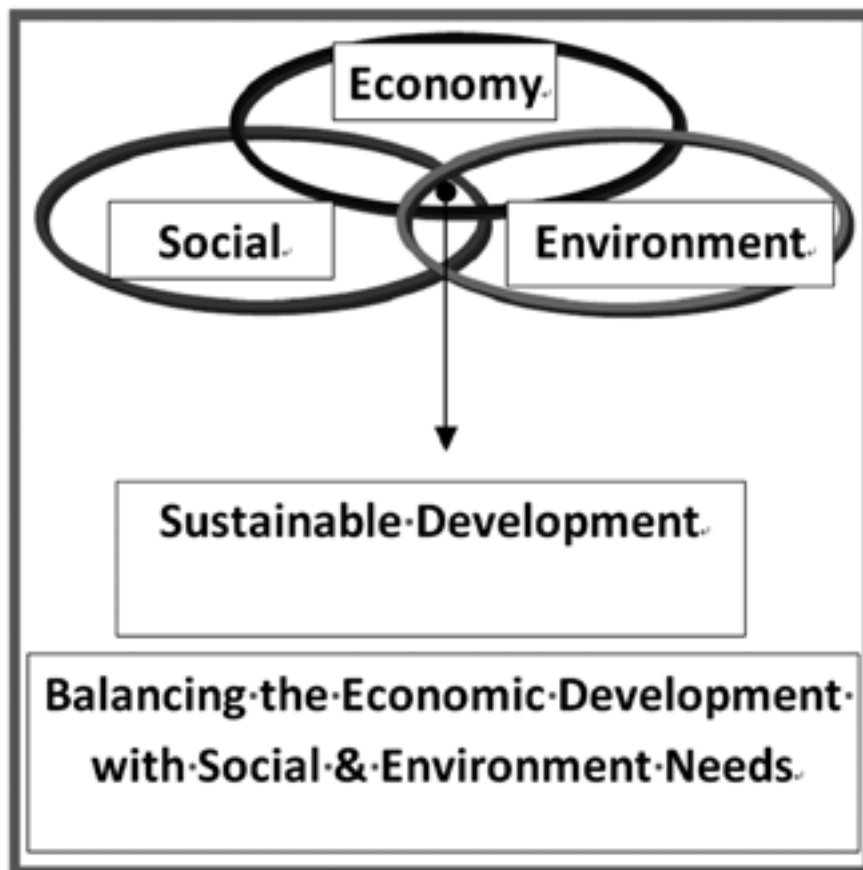
With the opening of vast new land, the land area of Malaysia has changed. Many forest areas were cultivated on a large scale to accommodate the number of settlers who joining the schemes & agree to move.

Poor land use practices lead to serious problems and face challenges to development in the long run. Problems that arise include permanent damage on the ability of land to provide environmental and economic benefits, inefficient use of available natural resources and the accumulation of negative effects. In terms of area, agriculture will be one of the most extensive land developments in Malaysia.

Modern agricultural techniques and practices, supported by the use of machines and large amounts of energy input from fossil fuels has made agriculture more productive in Malaysia but have an impact on the environment. Conversion of land from forest to agriculture has resulted in widespread deforestation; reduce the amount of forest and forest diversity and wildlife biology.

In addition, opening new areas for agriculture has resulted in dwindling mineral resources in this area. Despite the fact that most land has been reduced to agricultural development, most fertile soil is not used for food production, besides used for other purposes such as housing. Plus, Malaysia is one of the most extensive uses of pesticides most intensively in Asia (Repetto dan Baliga (1996)), the amount of pesticides used per hectare of crops for the year 1992 reported 9.2 kg / ha which is almost ten times the amount used in Thailand for the same period. In addition to water pollution problems due to intensive use, Malaysians are using sprayer and sprays pesticides that can penetrate through the skin and body.

From my point of view, I can summarize this situation in a simple diagram.



The settlers wanted to boost their economies by joining FELDA. The benefits to themselves and their families is the main reason why they join the scheme. But, when the second generation took over FELDA daily work, they are a generation of educated and have at least secondary education. They are more exposed to environmental issues and appreciate the conservation of existing resources.

Most of them come from very remote areas. They are familiar with the forests that have the most valuable natural treasures. When placed in the newly emerging area, they realize something must be done to maintain the beauty of the environment and safeguard natural resources heritage. They work together to ensure their survival and they are not left in a matter related to their daily lives.

One case study that I would like to share is FELDA Trolak. It consist of 3 cluster that is North FELDA Trolak (coordinate N 03° 56.782" E101° 21.190), East FELDA Trolak (coordinate N 03° 56.408" E101° 25.367") and South FELDA Trolak (coordinate N 03° 56.782" E101° 24.212")

There a lots of resources whether in the form of nature or man made for every cluster. Research done by Fatimah et.al (2007) found out that there are 10 elements of resources that have good potential for tourism product such as educational tourism, ecological tourism, village tourism etc.

TABLE 1

Resources	Potential for Sustainable Tourism
Tropical Rain Forest	Ideal for ecological tourism, forest exploration, nature study, bird watching, educational tourism
Hills and nature landscape	Ideal for ecological tourism, forest exploration, nature study, bird watching, educational tourism
Exotic wildlife	Suitable for educational tours, activities to explore animal life, environmental studies, ecological tourism.
Various flora & fauna	Able to make tourism products in the context of education tourism, health tourism, eco tourism, travel trade, herbal , flowers, fern, nursery activities, development of orchards, herbal treatments and spa activities
Soil, clay & minerals	Ideal for crafts, pottery, soap making, gem mining, fish farming, river, tourism education and health tourism
Rivers, waterfalls, lakes, wetland, hot water pond & cool water from the mountain	Suitable for educational tourism, ecological tourism, health tourism, fish farming, water activities, canoe, aquaculture and the development of resort and spa
Plantation & farm processing activities	Suitable for educational tourism, plantation tourism, tourism industry, cross-country activities, outdoor activities for motor, animal and plant bananas, herbs and oil palm-based activities such as handicrafts and animal feed
Agricultural building, infrastructure	Suitable for a lodge or homestay, tourism education, tourism farm, the location for seminars or conferences, the location of bazaars / festivals, tourism industry

Skills and experince of the settlers, settlers day-to-day chores and ancillary activities	Suitable for educational tourism, farm tourism, tourism industry, turned into a museum or gallery science of life, made the documentation and publications.
The discovery of unique and traditional settlers, food, language, way of life, the existance of idol and the settler leadership qualities	Suitable for educational tourism, farm tourism, tourism industry, turned into a museum or gallery science of life, made the documentation and publications.

2. Suggestion & Implication

The concept of sustainability or sustainable quality of life often relate the system covering economic, social and environment to ensure a decent living and a healthy and productive environment. This goal is not only to the needs of the present generation but also the generations to come. This led to the term that is always used, such as sustainable development, sustainable communities, sustainable agriculture, and sustainable education.

Based on this fact, that sustainable development is inseparable from that integrates elements of geography, economic, social and environmental studies in different contexts. Sustainable development is a development concept that emphasizes the integration and balance between economic development and social and environmental requirements to meet current needs without affecting the ability to meet future needs. Various concepts of sustainable development already exist and all are appropriate to different situations and purposes. However, all the meaning of sustainable development that has been used to load the main theme of the universal covers the aspects of the environment, the future and fairness. It always be emphasized that the tourism sector has been a major contributor to the progress and development. A total of RM1.8 billion is allocated to the tourism sector to repackage existing infrastructure, to provide tourism facilities and to develop more tourism products and innovative services. Some of the step take are to rise up Malaysia's image and increase the number of domestic and international tourists.

In conclusion, the tourism sector has been identified as one sector, the rapid economic growth and the process of a State. This is because:

- Tourism can use a variety of resources available in an area
- Tourism can expand economic opportunities to all areas whether in town or rural
- Travel pave the way toward reducing poverty, providing jobs and boost regional development
- Tourism can give incentives to preservation of the natural and cultural assets and heritage
- Tourism stressed the importance of culture and tradition.

Some suggestions for improvement to implement sustainable tourism development can be accomplished with the best possible. Among them are:

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- Focusing on needs of the various categories of tourists and affordability. For example, the entrance fee to the citizens, the disabled and school children. This will improve the ability of communities to the various categories to enjoy the products and activities.
 - Create a variety of travel packages as one of the agenda. Packages may be able to integrate a variety of other resources available in the FELDA Trolak as listed in Table 1.
 - Intensifying the campaign of the place. The use of ICT is important (website or blog)
 - Require improvements, especially the way in and out and widening the road. However, this improvement should be integrated with the conditions so that they beautify and not destroying the environment.

Thereby, the marketing strategy & research and development activities need to be implemented to maximize the sustainable tourism development for this FELDA Trolak

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Nyein Nyein Khine (Myanmar)

Head of Branch

Ministry of Environmental Conservation and Forestry

1. Environmental issue in Myanmar

Myanmar like other developing countries faces environmental problems arising from underdevelopment and poverty. Myanmar also encounters to a certain extent of the problem of deforestation. Deforestation in Myanmar, unlike in some other developing countries is not the result of commercial extraction of timber but due to population growth.

Shifting cultivation practicing mountain areas of Myanmar which are Kachin, Kayah, Chin and Shan States is one of the factors causing deforestation. Shifting cultivation is a poor form of land use even though it is a traditional way of life which has provided the rural population with basic needs. Most of the shifting cultivators are unaware of any damage to the environment caused by their traditional farming system. In the absence of any other viable alternative in their ecological setting they regard their farming as appropriate mode of food production, though in the process they destroy the valuable timber species and their regeneration, causing soil erosion and depletion of soil fertility.

Mangrove forests in coastal areas of Myanmar are also important natural resources because mostly people in this area rely on mangrove forests for their livelihood and these forests make sustainable ecosystem for natural habitats. Most of the extensive mangroves become degraded because of overexploitation of fuelwood and charcoal production to meet the demand of increasing population.

Although Myanmar has a relatively low population density compared to most countries of South East Asia, the forest resources and natural environment has come under growing population pressure, resulting in deforestation. The total population of Myanmar is about 58.8 millions. About 70% of total population in rural areas relies on the forest resources for their livelihood. In Myanmar, more than 90 per cent of renewable energy consumption depends upon forest resources. Few rural homes in Myanmar have supply of gas or electricity. Thus there is heavy reliance on fuelwood resulting in the depletion of forest cover in marginal forests outside the reserve forest areas. The rural poor has no alternative sources of energy for cooking and rely mainly on fuelwood collected from the adjacent

degraded forests, extending into other unclassified forests.

To solve the shifting cultivation and fuel wood problems, the Government has exerted efforts to alleviate the rural poverty by launching a multi-faceted programme for the development of border areas and the national races. The government's support for their long-term agricultural development programme and the development of mini-hydro power plants and water resources will provide the alternative sources of energy for the local people, lessening their dependence on fuelwood. With the introduction of modern agricultural skill and with the provision of a wide range of direct inputs, support service and infrastructure, the programme is encouraging the national races to stop with the environmentally unsound practice of shifting cultivation. This rural area development programme would reduce the area under shifting cultivation, resulting in conservation and regeneration of forest resources in the mountain ecosystem.

2. Implications

Until early 1990, the respective ministries directly carried out environment management programme in each sector in Myanmar. In February 1990, Myanmar formed the National Commission for Environmental Affairs (NCEA) and the Commission acts as a national focal point for environmental matters and promotes environmentally sound and sustainable development activities in Myanmar. The Nature Environmental Conservation Committee (NECC) was firstly formed in 2004 and reformed in April 2011 to act as a central agency with many more functions both internal and international and more powers to effectively manage the environmental conservation and protection works in Myanmar. The Chairman of NECC is the Minister for Ministry of Environmental Conservation and Forestry. In September 2011, the name of the Ministry of Forestry was changed to the Ministry of Environmental Conservation and Forestry with the aims of developing body for emphasizing environmental conservation measures.

Myanmar adopted the National Environment Policy on 5 December 1994 which integrates environmental protection in economic development. The objective of Myanmar's environment policy is aimed at achieving harmony and balance between these through the integration of environmental considerations into the development process to enhance the quality of life of all its citizens. The policy clearly states that "Environmental protection should always be the primary objective in seeking development." Regarding policies related to environment, in February 1995, Myanmar Forest Policy was issued with a view of the importance of the Myanmar forestry sector in enhancing national socio-economic development and it comprises six imperatives: protection, sustainability, basic needs, efficiency, public awareness and participation. In Forest Policy, the environment is highest priority in order to achieve broader national goals and objectives. Similarly, the Ministry of Energy has also issued policies to maintain the status of energy independence, to promote wider use of new and renewable sources of energy, to promote energy efficiency and conservation, to promote use of alternative fuel in household.

With the view to implementing the national environmental policy, Myanmar Agenda 21 was formulated and published in 1997 which is a Plan of Action for sustainable development in the country. The purpose of Myanmar

Agenda 21 is to mobilized and focus national efforts to achieve sustainable development. An environmental commitment by Myanmar is the development of National Sustainable Development Strategy (NSDS) Myanmar launched in 2009.

At present, Myanmar has submitted drafted National Environmental Protection law to the Parliament for adoption. In Myanmar there are more than sixty sectoral laws which are related to environmental protection.

As major post-UNCED (United Nations Conference on Environment and Development) initiatives related to sustainable forest management, Myanmar has reformulated and adopted new policy and legislative measure: Forest Law in 1992; Protection of Wildlife, Wildplants and Conservation of Natural Areas Law in 1994; Myanmar Forest Policy in 1995; and Forest Rules in 1995. The Forest Department under the Ministry of Environmental Conservation and Forestry issued 'Community Forestry Instructions' in 1995 to promote community participation in forestry development. In order to promote green environment, especially in the semi-arid area of the country, 'Dry Zone Greening Department' under the Ministry of Environmental Conservation and Forestry was set up in 1997 and environmental rehabilitation measures are being undertaken in the Dry Zone Areas. One of the six imperatives of Forest Policy in the text for Sustainable Forest Management (SFM) is to satisfy the basic needs of people for timber, firewood, food, shelter and recreation. Moreover, Myanmar's effort to protect and conserve forestlands and resources under the green project has resulted in environmental balance, which in turn is supporting the improvement of food production and socio-economic conditions. Myanmar Selection System has enabled the country to use its forest resources on a sustainable basis. The Dry Zone Greening Department has formed a total of 117,000 ha of plantations in the region.

Myanmar has also drafted National Forestry Master Plans (NFP) for the whole country and for the Dry Zone within the context of national sustainable development strategy. In National Forestry Master Plans (NFP), the existing 50% of coverage of forests over the total land area of the country is to be maintained, of which 40% would be designated as Permanent Forest Estate (PFE) and the rest, 10% for conservation forest to meet the growing needs of the agricultural sector and other uses for the States. Currently the following activities of the forest sector, among others, are contributing to the reduction of deforestation rate as well as to the mitigation of adverse changes in climatic conditions-

- Protection of remaining natural forest;
- Restoration and rehabilitation of degraded forest;
- Rehabilitation and re-forestation in the central Dry Region;
- Control of Shifting cultivation;
- Watershed management activities;
- Rehabilitation and conservation of fragile forest ecosystems like mangroves;
- Establishment and expansion of Protected Areas Systems and
- Introducing reduced impact logging practices
- Establishment of forest plantation for environmental greening and for local supply of firewood and small

timber and

- Strengthening and promotion of utilization of wood fuel substitute

The total amount of over 500,000 hectares of forest plantations has been established throughout the country. The natural forest cover of Myanmar is about 47%. Gradual depletion of forest resources has harmed the food security and livelihood of the people and caused more poverty. So, in order to overcome such condition, various educative measures, training and awareness programme on sustainable resources management are taking to make sure that the people reduce their excessive exploitation of and reliance on the natural environment. The systematic forest management system is complemented by a significant plantation and afforestation programme. The annual plantation programmes have also been implemented by a nation-wide afforestation campaign with full public participation. There are four types of plantations namely, commercial plantation, village supply plantations, Industrial plantations and Watershed plantation. In order to get more public attention in environmental conservation, nation-wide celebrations of World Environment Day has been held annually.

Regarding environmental conservation, at the first Pyidaungsu Hluttaw regular session, our President said, "We will pay serious attention to conservation of forest and wood lands. We will also take measures in various sectors to reduce air and water pollution, control dumping of industrial waste and conserve wildlife. We will lay down a new policy in which we will work for economic development in parallel with environmental conservation."

Myanmar is an agro-based country and therefore, the environmental pollution is very minimal as compared to industrialized countries. The Republic of the Union of Myanmar is committed to achieving sustainable development in the country on the one hand, and as a party to a number of international environmental conventions is also committed to implementing global sustainable objective on the other. At present environmental management activities are being undertaken in collaboration with one of the plans of rural development and poverty alleviation. For the effective implementation of national sustainable development programmes, we are facing some constraints such as financial inadequate, lack of technology and human resources capacity. Thus, the technical and financial assistance from both regional and international communities are crucial in our efforts to reduce the environmental pollution. The protection of the environment and natural resources is a cross-cutting issue. So the best and the most appropriate way to address the environmental problems are to adopt and implement the integrate approach to sustainable development. Making development more sustainable can help to address the environmental problems. International cooperation, collaboration and understanding are thus crucial to pave the way for sustainable development in Myanmar.

As Myanmar people adore the natural environment, not only the government but also individuals or organizations are to play their active part in environmental conservation task in order to hand down good condition of the natural environment to future generation.



Tin Maung Wai (Myanmar)

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1. I am Mr. Tin Maung Wai, Assistant Staff Officer of Relief and Resettlement Department under the Ministry of Social Welfare, Relief and Resettlement, Republic of the Union of Myanmar. In my Department, there are four Divisions namely Relief Division, Rehabilitation Division, Administration Division and International Relation Division. The Division I am working is International Relation Division. My Department is especially responsible for the Disaster Risk Management and the Ministry to which my Department belongs is also a focal Ministry for the Disaster Preventive Measures in Myanmar.

2. As an Assistant Staff Officer in International Relation Division, I take part in the coordination and cooperation with the UN, INGOs, NGOs for the Disaster management. I have close contact with ASEAN as well as UN Organizations for the Humanitarian endeavors. I do manage to hold the Memorandum of Understanding between my Department and Asian Disaster Preparedness Center (ADPC), United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), Malteser International, SEEDS Asia, The Lutheran World Federation, Pact Myanmar, Danish Refugee Council Myanmar (DRC), International Rescue Committee (IRC) Myanmar, Solidarites International, Myanmar and United Nations Human Settlements Programme (UN-HABITAT).

3. The Republic of the Union of Myanmar, located between latitude 9°32' N & 28°31' N and longitude 92°10' E & 101°11'E with total area of 676,578 sq. km. It's north-south length is 2,200 km while east-west breadth is 925 km. It is surrounded by China in north and north east, Lao PDR & Thailand in east and southeast, India, Bangladesh in west while Bay of Bengal & Andaman sea in west and south. Myanmar has tropical climate with three seasons, namely Rainy, Winter and Summer. The rainy season comes with the southwest monsoon, lasting from mid-May to mid-October, followed by the Winter from mid-October to mid-February while Summer is from mid-February to mid-May. My Country is exposed to multiple natural hazards including Cyclone, Earthquake, Floods and Fire. It has been periodically hit by natural disasters. Fire is the most frequent disaster in Myanmar and accounts for 71 percent of the disasters within the country. Storms and Floods account for 11 percent and 10 percent of the disasters respectively while other disasters including earthquake, landslide, etc accounts for 8 percent of the disasters.

Forest Fire in Myanmar

4. Myanmar is endowed with one of the highest forest cover in the Asia-Pacific region with actual forested area of about 344,237 square meter or 50.87% of the total land area. Different types of forest can be found in different parts of Myanmar depending on the variation of rainfall, temperature, soil and topography. In the Southern part of the country, tropical evergreen forests are abundant whereas in the Eastern, Northern and Western regions, where elevation exceeds 900 m, moist temperate forests grow. In the central part of the country, as a result of the frequent dry spell and less rainfall, dry forest dominates the region 32.



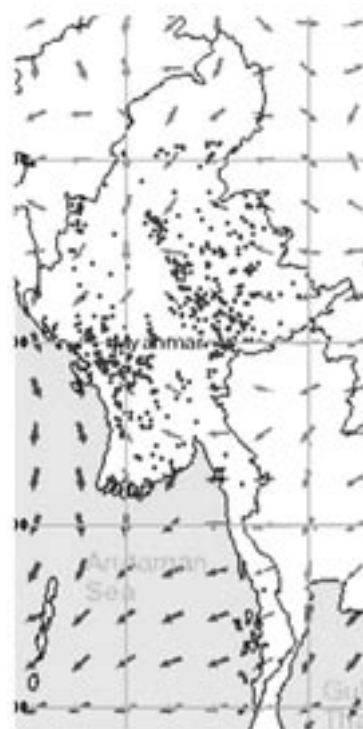
5. Forest fires and its associated recurring trans-boundary haze pollution have become the most prominent and pressing environmental problems in ASEAN. The resulting air pollution has negatively impacted the health, economy and environmental conditions of over 300 million people all over the southeast Asian region, with total loss amounting to 4.4 billion US dollars.

The underlying causes of the regional haze problems can be attributed to:

- Uncontrolled land and forest fires, mostly resulting from human activities such as the use of open burning techniques for conversion of forestland to other land uses and
- Prolong drought.

6. However, in Myanmar, forest fires, referred to as wild fire locally, are mainly surface fire that can spread over a large area but do not turn into intensified burning; therefore, they do not contribute to the regional haze problem. Nonetheless, surface fire can destroy up to 10 tons of forest fuel in one-hectare area. Consequently, every year 30 to 70 tons of top forest soil loss occurs. Though Myanmar has high forest cover, in terms of the rate of

Forest Fire Atlas of Myanmar



situation into rivers the country ranks at the 5th place globally.

7. The dominant type of forest in Myanmar is residual forest that sheds leaves during dry season. As a result, the associated forest fires, which are normally surface fire, are most frequent during the dry season, starting from around December until May, as shown at Table:

State & Division	21Mar-30Mar 2008	31 Mar-9Apr 2008	10Apr-19Apr 2008	20Apr-29Apr 2008	30 Apr-9May 2008	10May-19May 2008	20May-29May 2008	30 May-8Jun 2008
Ayeyarwady	1135	1362	4313	1816	227	0	0	0
Bago	10109	8876	11835	3205	0	0	0	0
Chin	16298	19053	16069	18135	459	0	0	0
Kachin	10805	79618	97247	75068	1137	2275	0	0
Kayah	1870	1421	1721	0	0	0	0	0
Kayin	7765	5047	7377	971	0	0	0	0
Magway	25103	22536	18542	15975	285	0	285	0
Mandalay	6428	5475	2857	714	0	0	0	0
Mon	152	76	76	0	0	0	0	0
Rakhine	3442	9342	9342	11308	0	0	246	0



8. Due to the excessive forest coverage of the country, the incidents are found in almost all states and divisions though sporadic. However, in particular, they are more common in upland regions of Regions and States such as Bago, Chin, Kayah, Kachin, Mandalay, Rakhine and Shan. Two main sources of forest fire cases in Myanmar can be categorized into natural and manmade. Yet, natural causes of lightning and friction of tightly packed trees are rarely the reason and the following man made causes are responsible for majority of the incidents:

- Shifting (slash and burn) cultivation;
- Deliberate burning of the forest for hunting purposes;

- Careless use of fire (smoking or cooking) in the forest;
- Blazing the tree trunk intentionally for collection of lacquer;
- Purposeful burning of fodder ground to make room for the growth of new grass.

9. Notwithstanding the scarce cases of major forest fire in Myanmar, the outcomes are equally devastating and far reaching regardless of the strength of a fire. Significant impacts can be summarized as follows:

- *Loss of invaluable woodland:* Forest fires destroy saplings, valuable wood producing trees such as teak, bring about infestation of insects at burnt areas and soil degradation.
- *Threat to watershed areas:* When the forests in the headwater of rivers and streams are damaged, the surface soil loss can create increased siltation in the rivers and waterways leading to more severe flooding, decreased ground water level and dried up springs.
- *Threat to wildlife:* The death of wild animals and destruction of their habitats.
- *Threat to recreational facilities and resorts located within forest reserves;*
- *Loss of fodder ground;*
- *Threat to economy:* Loss of forest produce and precious forest resources.

At times, the effect of the forest gets magnified because of the delay in reporting of a fire event, weak coordination in the initial management of fire, difficulty in access to water, poor transportation facilities, inadequate fire extinguishing materials (traditional ones), difficulty in approaching the fire area, strong wind, dry and hot weather that creates low humidity conditions, lack of preparedness and mitigation plans or poor planning.

10. The Department of Meteorology and Hydrology (DMH), in collaboration with the Forest Department and National Commission on Environmental Affairs (NCEA), is responsible for forest fire monitoring and reporting incidents, whereas fire fighting capacity is provided by Fire Services Department and Forest Department. The country's forest fire prevention procedures comply with the 1992 Forest Law and 1997 Fire Service Law. The real time data and information for monitoring are obtained from Singapore Weather Information Portal and National Environmental Agency of Singapore, that observes the southeast Asia regional haze situation, as well as from the international body such as National Oceanic and Atmospheric Association (NOAA).

11. Though not active currently, in 1998, the National Haze Committee³⁴ oversaw the development of the National Haze Action Plan. The plan captured the time, duration and major causes of forest fire incidents in Myanmar, aiming to mitigate the forest fire in the country and at the same time, contributing to the ASEAN Agreement on Trans-boundary Haze Pollution. Four key objectives of the plan are to develop policy and strategies to prevent forest fire, to strengthen collaboration among agencies, to mobilize resources for forest fire and haze and to develop monitoring centre for forest fire and haze. To further the national commitment on addressing environment issues and sustainable development, the draft National Sustainable Development Strategy (NSDS) was developed in 2007, a participatory process mooted and initiated by NCEA and UNEP. The integrated goals of NSDS were sustainable management of natural resources, sustainable economic development and sustainable social development to establish sound environment policies in the utilization of water, land, forests, mineral, marine resources and other

natural resources in order to conserve the environment and prevent its degradation.

12. At the regional level, the Regional Haze Action Plan (RHAP) was adopted by the ASEAN Ministerial Meeting on Haze (AMMH) in December 1997. The ASEAN Haze Technical Task Force (HTTF) and the ASEAN Ministerial Meeting on Haze in 1999 endorsed the idea of an ASEAN Agreement on Trans-boundary Haze Pollution, which was signed by the ASEAN Environmental Ministers on 10 June 2002 and entered into force on 25 November 2003. The implementation of the Agreement is underway.

13. Myanmar is often cited as the last frontier of global biodiversity in Asia. According to the Forest Department, recorded numbers of wildlife species in Myanmar are 1,000 species of birds, 300 species of mammals, 360 species of reptiles, and 1,200 species of butterflies. There are 30 wildlife sanctuaries and 6 national parks, constituting about 4.72% (31,938 sq. km) of the total land area of the country. The diverse flora and fauna and the exotic wild life mentioned above depends dominantly on the survival of the rich forestlands that provide sanctuary for them. In turn, food and other products as wood, rubber and medicinal produce are sought from the forest for national consumption as well as for foreign export. Moreover, the property of the forests in keeping the weather balanced and in mitigating episodes of extreme climate events, while preventing soil erosion and landslide problems are well known. Hence, the protection of pristine forest grounds and ensuring successful management of natural resources become necessity for the dual purpose of economic development of the country and the continued existence of animals and human.

14. One way of achieving this is through awareness raising and capacity building at all layers from national, sub-national to community level. Additionally, technology transfer of appropriate technology from the technologically more advanced nations, particularly GIS and remote sensing tools, can grant precise, frequent and timely data and information in monitoring and managing one's environment. With the cooperation of inter-governmental and non-government agencies including the private sectors, appropriate guidelines can be developed to realize the National Haze Action Plan and National Sustainable Development Strategies that can pave way for environmentally sound development practices in the Country.



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1. CASE STUDY

Poverty is a long-standing sustainability issue in the Philippines. Thirty-three percent (33%) percent, or 6.4 million families, are poor (NSCB, 2009). Among them, 4.5 million Filipinos are homeless. These homeless people, or squatters, are forced to live in riverbanks, shorelines, slopes, disaster-prone areas, forest lands, and slums. Consequently, squatter communities not only take a heavy toll on the environment but are exposed to disastrous natural and man-made hazards.

But in spite of the wide-spread poverty in the country, the Filipino people remain to be the country's greatest resource. Therefore, uplifting the lives of the Filipino people, most especially the poor, will not only provide sustainability and resiliency but will consequently protect the environment.

Using the Multiple-Polarity Model (MPM), this case study will analyze the dynamics and tensions, whether positive or negative, among the major forces that affect an individual, a community, or a country. Using the same model, the sustainability issue in the Philippines will be compared and contrasted with the case of the Minamata Disease in Japan. Highlighting the lessons learned from the JENESYS East Asia Future Leaders Programme: Environment and Community Revitalization Group (November 2011), this study will conclude with recommendations on how to revitalize the country and ensure sustainability.

A. The Multiple-Polarity Model (MPM)

The Multiple-Polarity Model (MPM) was a product of the multi-faceted experiences during the JENESYS Programme, as previously mentioned, which focused primarily on the continuous process of revitalization of Minamata City since the outbreak of the Minamata Disease in the 1956. The central component of the model is the individual (I). Other components, or sectors, are the government, economy, nature and the society.

MPM recognizes that an individual is an integral part of each if the four sectors. In principle, the individual cannot totally dissociate

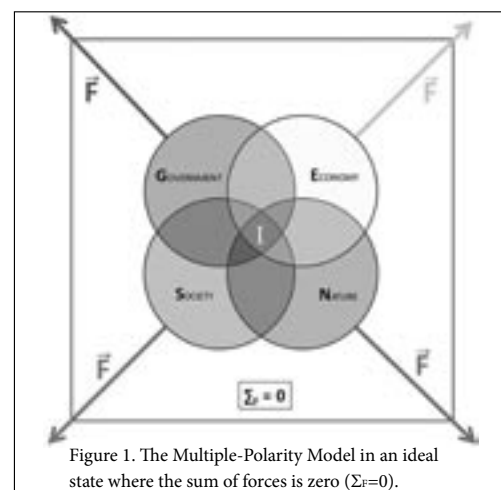


Figure 1. The Multiple-Polarity Model in an ideal state where the sum of forces is zero ($\Sigma F=0$).

him-/herself from the government, economy, nature and the society, even in times of serious conflict. Also, MPM illustrates that the four sectors are likewise interrelated and interconnected, and inseparable with the individual.

The “I” could be viewed from different perspectives. It could either be an individual person, a family, a town, or even a country. Depending from which perspective, the four sectors would then adjust. For instance, if the “I” is a family (as in the case of Minamata Disease), the Government “G” could be the municipal government; the Economy “E” could be the local business and the over-all municipal economy; the Nature “N” could be the natural resources in the town, and the Society “S” could be the general public. Should the “I” be a country, the “G” could be consortiums like ASEAN or United Nations; the “E” could include the global and regional economic arena; the “N” could include all-encompassing environment issues, such as climate change, endangered species, etc.; the “S” would be the other countries.

While the individual and the sectors are inseparable, they normally differ in values system, characterized by different priorities and biases. The values system of each sector is symbolized by a vector or an arrow, which also represent a force. As each force pulls towards a certain direction, it creates a tension with the other three opposite forces. And when opposite forces react to the tension and likewise pull to different directions, it creates a highly dynamic and constantly moving model. In order to ease the tensions, balance among the various opposite forces must be constantly sought.

As shown in Figure 1, when the forces are relatively equal, it creates an ideal state or an equilibrium where the summation of all forces is zero ($\Sigma F=0$). It means that though there is a constant presence of tensions, the forces tend to equalize. Imagine a state where the society is in full support of the government; where nature is being protected and not compromised in spite of a booming economy; where the governance strives to balance the different forces, and where the welfare of the individual is of paramount importance.

B. The MPM and the Poverty in the Philippines

The stronger forces in the Philippine society with regards to the poverty situation are the Government (G) and the Economy (E). Both are almost equal in force as the two rely heavily on each other for their respective agenda at the expense of the Society (S) and Nature (N), which worsens the plight of the majority who are poor (I) (see Figure 2).

The Philippine government for the past centuries has been marred with corruption and patronage politics. There are good laws but they are not implemented properly. Government funds are spent in projects that would benefit the politicians in the form of kick-backs, resulting to outputs that are substandard and give little impact to the poor. During elections, the politicians rely on oligarchs for financial support.

In effect, the oligarchs that dominate the economic sector continue to amass wealth that goes beyond the law as the politicians turn the blind eye. Exacting exorbitant price on government deals. Protection from tax evasion law suits. Running unsustainable mining concessions and illegal logging operations.

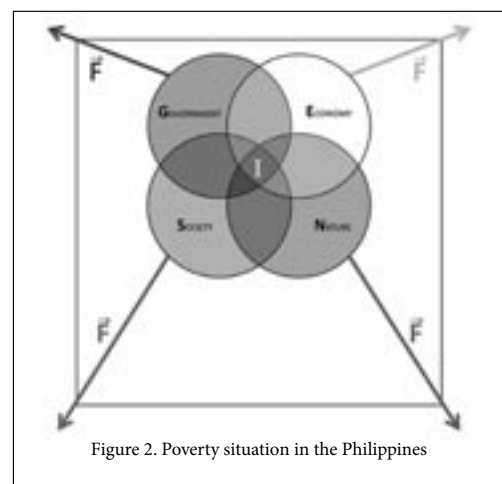


Figure 2. Poverty situation in the Philippines

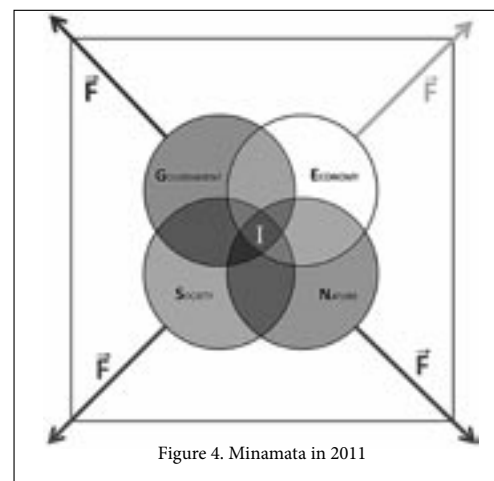
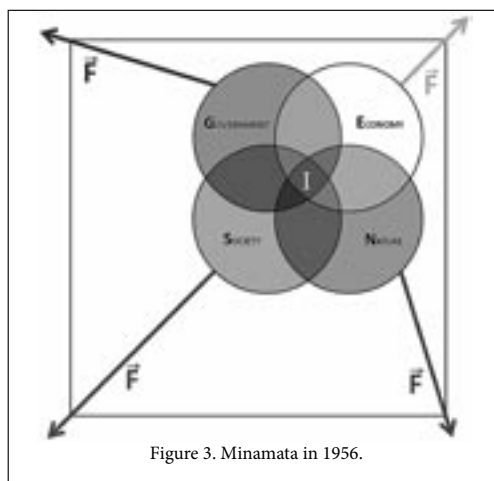
The civil society, on the other hand, has grown apathetic. The best universities in the country fail to mold patriotic students. In effect, graduates prefer to work abroad than help the motherland. The upper class and the middle class shun and discriminates the poor. Even the Christian majority, who are supposed to espouse compassion and love for the poor, have failed to make an impact.

The country has the most diverse flora and fauna. It is rich in natural resources. It is a tropical country and has only two pronounced seasons. Fertile and arable land is vast. But unfortunately, these gifts from nature are unutilized, misused, and abused. For a country with rich natural resources, it is a scandal that majority are poor.

The majority who are poor have lost their dignity as human beings, living in squalid slums in the urban centers and in danger-prone areas in countryside. Living in survival mode, violence, disease, hunger is a daily occurrence. They have lost their trust in the institutions, particularly in the government. They feel abandoned and neglected.

C. The MPM and the Minamata City

From the discovery of the Minamata Disease in 1956 and many years thereafter, the strongest force among the four sectors had been the Economy (E). Using the MPM, the entire system is skewed heavily towards the “E”, as shown in Figure 3. The Chisso Corporation, as a major economic force in Minamata City, carelessly and continuously discharged wastewater contaminated with methyl mercury compound into the sea (N), which resulted to poisoning of thousands of people. The victims and families (I) started to protest against Chisso Corporation. The municipal government (G) supported Chisso Corporation. A good number of residents (S) of the town considered the patients and protesters as threats since “more than 60% of the population depended on Chisso for their livelihood”. For decades major issues lingered, tensions grew stronger, and the situation worsened resulting to a growing number of victims. The situation also evolved not only as a national problem but a global concern, as well.



However, the different sectors eventually eased the tensions when they started to change their values system which lead to an almost equilibrium state and the revitalization of the community (Figure 3).

D. Revitalization of Minamata City

As previously mentioned, the revitalization of Minamata was primarily due to the change in the values system of

each of the sector.

For many years since the outbreak of the Minamata Disease, the municipal government had been neglecting the plight of the patients and their family members up to the point of even protecting the Chisso Corporation. But it was in 1994 that then Minamata City Mayor Masazumi Yoshii, speaking in behalf of the government and the citizens of the town, apologized to the patients and their families. This milestone paved way for the much needed healing brought by years of suffering and mending estranged relationships after decades of discrimination and conflict.

The establishment of Moyai-naoshi campaign became the concrete expression of this apology. Moyai-naoshi created a convergence point for all sectors of the society to work together towards a common goal. It effectively breaks down barriers and became a collaborative effort to move forward as one community. With the government acting as a facilitator, Moyai-naoshi encouraged the emergence of many local leaders, it restored the trust of the people to the government, and it gave the citizens pride in themselves. Having gained confidence as a people, Minamata City now showcases not only its best practices but also the bad side of its history.

While Moyai-naoshi provides the platform for convergence on the macro level, a parallel philosophy is being nurtured on the micro level, transforming the hearts and minds of individuals, enhancing community spirit particularly in rural areas and influencing the visitors, as well. This philosophy is called Jimoto-gaku, pioneered by Mr. Tetsuro Yoshimoto. It encourages individuals and communities to look for and celebrate "something that exists" and not to waste time longing for something that does not. Jimoto-gaku transforms a simple rural community into an enriching "life museum" which teaches valuable lessons not only to the visitors but to the community residents as well. It brings out vitality in the people, nature and local economy. It strikes a balance among the forces, as shown in Figure 4, which consequently improves and nurtures the dignity, spirituality and well-being of an individual.

Another major lesson that Minamata City offers is when it decided to be an "international environmental learning city." Having sought an environmental ISO14001 certification, the entire city has converted the negative energies caused by the environmental disaster into a positive force in recreating Minamata City to become an environmental city based on high standards and measurable impact.

However, at the center of the Minamata Disease are the patients, both the living and the dead, and their families. Out of the myriad issues that haunt them, this report will focus on three things: a). hatred to Chisso Corporation, b). the pain and the despair of being left behind, and c). the struggle for truth and peace.

Their hatred to Chisso Corporation (and resentment to the government) is understandable. Real change came when the patients started to forgive. As Mr. Masato Ogata, a Minamata Disease patient put it, "Chisso was I". He acknowledges that Chisso is a part of him as much as he is a part of Chisso.

The feeling of being left behind brought about by decades of neglect, ostracism, humiliation and discrimination left deep seated pain in the heart of the patients. Fortunately, there are Non-government Organizations (NGOs) and other individuals and institutions that have been reaching out and taking care of the patients. One of these is the Sosisha, the Supporting Center for Minamata Disease. From among the many things that Sosisha does for the patients, the most important is perhaps their presence and in assuring the victims that they are not being left behind.

With regards to the struggle for truth and peace, a major milestone is when the patients have become storytellers.

Mr. Masami Ogata, a Minamata Disease patient who used to conceal his predicament out of fear of public scrutiny and discrimination, realized that not facing the truth robbed him of true happiness and inner peace. Now, being a very active Minamata Disease storyteller, he finds happiness in truth. He said that he is not after for a miracle but for after the truth and peace.

2. LEARNING FROM MINAMATA CITY

A. The Government

The local governments in the Philippines need to regain the trust of the people and take the lead in ending poverty to majority of their constituents. Former Mayor Yoshii of Minamata City not only gained the trust of the patients when he publicly apologized but he also inspired the whole city to transform despair into hope. The local government officials must encourage emergence of local leaders and not be insecure by them. If the issue is on corruption, then they have to double their efforts in promoting transparency.

The Philippine government could likewise transform this tragedy into a showcase for the world to see. Former slums that are transformed into sustainable and beautiful communities can also function as "life museums." Ending massive poverty may still be an abstract concept and a lofty goal but the challenge really is on how to "turn it into a reality for all the world's people." By transforming one family at a time, one community at a time, the whole nation is rebuilt.

B. The Civil Society

While the government has a lot of shortcomings, the problem of massive poverty in the country is everybody's fault. Instead of putting all the blame to the government, the civil society must acknowledge that they are also the government. Adopting the statement of Mr. Ogata, the Filipino people must say that the government is them. The Non-Government Organizations must help and support the government, instead of doing things separately and redundantly. And because of the massiveness of the poverty, NGO's like Gawad Kalinga must strive to scale up, efficiently and effectively. Perhaps, setting standards for poverty eradication, like the ISO system, and measuring the impact of the anti-poverty programs, must be put in place.

C. The Economy

The Philippine economy must encourage the building of wealth for the bottom of the pyramid, for the majority who are poor. Social enterprises and social businesses must be done on a large scale in order for them to create impact. The self-help and sustainable practices of a Jimoto-gaku community can be a very good platform in building wealth from the ground up.

D. The Nature

"If you save the poor, you save the environment. If you save the environment, you save the poor."

In December 2011, massive floods in Northern Mindanao in the Philippines caused by Typhoon Sendong

(International Name: Washi) left many people dead and thousands homeless. The Philippines is visited by 20 typhoons each year on the average. And when super typhoons or heavy rains strike, the majority who are affected are the landless poor since they are the ones living in danger-prone areas. As one journalist put it, "where they live is how they die" (Montelibano, 2011). And where they live, because of their sheer number, is how they destroy the environment.

E. The Poor

"The problem of poverty in the Philippines is not economic but behavioral" (Tony Meloto).

Jimoto-gaku inspires an individual to look for something that exists. But for a poor individual living in a slum community, where filth and disease linger, where violence and death is a normal occurrence, where people are forced to live in subhuman conditions, it would be very difficult for him/her to look for something good that exists. For a head of a family living under a bridge whose forefathers have also been poor and landless, it would be very hard for him to hope that in his lifetime, things would be different. For these families, it would be natural for them to believe that they have been left behind.

In revitalizing a poor community, it is therefore imperative that the major focus would be on restoring the dignity and well-being of the people.

Secondly, social justice must be achieved by providing them land (security of tenure), dignified homes within a holistic community, food sufficiency and opportunities for education. Only then can social progress take place.

3. CONCLUSION

Minamata City was able to transcend itself from the physical, social, environmental and psychological disaster into an international environmental model. The people of the Minamata, especially the patients, were able to channel their energies towards rebuilding the city. They focused first on what exists in their midst and build up on them. Pushing themselves out of the box and created an entirely new standards.

The Filipino people needs to focus also on what exists in their midst. Though majority of its people are poor, the main resource of the country is still its people. Known to be hardworking and excellent when given the right environment and the enough opportunities, particularly in other countries, the poor Filipino families do possess that same potential. Building sustainable and beautiful communities for the poor through cooperation among the different stakeholders will definitely change not only the physical landscape of the country, but will also dramatically restore the dignity of the individual, provide hope to family, transform a community, influence governance, and rebuild the whole country.

By doing so, the poor would not anymore feel that they have been left behind.



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Winning Lake of Marawi, Learning from Bay of Minamata

Winning sustainability of the watershed of Marawi's Lake Lanao in Southern Philippines can gain lessons which worked in Minamata's Bay, southern part of Japan. Both city experienced water-related environmental and health issues that resulted to confusion and local economic turmoil. They can perfectly be compared and examined that one experience can shed light to the other in uplifting insights for achieving that elusive sustainable development.

Marawi and Minamata are both lands of promise having undeniable rich resources and breath-taking natural landscapes, but people in both places experienced decades of disturbances. How the people in Minamata achieved justice gives inspiration to the case of the Lanao, who continue to struggle and work to achieve justice and progressive community.

Marawi is the center of Muslim Mindanao civilization particularly in Lanao del Sur. The Lake Lanao is home to the 1,138,544 Meranaos or people of the Lake, one of the 13 Muslim groups of the Philippines where they were able to preserve their identity, Islamic faith, rich culture and natural resources.

Lake Lanao of Marawi City

Lake Lanao, is of much value to the Maranaos not only as a source of potable water, fishes, and livelihood, but it is also part of Maranaos' daily rituals of ablution which takes place before they perform their daily 5-times a day Islamic prayers. Marawi City is host to Lake Lanao which is the second largest and second deepest lake in the Philippines. Further, Lake Lanao is one of the 15 ancient lakes in the world, and one of the only 2 ancient lakes existing in an island?one of it is the Biwa Lake of Japan. Perfectly sitting at the heart of the island of Mindanao, Lake Lanao depict veneration that exceeds its invaluable contribution to the Philippine economy being the major source of electricity in the island of Mindanao.

In 1953, the national government took notice of the watershed potential of Lake Lanao to boost economic growth, thus installed Hydro-electric plant in the Majestic Maria Cristina falls along Agus River, the only outlet of the Lake, which is run and managed by the National Power Corporation (NAPOCOR).

This was followed by 5 more hydroelectric power plants (HEPP) which constitute and support 70 percent of the energy requirement of Mindandao's households and businesses. Up until 1991, the residents started to notice the alarming and significant ecological imbalance phenomenon in their preserved nature such as: the loss of 17 native fish cyprinids; rainwater patter disturbance; low quality and quantity of farm harvest; unexplained proliferation of pests, diseases; and Lake's water level depletion. Highly concerned on the environmental impacts to the host communities, groups and leaders united and stood against the operation of the hydro-electric power plants particularly Agus 1 which diverts natural Lake's pondage as its reservoir.

The struggle against such injustice spanned for 3 decades now. The host province, ironically is the one that suffers from worse, unjust supply of electricity. Further, there's ongoing failure by NAPOCOR to faithfully pay national wealth tax as claimed by both the local government units (LGUs) and several environmentalists. On the other hand, NAPOCOR points the blame and says that the instability of electricity supply in Marawi City, and largely in areas surrounding Lanao del Sur, is due to the failure of LGUs to pay bills which already accumulated to billions of pesos now. Responding to such blame, LGUs in Lanao del Sur actually complain against the Corporation since it had been charging high electricity bills which caused ballooning of the debt.

Moreover, Meranao, being highly dependent to the lake, claimed that the operation of the hydro-plants depletes water level in the lake which they consider, consequently in effect, an attack against their religion and culture. Such depletion affected their usual ablution at the shore, it caused difficulty to dock boats in the wharfs, and it caused the fear on the disappearance of Lake Lanao. Additionally, as environmental destruction worsens, it has the danger of extending damage to the other watersheds of the Province. An example of such is the recent onslaught of Sendong typhoon on 17 December that claimed more than a thousand of lives in the neighboring cities of Cagayan de Oro and Iligan.

Bay of Minamata City

On the other hand, Minamata City of Kumamoto Prefecture experienced a great struggle about a decade after their defeat in the World War II from the USA. The central government of Japan focused on the recovery of the country's economy. However, this national policy had a price, that of environmental pollution that caused disease and eventually death among its residents, which is an attack against human right to life. Moreover, victims of the disease felt isolated by the society as they were disowned by their own fellowmen. They were discriminated by the rest of the country. People from Minamata were having difficulty of getting married from outside for afraid of being infected.

In 1952, the symptoms of Minamata disease were first noticed to cats' body imbalance and hard to walk normally. Four years after, people were getting alarmed by the spread of the disease even to the residents. A doctor who happened to be working in a hospital owned by Chisso Company first diagnosed the disease and called the attention of the company that the disease was caused by their dumping of used mercury. Chisso Company, a protégé of the Japan's central government, is a chemical factory manufacturing different kinds of chemicals. Putting profits ahead of safety, the company did not uphold precautionary measures in releasing their wastewater products which contained mercury. Wastewaters were irresponsibly dumped towards the Minamata Bay leading to the contamination of living organisms including fishes that residents eat.

After 12 years of Chisso's silence, the company and the government finally admitted the cause of the Minamata disease. Many Japanese civilians joined rallies from Minamata up to Tokyo where the central government and the central office of Chisso were based. Demonstrations by the public, which gained awareness of the people on the issue, pressured the company to negotiate and pay compensation for the victims.

In 2004, a 5-decade predicament was surmounted after then Mayor Yoshii delivered an apology speech before his constituents, on behalf of the central government. Along with the apology, he admitted the crime that was committed by the government. This affirmative action helped the entire city to work together to catch up from what they missed for the past 50 years.

Learning Lessons on Sustainable Development

Analysing the two cases, concerned parties in Mindanao can learn from the experience of Minamata by addressing four major concerns - Well-being, Income or economy, Nature and Society or **WINS**. To simplify the interrelation of the four components, the pyramid below is composed of four smaller triangles which represent each of the WINS, the elements for sustainable environment. The figure illustrates the interdependence of the elements in forming that elusive sustainable development. Geometrically, pyramid is adopted because of its proven stability since the ancient time up to the contemporary world, thus depicts a perfect portrayal of winning sustainable development.



First is promoting **WELLBEING** through social healing.

Despite this peoples accusation, NAPOCOR did not make any public statement to explain the issue of their maltreatment of the watershed by converting it to Hydro-Plant reservoir. Because of the prolonged agony from its environmental impacts, the anger against the Corporation translated into bombing of electricity towers by some members of the host community. Such electricity towers transmit energy to the rest of Mindanao Island. To address this social issue, I believe it is appropriate and necessary for the Corporation to pronounce an apology message before the host, aside from undertaking steps to address the problems in running and managing the HEPPs and its generated income. It's not an easy task but this has to be dared once and for all if this is one of the solutions towards healthy working relation for the hydro-power existence.

Making a public apology is a bold manifestation of taking concrete steps for building foundations for unity and harmony among stakeholders. In any case, we cannot genuinely move forward without healing the pains carried from the past. This is the reason why we cannot overlook and just forget the past and historical injustices.

Minamata is a clear example. Upon circulation of the apology message to the community in 2004, people altogether moved forward and a lot of social mechanisms were put in place to better the society. Moyai Naushi or community restoration was whole-heartedly adopted by the residents. The concept of Moyai Naushi is holding different form of avenues for conversations for social change and unity. Formulated ideas were collected, adopted and being implemented by the city government with the active participation of the community. Another brilliant idea that came out was the Jimotoga-ku in the upland village of Okawa. The concept of Jimotoga-ku is appreciating and maximizing available resources without compromising environment.

Second is **INCOME** or economy. In 2006 Asian Development Bank report, poverty incidence in Lanao del Sur ranked 6 among the 80 provinces. Farmers claimed that the lost of native cyprinids, reduce of farm quantity of farm harvest is due to excessive water utilization for the Hydro-plants. Because of this frustration and societal stress, some especially those who have less opportunities and educational attainments forcibly choose to engage in illegal activities for survival of their families. To address this issue, the corporation, with a concrete support from the national government, should provide livelihood for the households and support the improvement of education through providing scholarship for the students. The government should also empower the community through technology transfer. The NAPOCOR and the LGU should hold a dialogue to come up with the exemption from grid charge and other charges.

This support can maximize the agriculture and fishery production, simple yet competitive locally-based food processing and other technologies that will contribute to national and local economic progress and address economic recovery.

The experience has been enjoyed by Minamata and Japan when the government supported the environmental-

friendly industries such as transforming hotel into internationally standard ISO 14001 certified, locally-based soap factory, organic fertilizer production, innovative farming and practical water system for both household and rice paddies.

Third is **NATURE**. Albeit the creation of Watershed Management Department (WMD) under the larger umbrella of the Corporations' structure, decision-making regarding watershed rehabilitation is solely being decided by the corporation that led to the improper site selection of reforestation projects. For one, it may be influence by local politics, reforestation projects are not being implemented in the watershed major tributaries which is supposed to be prioritized. For two, limited appropriation for the said endeavour is not enough to rehabilitate the damaged watershed environs.

It is then proper for the corporation to step up for the natural restoration through opening involvement of multi-stakeholders to the decision-making; double target numbers of hectares focus the implementation at the major river tributaries; supporting technology for the propagation of lost cyprinids; and augmenting appropriation for the environmental programs.

Looking at the case of Minamata, it is exemplary that the local authority, Mayor Yoshii, executed the revitalization of his city by reforesting all idle lands in the upland, and upgraded solid waste management through 23 kinds of waste segregation, then massive clean-up drive across the Minamata bay. This led to the city's regaining ownership of the bay resources by harvesting marine resources therein.

Finally, **SOCIETY reform** by addressing the claimed religious, cultural and traditional practices disturbances. Lake Lanao has a great contribution to religious practices, as previously mentioned, cultural and traditional practices as the lake serves as their source of livelihood, navigation and a site for festivity. In order to address these issues, the Corporation, with the support of the national government, must work in pouring in of support for the social revitalization with the full participation of the community. The like of Moyai Naushi and Jimotoga-ku can be a basis for the said revitalization.

Minamata City under Kumamoto Prefecture, the national government through the prefecture, city government and the Chisso Company work together to the societal reformation by providing full support, economically and technically, the activation of regaining their identity and pride by adopting MoyaiNaushi and Jimotoga-ku.

Today, Minamata disease can be considered an oxymoron because Minamata now represents unity, tranquillity, beauty and healthy economy. That's because of the Japanese government's political will to correct mistakes in the past and revitalize their place.

In conclusion, all stakeholders must sit down sincerely and come up with a comprehensive solution to the multifaceted yet intertwined issues and problems in exploiting the environment and directing its benefits.

Examining the recommendations here is a win-win solution.

The national government especially the legislative body should consider undertaking passage and enactment of Ranao Development Authority, a body for the administration, regulation and rehabilitation of Lake Lanao's precious watersheds with the goal of promoting its sustainable development. Given the support of the national government to the regional government, Lake Lanao watershed in Marawi can win the WINS?the elements for sustainable development? perfectly the same with how Minamata did.



Ang Suet Geok Grace (Singapore)

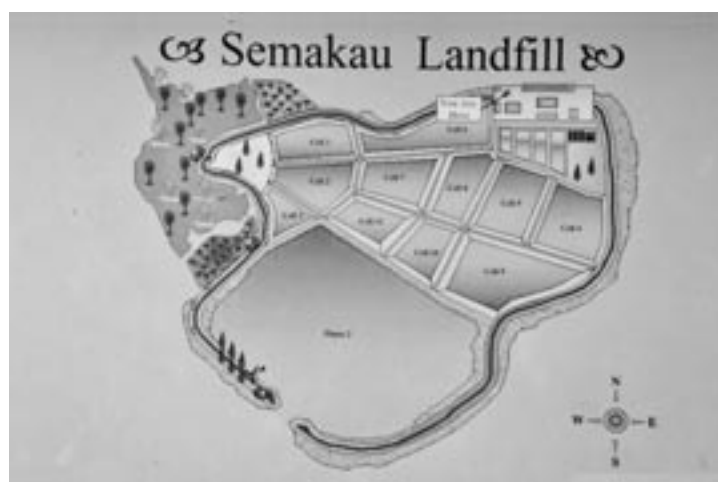
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DEVELOPMENT OF FUTURISTIC NATION

Introduction

This report will firstly introduce the brief information on Singapore's various stages of developments and growth since it gained its independence. Showing four case scenarios of success and failure situations when NGOs and volunteers have tried reaching out to educate the members of public through campaigns and outreach programmes when there are any unsustainable issues before the actual plan is carried out by the government and corporation.

Before Singapore's independence in 1965, our land area was 581.5 km². However with the land reclamation since then, it stood at 712.4 km² in 2010. Singapore currently has about 63 islands Pulau Tekong, Pulau Ubin, Jurong and Sentosa are the 4 major and largest islands. Pulau Tekong is used for military training, whereas Pulau Ubin and Sentosa are open to public for recreation activities and Jurong island is being used for industrial purposes that mainly supports on petrol-chemical industries. Singapore's 5th largest island, Pulau Semakau with 350 hectares of land on the island, it is a landfill site. It is the only island where non-incinerable waste and incinerated ash deposited is expected to be filled up by year 2030 - 2040.



Map of Pulau Semakau

The public housing flats (HDB) were built in the early 1960s. To date, about 84% of Singaporeans live in HDB flats.

The flats are built on the mainland of Singapore and to also cater for young Singaporean couples as first timers to apply for the flat. However, there are no assurance that first-timers will get their application balloted and some applicants even had to apply for few times in order to get their own apartment.

Singapore current population stand at 5.18 million and 63% are Singapore citizens. Singapore is one of the fastest growing economies in the world. Singapore has become very robust and hence urban development has always been progressing.

To ease the traffic condition in the city, the old National Library Building was demolished in 2004 to make way for the Fort Canning road Tunnel which stretch about 350 metres length. The old National Library Building was built in 1957 - 1960. It was a historical building and an iconic landmark (Red-brick building) for many Singaporeans. There were outcries against the demolishment of the building as it was also a popular destination for young people my generation from the 1960s to the 1980s.



“Singapore Streets” exhibition at the new National Library building

Today, the new National Library stands at 16-storey-high “green” building built with green features to fulfill it’s environmentally preferred requirements. It holds various exhibitions and public talks at the premise all-year-round. Apart from the library, the National stadium opened in 1973, it was demolished in 2010 to make way for a 35.6 hectare, world-class Singapore Sports Hub to be completed in 2014. The demolished National Stadium was a place hosting many spectacular functions for example sports events, National Day Parades and concerts by some well-known superstars. It is also fated that the National Theatre had to be demolished due to structural reasons.

Today, the new National Library stands at 16-storey-high “green” building built with green features to fulfill it’s environmentally preferred requirements. It holds various exhibitions and public talks at the premise all-year-round. Apart from the library, the National stadium opened in 1973, it was demolished in 2010 to make way for a 35.6 hectare, world-class Singapore Sports Hub to be

To date, there are 64 National Monuments safeguarded under the authority of Preservation of Monuments Board (PBM). It is guided by the Preservation of Monuments Act to provide “for the preservation and protection of National Monuments”. It also has a volunteer training programme to train volunteers to conduct tours at these historical landmarks.

In the latest urban development plan at Bukit Brown, the largest chinese cemetery in Singapore has an area of about 233 hectares with 100,000 graves located in the central part of Singapore is planned for development of a highway to ease the existing traffic congestion nearby. The alternative plan is to build a skyway over part of Bukit Brown (about a quarter of the area). If the government authorities are agreeable to the alternative plan, then work should be done rapidly and carefully to reduce the destruction impact to wildlife. Bukit Brown plays an important role

for wildlife as a place for foraging food if it is left undisturbed. This greenery woodland contains rich biodiversity for many flora and fauna. Apart from the biodiversity, this cemetery is also a heritage site for many ancestors who helped to lay the foundations of Singapore's success today. But there are also many unidentified graves which even the decedents do not know their ancestors were buried here. The Nature Society Singapore have been gathering surveys and monitoring the area for more than 20 years since late 1980s. They found out that there are 90 species of birds (updated in Dec 2011) and 13 species are listed as nationally threatened in the Singapore Red Data Book (2008). There could be a chance for the NGO and the members of public to propose an alternative plan and a comprehensive

Volunteers at Bukit Brown

Environmental Impact Assessment (EIA) to the government.



Scenario 1 - Success

Pulau Ubin, a granite island located in the eastern part of Singapore, draws many nature lovers including tourist on weekends and public holidays. It is considered the last “kampung” (village in Malay) with many of its natural surroundings. It is a popular spot for cyclist, nature walks and the main attraction is the eastern coast of Pulau Ubin, a marine wetland area called Tanjung Chek Jawa. It was designated to be a reclamation site by the government, however, just before the reclamation works started, Chek Jawa received numerous petitions from Singaporeans who flocked down to observe and appreciate the natural wonders. This sudden energy caught the government to react positively to the conservation cause with the support of case study report put together by some marine biologists that changed the government's decision to defer the reclamation after 2012. To date, Tanjung Chek Jawa is a well-known marine wetland site visited by many school groups, researchers, individuals as well as tourists. In mid 2007, Chek Jawa was officially launched with new amenities include boardwalk and the 20-meter viewing tower. The boardwalk was built to prevent human impact when walking into the intertidal area against stepping on the marine animals.

Top view from the 20-meter tower at Chek Jawa



Scenario 2 - Success

The Green Corridor known as the Malayan railway was another success proposed to the government to preserve

this green patch of 26 km railway track, initiated by the Nature Society Singapore. Operated by the Keretapi Tanah Melayu Berhad, Malaysia (KTMB), since 3rd May 1932 at Tanjong Pagar Railway station. This 23km railway track stretches from the North to the Southern tip of Singapore (Tanjong Pagar). It was announced by the media in May 2011 that the Tanjong Pagar Railway station will be relocated to Woodlands Train checkpoint. The KTMB ceased its operations Tanjong Pagar and moved to Woodlands Train checkpoint on 1st July 2011. Now, Tanjong Pagar Railway station is listed as one of the national monument buildings. The Nature Society Singapore had therefore proposed to the Singapore government to preserve the railway track for nature and leisure activities. Thousands of Singaporeans and people who had taken the ride on the train flocked to the railway stations and tracks to capture photos before it closes to the public.

Scenario 3 - Success & failure

Lastly, in 2006 the media announced that there were plans to bring wild caught whale sharks into Singapore by the Resorts World Sentosa (RWS), Marine Life Park at Sentosa island for attraction and entertainment. RWS is a casino resort which offers attractions such as hotels, conventions centres and meetings facilities. It was opened in 14th February 2010. It was planned to feature it in their world's largest oceanarium, however many local animal protection groups were against the idea to house the Whale sharks because there are evidence showed that they are not able to survive long in captivity even with proper facilities. The Whale shark (*Rhincodon typus*) is listed as vulnerable category (high risk of facing extinction in the wild) in International Union for Conservation of Nature (IUCN) Red List. It was spearheaded by a local independent group called The Green Volunteers (www.thegreenvolunteers.blogspot.com) together with four local NGOs namely Animal Concerns Research and Education Society (ACRES), LoveSharks, Society for the Prevention of Cruelty to Animals, Singapore (SPCA), Cicada Tree Eco-place and two international NGOs, Sea Shepherd Conservation Society (SSCS) and People for the Ethical Treatment of Animals (PETA) launched an online campaign about importing whale sharks to Singapore. Publicity materials such as postcards, posters, banners and even t-shirts were printed and distributed to raise awareness at public events through exhibitions, forums and educational talks over three months. Postcards and emails were sent to the Minister of National Development and RWS to stop the import of whale sharks. Shortly after an animal symposium in May 2009, a positive response from the RWS was announced to do away with the plan to import the Whale sharks to Singapore. However, RWS is going ahead to bring 27 wild-caught Indo-Pacific bottlenose dolphins from Solomon islands despite the 1 year long island-wide and international campaigns by ACRES. Of the 27 dolphins, 2 had already died of bacteria infections by soil contamination during rainy seasons at Langkawi, Malaysia. RWS is finalising the opening date for the attraction housing the 25 dolphins in January 2012.



Postcard designed by volunteers from The Green Volunteers

Suggestions

Singapore has come a long way since the days when urban redevelopment took precedence over preserving our historical buildings and natural habitat. However, over the last decade it has been able to garner more clout in influencing the government development plans by a larger extent. The government could consider looking into converting some golf courses into residential houses as they not only take up large area of land space but to maintain the turf, it requires large amount of water and chemicals are used to keep the grass free of pest and weeds. Furthermore, we have more than 20 golf courses in such a small country which only cater to minority of the population. In order for such groups to influence the authorities, proper documentation by relevant scientists and surveys done by NGOs and individuals must be proven to ensure that the suggestion is viable. Also, strong public awareness must be raised on these issues and volunteers of these NGOs play a crucial part when disseminating the information to the public. Likewise, such rich biodiversity should be preserved for our future generation. Finally, to suggest and come up with alternative ways to improve the situation without destroying the habitat and at the same time carry out the development plans will prove a more viable and win-win solution.

ACKNOWLEDGEMENT:

I would like to thank Dr. Ho Hua Chew of Nature Society Singapore (Conservation Committee Chairman) for his views on the development at Bukit Brown.

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Francesch-Huidobro - Governance, politics and the environment 2008



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Singapore, a small island city of about 714.3 square kilometres, being strategically located away from natural disasters, has been facing with several issues concerning flooding recently. These flooding incidents had been occurring with increased frequencies over the period from mid-2010 to early 2012, especially during the monsoonal seasons. Flood levels reported were between 25 and 70 cm. In one of the recent cases, 152.8mm of rainfall fell at Orchard Road within a span of 3 hours, Singapore's shopping belt, on 23rd December 2011, just 2 days before Christmas. This is more than half of the average rainfall for December, usually the wettest month of the year for Singapore. Another recent incident had occurred on 21st January 2012, just 2 days before the Lunar New Year. These occurrences around the festive season have forced some of the shop owners and business operators to close due to damages to the shop and merchandise. As floods are also occurring around places of tourist attractions such as Orchard Road and Little India, this affects Singapore's tourism as well.

Besides climate change and global warming, the La Nina effect also contributed to downpours of greater intensities during the monsoonal seasons in 2010 and 2011 (Southwest Monsoon - June to September, Northeast Monsoon - December to March). In fact, strong La Nina effects were occurring during the times when intense floods were reported in 2010 and 2011. Hence, this accentuated the usual floods that are experienced in Singapore's low-lying areas.

In addition to business operations affected, other concerns that arose include safety of the people and continuous running of our transport and power system during flooding incidents. Some of the recent incidents had seen train stations getting flooded (e.g. the newly opened Bayfront MRT station) and power outages in shopping centres (e.g. Raffles City Shopping Centre). In another flooding incident in June 2010, a teenager had died after falling into a flooded drain and was swept away by flood waters. Such problems will continue to occur and worsen if they are not nipped in the bud.

Social media platforms such as Facebook, Twitter and STOMP, became useful in providing live updates of the current situation at the various affected areas as Singaporeans uploaded and shared the video clips and photos which they had taken. These effective communication platforms will also be what the Public Utilities Board (PUB)

is using to provide live updates to the people.

To tackle the problem with the floods, business owners and building managements had tried to install their own preventive measures, to no avail as floods worsened in intensity. In June 2011, the Orchard Road Business Association, together with management from affected shopping malls and the Singapore Tourism Board met up with PUB to discuss flooding woes and possible preventive actions that can be taken. The business operators also expressed their disappointment in the authorities (PUB), as they felt that more could have been done to alleviate flooding woes. They are looking into long term solutions that they can work on with the government. In fact, one of the proposals brought up was to allocate a plot of land in the precinct to be used for green space, underneath which contains a tank to store excess rainwater during torrential downpours.

Besides that, PUB will also look into the suggestions on putting water retention ponds in the basements of buildings. Currently, PUB is lending its expertise to 6 of the mall and building owners to build crests, which help to prevent flood waters from entering the basement carparks.

On the flooding issue, Dr Vivian Balakrishnan, Minister for the Environment and Water Resources, said that the ministry will be looking into making the necessary changes in the planning and design of the drainage systems. He also highlighted the need to ensure that Singapore's roads remain passable even during heavy rainfall, and for buildings to be better prepared to cope with the flood occurrences. As for preventing casualties from falling into swollen drains, more barricades will be installed along large drains and canals.

Right now, PUB will be investing S\$ 750 million to improve Singapore's drainage system, one of which includes the Stamford canal, which serves the Orchard area. Furthermore, PUB is also working with the National Environment Agency (NEA) to improve on the flood detection system. Smartphone users may also subscribe to an SMS-notification service that informs the user about the flood situation near their homes or workplaces. The authorities have been working to make the service real-time by installing more CCTVs and flood detectors at the canals and flood-prone

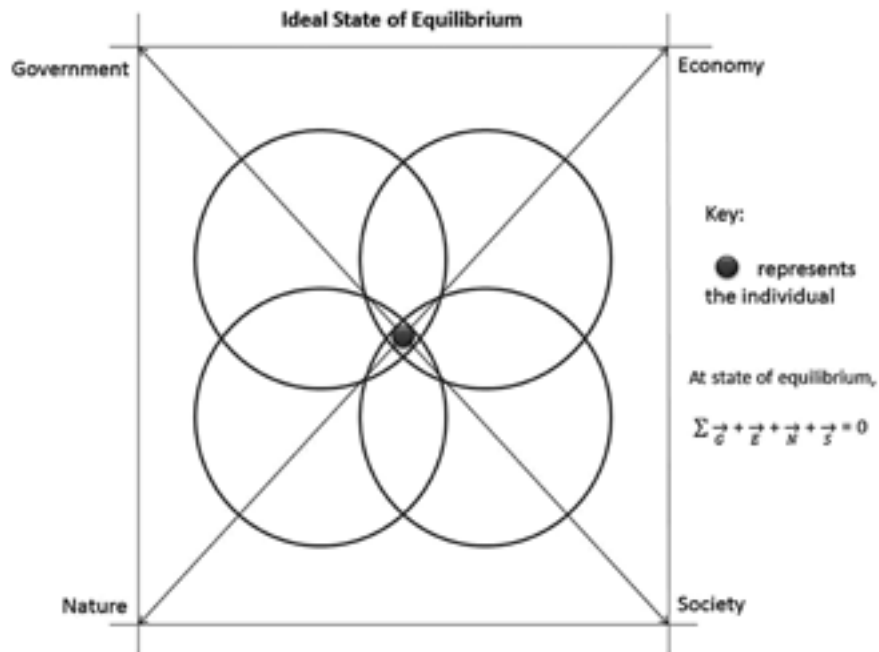


Figure 1: Ideal State of Equilibrium

Figure 1 above shows the ideal state of equilibrium in a community (or city), and the forces governing the equilibrium for each individual. Applying the above situation to this diagram, we have the result in Figure 2 (below), where individuals are in a state of disequilibrium as efforts from the government, society and economy sectors were unable to offset the effects caused by nature.

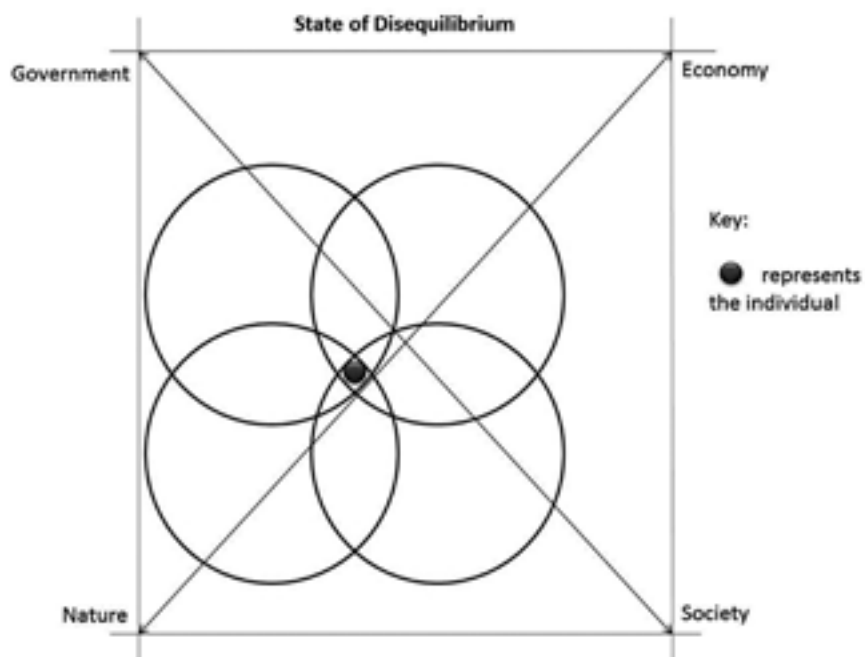


Figure 2: State of Disequilibrium (in the context of Singapore's floods)

Indeed, Singapore has been able to resolve the flooding incidents to date, with floods subsiding usually within 3 to 5 hours of occurrence, but this should not be taken for granted. Already, shopping malls have not been able to cope with the worsening intensities of the flash floods. While short term preventive measures, such as installation of barricades have been in place by the building management and shop owners, these are not sustainable as flood levels continue to rise with each occurrence.

PUB, the national water agency, should work with the community, commercial and industry leaders to work out a sound contingency plan to cater to extreme cases. This contingency plan should be made known to the relevant sectors in the community, businesses and industry so that awareness can be raised and people are educated about what to do in such situations. With better preparedness for emergencies, people will not panic and have the proper knowledge on how to deal with such situations.

With a population density 7,257 persons per square kilometre, Singapore has to develop both upwards and downwards rapidly to ensure that its infrastructure is able to cater optimally to the needs of our expanding population (currently at 5.18 million). Already, the Ministry of National Development has plans to develop the underground space - termed as a 'strategic resource' in land scarce Singapore. This works out to a complex underground 'city' of power grids, utility pipes, fibre networks, pedestrian linkways and train tunnels. This translates to lesser and lesser underground water aquifer space for Singapore to store excess rainwater in the times of heavy torrential monsoons, which can be intensified further by the La Nina effect.

To ensure sustainable development and prevent Singapore's flooding issues from worsening, the government can consider making use of 'nature' to help ease the state of disequilibrium. Trees and green spaces help to reduce the impact of torrential downpours by absorbing excess water and channelling them into the underground water aquifers for storage. Like the proposal presented by the Orchard Road Business Association, the government should consider incorporating more green spaces as they build up Singapore into a sustainable city.



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1. Case Study : Maemo Coal Power plant

Thai government build Maemo Coal Power plant in 1960 after discovered lignite coal and build coal mine for sending coal to the others power plant .

At that time Maemo power plant situated in Lumpang Province (in the north region) produced electricity 12.5 Mw for the north provinces.

In 1969 Electricity authority of Thailand (EGAT) add 2 electric turbines for raise electric produce ability to 75Mw and extended mine area. After that in late 1980s this power plant add more electric turbines (to 13 turbines) that raise ability to 2,400 Mw.

Around the power plant area have 17 villages in 135 Sq.km. the mountain keep this area isolated from the other area in province. The special physics of this area created special weather.

In the winter season High Pressure air and low temperature from the north will keep the smoke and pollution in this area like atmosphere in the pot that covered and keep by the lid.

The process of this power plant (burned lignite coal) released Sulfur dioxide (SO₂) Gas. In winter season 1992 acid rain and SO₂ gas affected many peoples in 17 villages. They have many symptoms ex. Cough , headaches , unconscious and died. at that time Pollution Control Division of Thailand (PCD) found SO₂ gas 2,620 microgram/sq.m/hour (In Thailand standard is 1,300 microgram/sq.m/hour and reduce to 780 microgram/sq.m/hour in 2001).

More over acid rain was broke agriculture zone in this area.

This is the big report on mainstream media . EGAT said the cause is bad weather and refuse the reason 'build power plant in wrong area'. EGAT used 7,000 billion Bath attached 13 SO₂ tap at the plant and lunch compensation project for sick peoples in budget 3.7 millions bath. Sick people can receive the treatment in local hospital without pay. But not everybody (sick peoples) can access this solution because they should have a clear symptoms from SO₂.

The same incident happen again in 1998. Old solution were used. EGAT paid compensation in budget 31 million bath and delared the cause of incident came from bad weather (Again). The new part of compensation in this incident is the project to move 17 villages to another (save) area.

Absolutely villagers protest many times and some group said. they don't want to move because this is the birthplace. Now this incident in the province court. In early year 2011 villagers have victory in primary court. The court ordered EGAT paid compensation to sick peoples and peoples who died and sick between lawsuit processes. Moreover EGAT will stop the process for extent coal mine and enforced ability of power plant. but EGAT decision to fight in secondary court.

Some part of This case like the situation in minamata. Example The polluter came from the outside community. The development way guided by the central power in Bangkok (like Tokyo in minamata case). The develop project continue under the campaign "for Nation". This word ordered the villagers received everything no matter how good or bad.

The development way policy that the central government choose is very important. Thailand ruled by democratic system (constitutional monarchy) since 1932. But this system not healthy. At the time that Maemo power plant build. peoples in the country area not know about 'community rights' to criticize or raise their opinion for refuse the project that affected their life.

But this case like minamata in the part of fighting against EGAT&Government. Many villagers learn from the incident and they fight although many of them were sick until now. Some of them received the compensation and move to others area and lose the original way of life.

Until now the government leave this problem to EGAT and no word 'sorry' from them. Moreover they not learn about the failure in the past like japan. EGAT still advertise the power plant is not release pollution on TV and said like everything OK.

After Maemo incident. The case like this still happen many times in another area.

2. Suggestion / Implications

I'm hope thai peoples in every community will learn about this case. The only good thing from Maemo coal power plant incident is this case is the one milestone of 'bad development' that though from the central power without hearing the community voices.

In the case like minamata and Maemo - - Civil Society movement , the citizens that know about their rights and Good media is very important since the beginning.

When the government wants to build something in the name of "Development for nation" those elements should check and balances project and criticize.

In Thailand the difference way for produce electricity should raise to the Parliament and the electricity customers (or represent) should have right to set the energy policy with EGAT and government. Because we have another way to produce electricity without attack peoples life in country area and release the pollution that will accelerated the Global Warming.

Renewable and clean energy ex. Solar power, Wind power and launch Demand side management (DSM) policy for reduce electricity demand instead of build the new power plant.



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1. CASE STUDY: Krabi Province

“*Liveable city with lovely people*” is the slogan of *Krabi province*, this slogan briefly explains the charm of the “Emerald of the Andaman Sea” which attracts tourists from around the world to discover more than 150 islands, nature and historic destinations which she has to offer. (i.e. tropical islands, splendid beaches, wonderful underwater world, forest waterfalls, beautiful streams, land of fossil shell, high mountains, caves attracting and so on) *Krabi province* located on the Andaman Sea coast of south-west Thailand, approximately 814 kilometers from Bangkok, total area is around 4,709 square kilometers bounded. Due to the influence of Northeast Monsoon, there are only two seasons in province: from January to April is hot season, and from May to December is rainy season. Krabi province is one of the oldest settlements in Thailand, from archeological evidences indicate that Krabi has been inhabited continuously since prehistoric time. Currently, Krabi's population is 432,704 people (male:female=1:1), with 146,597 households. Buddhism is the faith of 58.5 percent of the population, 40.5 percent are Muslims and 1 percent for other religions. Krabi's administration is divided into eight districts; the provincial administration also covers more than 150 islands in the Andaman Sea. Physical geography of Krabi is mountain which is broken by highlands and plains on the mainland. Natural forest cover is primarily mangrove forests and tropical rainforests. Short rivers/canals are located surrounding the province, which several originating from the province's highest mountain range, Khao Phanom Bencha. Loam and sandy clay soil conditions of Krabi's terrain are suitable for a variety of agricultural products, including rubber trees, palms, cashew nuts, mangos, coconuts, and coffee, which is the main income of province.¹

However, with lifestyle of the community with a unique local and its historical and natural attractions Krabi has a high potential to earn a substantial income from its tourism industry. These factors make Krabi area get rapidly development, in particular the development of tourism industry, which has adversely affected the environmental quality and communities surrounding both physically and socially, such as discharging wastewater from hotel and restaurant, invasion of public land especially the coastal tourist areas and so on.



¹ Krabi provincial administrative. (2010). Krabi Province Summary Report 2010, Krabi.

Problem Identifies: Tourism in Krabi

<p>Nature:-Unplanned & uncontrolled rapid hotel and tourism development has resulted in serious environment degradation</p> <ul style="list-style-type: none"> -<i>Air pollution/Noise:</i> dust/fumes and traffic noise -<i>Sewage/waste/garbage</i> from hotel, bungalow, restaurant, shop, and so on → Deterioration & dirty & stench -<i>Water & Power/electric & Resource consumption:</i> laundry, cleaning, air-condition, and facilities in hotel consumes a lot of water & electric power -<i>Coral & fish damage from underwater diving & snorkeling activity</i> -<i>Disturbed ecosystem & Lost of natural balance:</i> road built too close to the seashore/ roads cut through mangrove forests, dumped and polluted waterways/sea/ seashore, discolored beaches and so on 	<p style="text-align: center;">N</p> <p>Economic: Minimal economic incentive to reduce consumption & to conserve environment in tourism</p> <ul style="list-style-type: none"> -<i>Unable control inappropriate land use</i> -<i>Illegal land ownership/Encroachment on public land:</i> rivers/canals/beaches/mangrove forests/national parks -<i>Congestion of building:</i> street peddlers, souvenir stalls, rows of shop houses → disorderly of eyesores -<i>Large cost from energy, water & resources consumption</i> -<i>Loss of attractive scenery</i> from the discharge of none wastewater treatment & throw away waste without separation
<p style="text-align: center;">W</p> <p>Well-being: Unhealthy & unsafe</p> <ul style="list-style-type: none"> -<i>Injurious to visitors & communities</i> from traffic accidents, garbage at beach & under water (traffic accidents is highest rate of province's mortality) -<i>Health & Safety distress:</i> for local people, guests, and employee in tourism industry, i.e. indoor air quality (i.e. airborne diseases, chemical vapors, dust) relevant for occupational health & safety of hotel employees. 	<p style="text-align: center;">E</p> <p>Social: Unawareness to eco/green tourism</p> <ul style="list-style-type: none"> -<i>Lacked of knowledge and understanding</i> about tourist destination conservation of people both private & public -<i>Weakness and limitations of coordination</i> between concerned agencies: Tourism Authority of Thailand, Royal Forestry Department, Local Administration and so on -<i>Less of local people participation</i> about how to manage their community & which development ways that they want -<i>Loss of local identity & ways of life</i> -<i>Conflict between local people & business</i> <p style="text-align: center;">S</p>

2. SUGGESTIONGS / IMPLICATIONS

The tourism sustainable development in Krabi is possible by collaborates among stakeholders. To encourage and drive sustainable development in tourism, the governmental policies and plans (both local and national level) support with a clear direction is very essential. Key of those possible successes is participation of local people: they have the right to set the future for themselves. Moreover, entrepreneur is importance sector, by promoting the concept of green/eco-tourism as a cost-saving to achieve the business with minimum impact to the social and

environment. Also awareness of visitors for willingness to pay concept, extra payment for environment friendly quality services can help environment and meet sustainability. Krabi has wealthy of resources both social and natural, promoting green/eco-tourism in province is one possibility, promote and develop tourism activities to suit the culture/coastal/mountain/forest environment that harmony with care of buildings, people, culture, social and nature, for example promoting the eco-tourism by the area of forest/marine which the form of an adventure or educational under the supervision and maintenance of natural areas, that possible for reaching tourism sustainable development.



<p style="text-align: center;">N</p> <p>Nature:</p> <ul style="list-style-type: none"> -Reducing volume of various types of pollution -Establishing appropriate criteria for waste separation & waste management with emphasis on 3Rs: Reducing, Reuse & Recycling waste -Minimizing water/power/resource consumption by collecting fees for raw water/power consume & encouraging water/power saving promotion in hotel/business -Conducting EIA study for big hotel or resort facilities where be located at environmentally sensitive areas -Type of diving that does not damage the coral and fish. -Designating traveling zones on basis of carrying capacity -Enforcing environmental legislation 	<p>Economic:</p> <ul style="list-style-type: none"> -Encouraging eco-tourism run by local communities -Increasing costs of utilities & waste management with Polluter Pays Principle -Promoting energy conservation & 3Rs campaign: reducing amount of power consumed and waste generated mean the handling, disposal & recycling costs can be saved -Hotel & tourism industry has policy about Green Purchasing: using green product/green label for serving in their business -Promoting water conservation campaign: it's an effective way to save money from cost of water consumption & cost of wastewater treatment
<p style="text-align: center;">W</p> <p>Well-being:</p> <ul style="list-style-type: none"> -Conducting Good Housekeeping: self-motivation to hotel's staffs in the staff responsible for operating & maintain equipment in laundry, kitchen, guest floor and other area as them benefit: their healthy & safety -Developing and promoting eco-tourism to the coastal/local areas with concept of the harmony of nature as a rest area quietly for well-being and peaceful 	<p style="text-align: center;">E</p> <p>Social:</p> <ul style="list-style-type: none"> -Capacity building: local people, entrepreneurs, visitors, employees to awareness in eco-tourism and eco-operation -Cooperation among stakeholders/interest groups -Preserve & promote local architecture, traditional, & culture -Increasing participation of local people on decision-making related to their ways of life -Increasing public disclosure/transparency about environmental performance of hotels/business -Corporate Social Responsibility: reusing waste materials by donated some usable to service organization; support local community activities <p style="text-align: center;">S</p>



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1. CASE STUDY

1.1. Water Pollution in the Thi Vai River Basin

Similar to other developing countries, economic development is one of the top priorities in Vietnam. The country of Vietnam is sacrificing the natural environment in order to gain economic achievements. Therefore, it is inevitable that Vietnam faces many issues such as: pollutions, diseases, social unbalance, etc. Currently, most of the rivers in Vietnam are calling for assistance, especially those suffering as a result of waste water from industries urban zones, and other development projects in the basin. Urbanization, the formation and rapid development of industrial parks, processing zones ... have caused the pollution at alarming levels in the river systems in Vietnam, including eight river basins with more than 10,000 km² of rivers and canals. The Thi Vai River's story is not uncommon in Vietnam and attracts the attention of scientist, politicians, and communities in Vietnam as well as around the globe. Thi Vai is a river flowing through the natural boundaries of Dong Nai Province and Ba Ria Vung Tau Province. The River originates in the Long Thanh district and runs east to south through the district of Nhon Trach to the district of Tan Thanh. It flows in the southern direction and, meets the sea at Ganh Rai Bay. The Thi Vai River is approximately 76km in length, salty, quite short, large, and deep. The average width is 40-50 m and the average depth is 22 m (the deepest point at 60m). The characteristics of Thi Vai River is similar to a bay because of the advantages it has of supporting water traffic, deep-water port systems, and its location in the most rapidly developing economic center of Vietnam. Due to these contributing factors the River basin is an attractive area. The amount of industrial and residential zones along the river banks are developing very quickly. The main economic sectors in this basin are industrial (as of 2006, there were 11 industrial parks and 192 projects along the Thi Vai River) and port services (general purpose ports and some internal ports of the industrial parks like VEDAN port, MY XUAN port, etc.).

Thi Vai River was seriously polluted as a result of industrial and civil waste water from the surrounding area, especially waste water from factories and industrial parks along the river banks. Each day, the river absorbs about 33. 267m³ of waste water from industrial parks (mostly untreated), not mention to the amount of cooling water from the Phu My thermal power plant and other plants located outside of the industrial park area. In addition, it is also affected by oil spills from aquatic vehicles and other sources of sea pollution from incoming tides.

The industrial parks contributing to the serious river pollution are the Industrial Parks of Nhon Trach I, Nhon Trach II, Nhon Trach III, Go Dau, etc.; the major industrial park pollutant is the Vietnam VEDAN Company Ltd (Vietnam VEDAN). Although Vietnam VEDAN has built three wastewater treatment systems at the three processes of starch and molasses manufacturing with modern technology, none of these systems meet the environment standards.

Taiwan VEDAN Enterprise was established in 1954 in Sa Loc Town, Taichung District, Taiwan. Vietnam VEDAN was established in 1991 in the Phuoc Thai Commune, Long Thanh District, Dong Nai Province about 70 km from Ho Chi Minh City in a 120ha wide area. It is a synthetic industrial park with modern food manufacturing and biotechnology. It is comprised of the Sugar Starch Factory, the Monosodium Glutamate Factory, the Modified Starch Factory, the Suds- acid Factory, the Lysine Factory, the Generator Power Extraction Factory, the PGA Factory, and the Combination Factory of mineral fertilizer pellets.

According to the Report of MONRE (October 7, 2008), Vietnam VEDAN discharged 105.600m³ per month of wastewater from the fermenting processes and 2.360m³ per day of untreated wastewater into the Thi Vai River. The results of water quality monitoring at VEDAN sites from 1994 to 2000 showed that the water quality of the Thi Vai River was quite fresh and unpolluted; however, from the mid 2000s, the water quality has worsened and the dissolved oxygen standard (DO) is low, below 1mg/l.

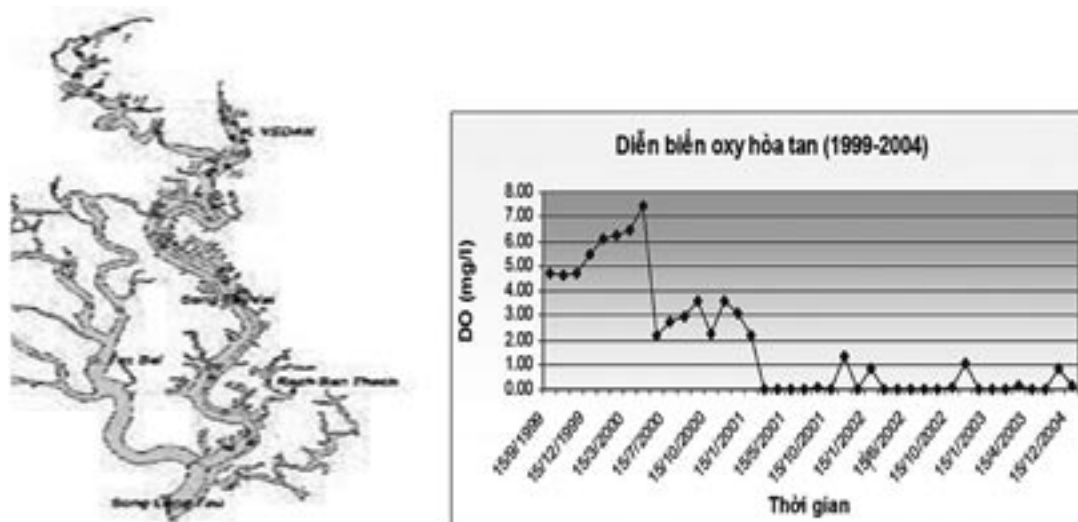


Figure 1. Thi Vai River and DO standard along Thi Vai River

Vietnam VEDAN Company has built a secret pipeline (some parts fixed underground while other parts above ground) running to #2 Quay and following the tow pump piles fixed deeply in the Thi Vai River (about 7-8 meters deep). One discharge mouth with 20cm of diameters was opened in bridge. The environmental pollution caused by Vietnam VEDAN during that time has created mass amounts of aquatic resources to suffer. In the recent years, all who have come to this area have found rapid degradation of the environment resources.

Each year, the Department of Natural Resources and Environment (DONRE) of Dong Nai Province have carried out two to three inspections of companies concerned with the Thi Vai River discharge, including VEDAN Vietnam.

The Ministry of Natural Resources and Environment (MONRE) was also inspected once a year. The Dong Nai authorities also said that they have hired divers to inspect the area over many days, but they did not find violation of Vietnam VEDAN, because its waste-water pumping system is very sophisticated technology.

In 2005, Vietnam VEDAN had to compensate 15 billion VND for aquatic-cultivate men in the Province of Dong Nai, Ba Ria - Vung Tau and Ho Chi Minh City. In this year, MONRE also inspected the environmental protection actions of Vietnam VEDAN and suggested DONR of Dong Nai Province to be given administrative punishment with a fine of 9 million VND. In 2006, relevant agencies have caught and have recorded in writing that Vietnam VEDAN is discharging untreated wastewater directly into the Thi Vai River. In 2008, when the Thi Vai River was polluted and led to the deaths of many aquatic species (both natural and aquaculture) and damages of agricultural plants on two sides of the river. Authorities (MONRE, Environmental Policemen, etc.) and other researchers had proved that VEDAN was the main culprit causing the destruction of the Thi Vai River. The incident also attracted the attention of the media and the voices of many communities. MONRE and the Environmental Police have checked and handled the situation in accordance with the law and Vietnam VEDAN was administratively punished and compensation was given to the victim.

The Vedan company committed to the responsibility to pay for their economic and environmental damages while supporting the people in areas affected by the company's wastewater in accordance with the law. However, in recent times, the attitude and responsibility to provide compensation for local people has not been taken seriously.

2. SUGGESTIONGS / IMPLICATIONS

There are many solutions in order to overcome the pollution issues in the Thi Vai River. These include: adjustments of planning, restraining investments in some industries where there are high pollution risks, strengthening management capacity, and improving enforcement efficiency of environmental protection regulations. However, the first objective should be to manage, supervise and control the area to prevent the discharge of wastewater into the Thi Vai River. This is a very difficult challenge and needs to have the efforts of the authorities at every level. Simultaneously, there needs to be enforced closed collaboration and participation of businesses, companies and local communities.

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1. Pollution risk from industrial waste in Quang Nam, Vietnam

Quang Nam is a young province in the central of Vietnam with the population of about 1.5 millions on the total area of about 1million hectare. Separated from Danang city since 1997, Quang Nam has been identified as one of the poorest provinces in Vietnam with the economy mainly based on the agriculture.

In the recent years, the province has attracted hundreds of businesses to its newly established industrial zones and sub-zones. It created a tendency of transfer in the economic structure somewhat towards industrialization. It created jobs for thousands of the local residents and contributed considerably to the local government budget. However, there have been also environmental problems in the process of industrialization in Quang Nam.

According to records from the provincial Department of Environment and Natural Resources (DoNRE), there are currently five industrial zones and 26 industrial sub-zones in operation in the area of Quang Nam province. Industrial waste from those factories and manufactories are very huge and not yet been put under proper collection and treatment, causing serious pollution for the area.

Solid waste reaches about thousand tons per day on the area of the province. Of which, about 70% of 200 tons per day of urban solid waste is collected. The rest 700 tons per day of rural solid waste are not collected and treated. Most of those wastes are discharged directly to the public ponds, rivers and public areas. Particularly, at the five industrial zones of the province, there are on average 50 tons of solid waste discharged per day. None of the five industrial zones and 26 industrial sub-zones has set up their waste classification stations.

The discharge of solid waste and waste water without treatment to the outside environment from the industrial zones and sub-zones has polluted many rivers in the lower section of the basin. The suspended solids in these rivers exceed four times bigger than the standard. The quality of the river water in the lower section becomes worse. High proportion of iron in the water makes the treatment of river water for living activities becomes most difficult. According the government policies on the process of investment, there should be an environmental impact

assessment (EIA) submitted for the approval of investment to the area. However, during the implementation, due to the urge to have investments in the areas, the local authorities sometimes have accepted a converse process, i.e. approval for the project implementation comes before the EIA submission. The quality of EIA reports are therefore not standardized as they should be. On the other hand, the investment on the waste treatment system is also costly. Many businesses try to avoid this investment or spend very little on this, which leads to ineffective treatment for the environment. Moreover, there have not been strict inspection and penalty for the violations which make the businesses take less serious the task of the environmental protection.

Environmental pollution has serious impacts on the human's health. This fact seems to be aware by the public as people are talking about it. There are articles about the risk of cancer, premature birth, etc caused from pollution. There are also stories about the villages where so many people suffering from the cancer without clear reasons. However, limited scientific ability and technology prevent from visualization of the linkage between environmental pollution and the effects. Since there is still doubt and knowledge is still only from the paper, people's awareness of the fact cannot reach the level it should be. From the story above about the EIA and the investment implementation process in Quang Nam, it can be said that there is still lack of awareness about the impacts from industrial pollution from the decision makers to the investors. People do not take serious the need to consider the impacts from the industrial waste.

The growth of industrial zones and investors in Quang Nam province may be a good signal for the economic growth of the province. It contributes to the provincial budget, brings about jobs for local people, contributes to the poverty alleviation and helps the provincial economic to be less dependent on the agriculture, which is considered vulnerable. However, since the environmental aspect and people's health are ignored, this growth cannot be perfect ? a growth without development, as long as human resource is the key asset for development.

2. Implications

Facing the environmental pollution, Quang Nam province has recently listed out several solutions such as promoting the dissemination and education of law on environmental protection to officials, businesses and the public people in the province. For the coming time, the province will consider proposals for investment in projects or works which are likely to cause major environmental impacts. In the industrial zone management boards, EIA should be evaluated for construction of infrastructure. There should not be anymore the situation where projects come into operation before documenting the environmental impact profile. On the other hand, the province requests to the environmental police force to coordinate with the provincial authorities to strengthen management and inspection, and strictly handle with environmental violations at the industrial zones and sub-zones and the slaughter of cattle and poultry.

These sound to be comparatively appropriate solutions for the current situation of industrial waste in the province. However, there are always big gaps from the paper to implementation. The roots of the problems are still not yet

mentioned in the solutions. Firstly, the awareness of the impacts of the pollution from industrial waste need to be addressed and improved for all the people from the public people to the authorities, especially the decision makers. Secondly, the knowledge of sustainable development, including the balance of 4 key aspects of development such as nature, economic, social and well-being need to be widespread among the key personnel of the province. And finally, there should be a way out for the current situation of the industrial waste in the province. There is an urge to have effective waste treatment centers in the big industrial zones as well as the industrial sub-zones in the province, especially those locating in the residential areas or having discharge that affects the water sources, including the ground water.



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1. CASE STUDY

(Identify and make an analysis of one unsustainable issue in your community / country from holistic viewpoint, using such analytical tool as the Compass Method. Please make the most of what you have learned during the program, especially in Minamata.)

Problem of Solid waste in India

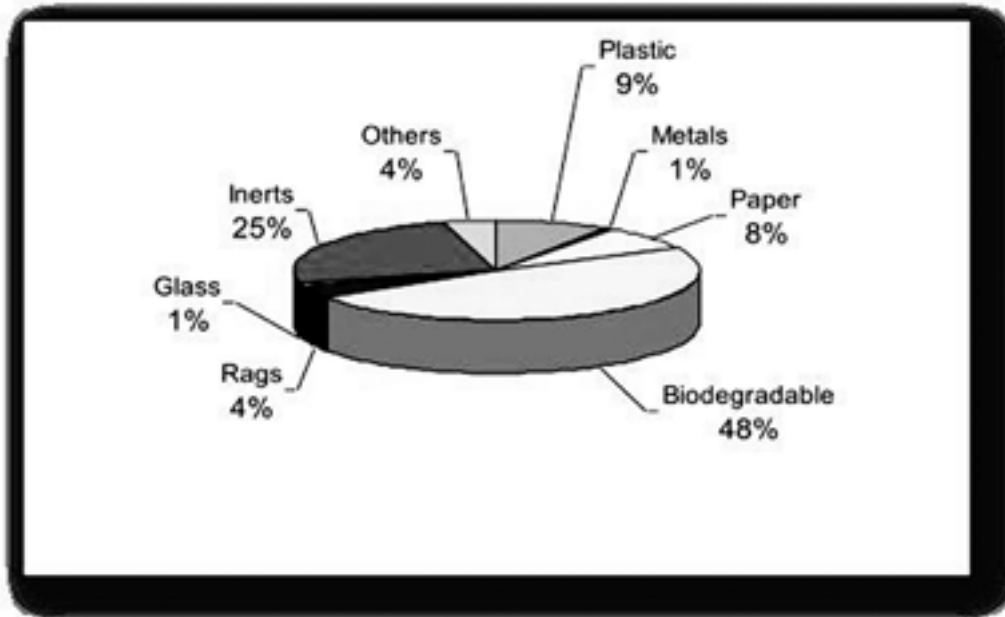
Due to rapid urbanization and uncontrolled growth rate of population, municipal solid waste management (MSWM) has become acute in India. MSWM though an essential service, is given low priority by the civic authorities.

Municipal solid waste management (MSWM) encompasses planning, engineering, organization, administration, financial and legal aspects of activities associated with generation, storage, collection, transfer and transport, processing and disposal of municipal solid wastes (household garbage and rubbish, street sweepings, construction debris, sanitation residues etc.) in an environmentally compatible manner adopting principles of economy, aesthetics, energy and conservation (Tchobanoglous et al., 1997).

All living organism excrete solid waste after digestion of food material, so generation of solid waste is a natural phenomenon upto an extent. But due to civilization, industrialization and urbanization the complexity of solid waste is increasing. Earth is becoming more polluted day by day.

In India, the quantity of biodegradable waste is high (Figure 1). But due to urbanization, change of food habits and life style, the non-biodegradable component is also increasing.

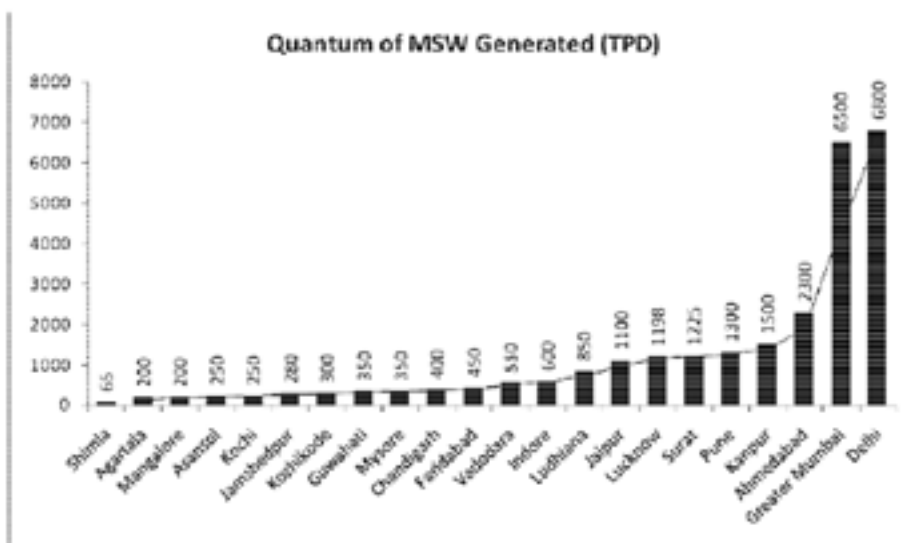
Figure 1 Composition of Municipal solid waste



Source: NSWAI website

FICCI recently has done survey on the current status of municipal solid waste in major 48 Indian cities which includes 21 class I cities (> million one population) and 27 cities with less than one million population shows that among the class I cities, Agartala generates least quantum of waste (200 TPD) and Delhi generates 6800 TPD of waste. Among the class II cities, Chandigarh generates the maximum quantum of waste and Shimla generates the least quantum of waste (FICCI report, August 2009).

Figure 2. Bar graph representing the quantum of waste generate



The findings of the survey clearly demonstrate the lack of proper planning in relation to the solid waste status of a city and the need for including treatment and disposal facilities for urban solid waste management as part of a city's master plan. In the survey, the Municipal Corporations itself accepted that they are ill-equipped to handle and effectively manage the large quantum of waste generated per day in the cities. The Corporations face constraints in terms of technology, know-how, manpower and most importantly adequate funds to tackle the menace. This survey is about the cities only but if we enlargen its scope and go to semi-urban areas, the situation is even worse there the garbage is lying on the roadside with no sanitary landfills and inviting major threats to the health and environment of the residents.

2. SUGGESTIONGS / IMPLICATIONS

(Make suggestions, based on the analysis above, so that the community / country can be revitalized or more sustainable. Suggestions can be directed either to central / local government and/or leaders of Non-Governmental Organizations.)

Due to civilization, industrialization and urbanization the complexity of solid waste is increasing but the area to dump the waste is decreasing day by day. Waste management is becoming problem not only for urban areas but semi-urban and rural areas too and will become more acute with the time. India has inadequate waste management as open dumps and roadside dumping of waste is seen often. The objective of proper solid waste management is to reduce the quantity of solid waste disposed off on land by recovery of materials and energy from solid waste.

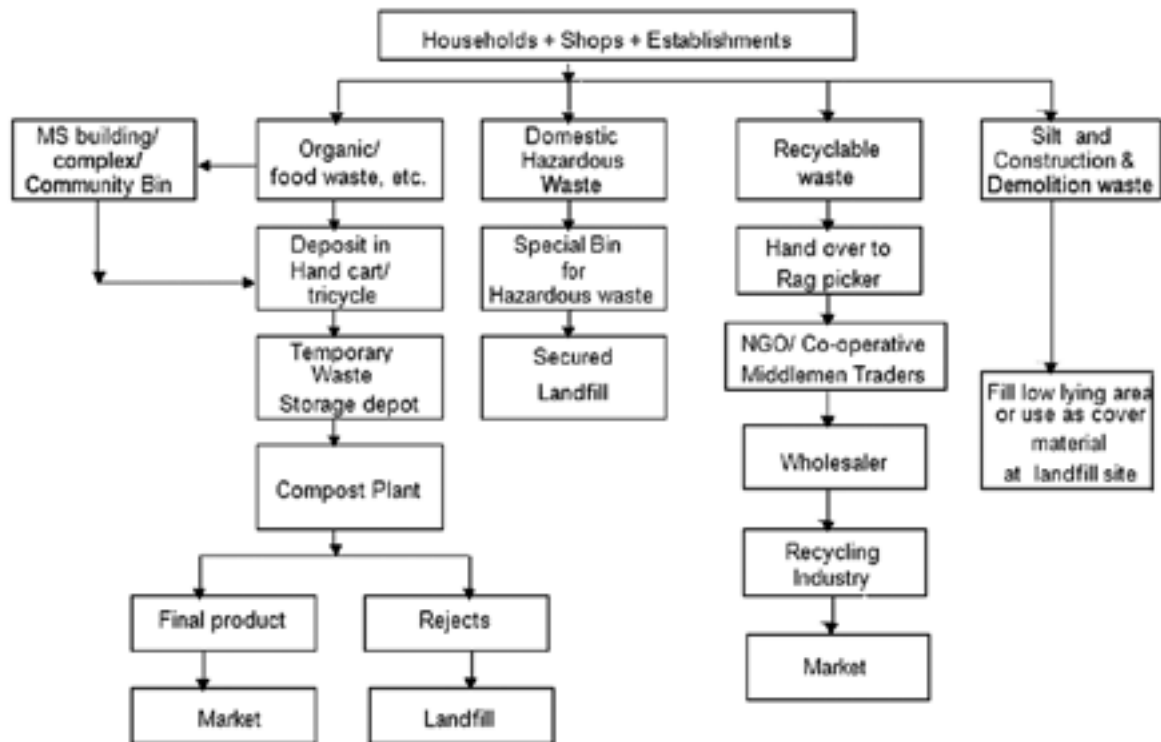
ISWM is the application of suitable techniques, technologies and management programs covering all types of solid wastes from all sources to achieve the twin objectives of

1. waste reduction and
2. effective management of waste still produced after waste reduction.

Sustainable development can only be achieved if less use of the world's resources (raw materials and energy) and less pollution and waste. Recycling of materials must be done or on-site energy recovery.

Management of solid waste must reduce, as much as possible; the environmental impacts of waste management and it should be economical.

Figure 3: Municipal solid waste in India



(Source: Supreme Court Committee Report, 1999)

There is an adequate legal framework existing in the country to address MSWM. On the present status of MSWM, the committee constituted by Supreme Court of India summarized elements of MSWM in India in a flow chart (Figure 3). What is lacking is its implementation. The community sensitization and public awareness is low. There is no system of segregation of organic, inorganic and recyclable wastes at household level.

For the successful implementation of the legal provisions and to have an integrated approach towards sustainable management of municipal solid wastes in the country and public awareness, political will and public participation are essential.



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A SUSTAINABILITY ANALYSIS OF THE COAL SEAM GAS INDUSTRY IN QUEENSLAND

Background

The coal seam gas (CSG) industry in Queensland has expanded rapidly over the last decade and continues to grow with a range of large scale projects under development (Nunan 2006; DEEDI 2011). These proposed projects are located in regional centres, more than often on prime agricultural land in long established rural communities and because of this, there is growing concern over the long term environmental, social and economic impacts of the industry.

CSG is a non-renewable fossil fuel extracted from coal seams 200-1000m below the surface. The gas is released through a reduction of pressure when wells are drilled into the seam bringing both gas and water (as a by-product) to the surface. A mixture of water, sand and chemicals is often required to fracture the coal seam.

CSG development in Queensland is currently concentrated in the Darling Downs region west of the Great Dividing Range in the south of the state. Underlying this region is the Great Artesian Basin, Australia's most important freshwater resource (GABPG 2012). Currently there are plans for 40,000 wells.

Using the compass assessment method

The compass assessment method has been used to aid a sustainability analysis of the CSG industry in Queensland (Figure 1) and lessons learnt in Minamata form the basis of suggestions for achieving more sustainable outcomes for both the industry and impacted communities.

NATURE

We consider that the overriding issue in CSG development is the uncertainty surrounding the potential cumulative regional scale impacts of multiple developments

Geoscience Australia 2011

The impacts of the CSG industry on the environment, in particular on the Great Artesian Basin, are generally

unknown as very little independent research has been undertaken. Unrestricted water extraction could reduce water availability, alter groundwater levels and bring highly saline water to the surface. The use of chemicals for fracking raises concerns regarding both land and water contamination. If the precautionary principle is applied, Queensland has the opportunity to avoid severe environmental degradation and contamination that could impact upon the wellbeing of individuals as seen in Minamata and upon the sustainability of rural communities.

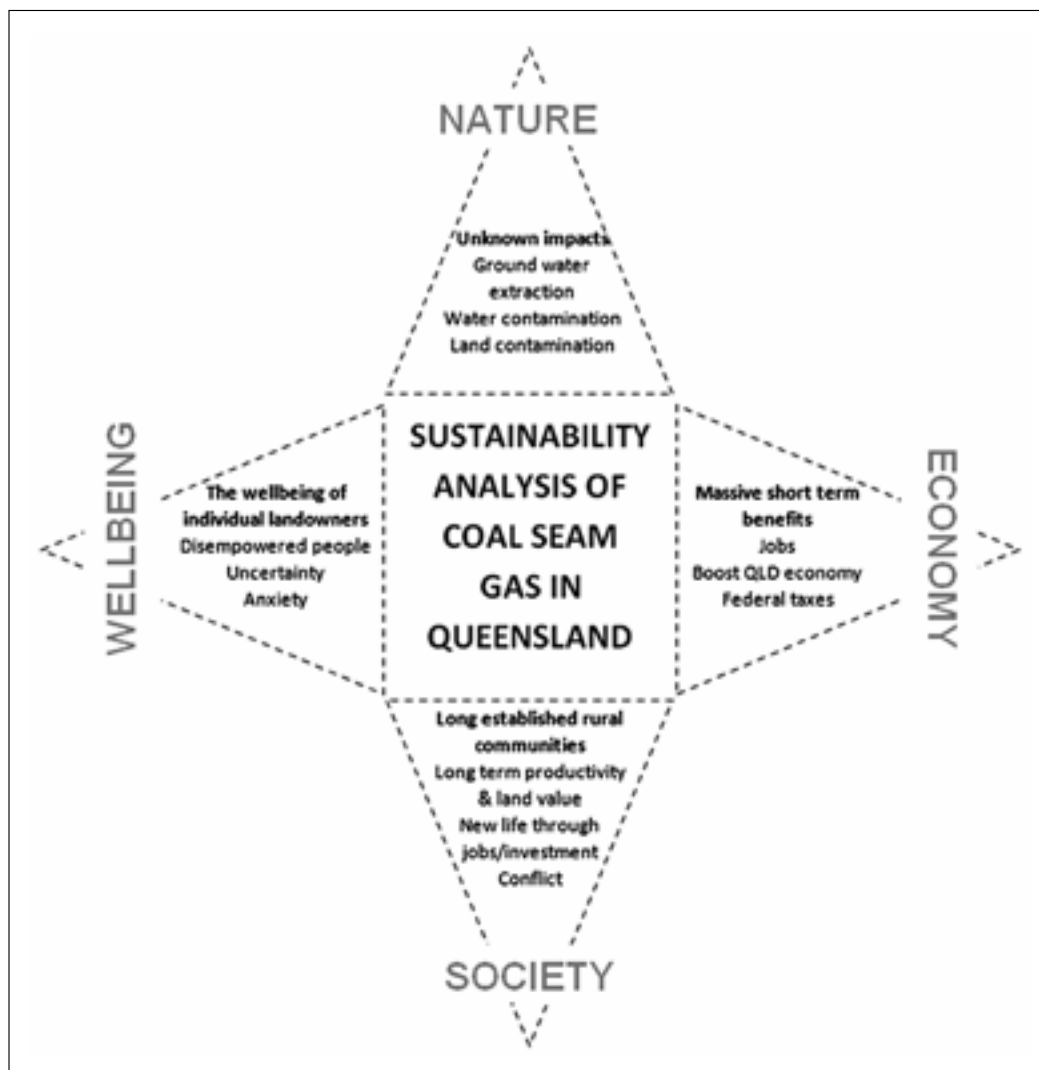


Figure 1 Compass assessment of coal seam gas industry in Queensland
(Compass assessment source: Atkisson 2008)

ECONOMY

It is undeniable that the CSG industry will provide significant economic benefits for Queensland in the short term but whether it will be at the expense of long term food and fibre production is uncertain. It is estimated that 18,000 direct and indirect jobs will be created over 10 years with a \$3 billion boost to the Queensland economy. The British Gas (BG) Curtis Island export project alone is expected to see \$1 billion dollars a year paid in federal taxes and a

further \$300 million a year in royalties to the Queensland Government (ABC 2010). As was the case in Minamata, the government strongly supports the industry for its contribution to the economy.

The reality is that the referee of this game is also the sole largest beneficiary of the game

Drew Wagner, AgForce QLD

SOCIETY

The CSG industry has the potential to bring new life to rural communities through jobs and investment in infrastructure. However, if CSG development impacts the quality of water and land it will also impact agricultural productivity and land value. As a result, the industry could be detrimental to the long term sustainability of rural communities and to the security of food and fibre production in Queensland. As in the case of Minamata, there is also the potential for conflict to arise within these rural communities as some people within the community actively support the industry for the benefits it brings while others lobby against it.

WELLBEING

On one side, the highly organised CSG industry supported by government and high energy demand has created a powerful driving force for CSG development. On the other side, relatively powerless landowners are struggling with uncertainty regarding their futures and are disempowered by the loss of control over their land. Uncertainty, particularly in regards to impacts on water, land, livelihoods and health, gives much cause for anxiety and stress. As shown in Minamata, when disempowered people or victims come together to bring about change a lot can be achieved. Organisation and persistence can turn a powerless group of individuals into a powerful force for change. Grassroots activism that demands accountability and transparency brought about positive change in Minamata and in a similar way grassroots activism and lobbying efforts in Queensland have impacted upon public opinion and policy at both a state and national level.

Suggestions for achieving a more sustainable outcome

There are two key factors causing concern about the rapid progress of the coal seam gas industry in Queensland: uncertainty and distrust. Uncertainty regarding potential environmental impacts and distrust in the governments capacity to inform, regulate and provide impartial assessments.

The following suggestions for achieving more sustainable outcomes for the industry and impacted communities are based on the above analysis and lessons learnt from Minamata.

- Commission independent scientific research into the environmental impact of the industry
- Commission an assessment of the long term costs and benefits to communities and the agricultural industry under different scenarios taking into account current uncertainties regarding environmental, social and economic impacts
- Adopt the precautionary principle and slow development until potential impacts are fully understood and action is taken to mitigate risks
- Make all information publically available (e.g. what chemicals are used in fracking)

-
- Provide clear and accurate information regarding risks and mitigation measures
 - Continued public, community and lobbying (agricultural/environmental) pressure on the industry and on both state and national governments to ensure transparency and accountability

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1. Case Study - RENA

On Wednesday 5 October 2011 the container ship MV RENA ran aground on the Astrolabe Reef, near Tauranga in the Bay of Plenty, New Zealand. The RENA was carrying over 1000 containers, eight of which contained hazardous materials, as well as 1,700 tonnes of heavy fuel oil and 200 tonnes of marine diesel. The RENA grounding was due to human error; the Astrolabe is a well documented reef.

The grounding resulted in an oil spill, with approximately 350 tonnes of heavy fuel oil leaked into the Bay of Plenty. Oil and sludge from the ship washed to shore, causing damage to the environment, and to marine and bird life. Approximately 2,066 birds were found to have died from the oil. As well as the environmental and ecological damage, the RENA incident also had economic and social implications. The direct bill for cleaning up the disaster is approximately \$25 million, which does not take into account lost productivity or other impacts on the local economy.



The MV RENA as at 11 January 2012

The New Zealand Government, coordinated by Maritime New Zealand and the Minister of Transport initiated an immediate response to the disaster. The incident, New Zealand's worst ever environmental disaster, necessitated a whole of government response. The response had several key aspects. Firstly, the physical response: the Government's actions to mitigate the disaster. 350 tonnes of oil leaked from the Rena, and much of this made its way to shore. The Government coordinated the response to the oil spill, which included clean up of the affected beaches and the use of dispersants on the oil in the ocean and assistance to affected wildlife. A National Oiled Wildlife Response Team including veterinarians and ornithologists worked to treat affected birds and was on the ground within 48 hours of the incident.

A salvage operation was undertaken to remove oil and cargo from the ship. To date, over 1,300 tonnes of oil have been recovered through fuel recovery operations on board the Rena. Salvage operations are ongoing and are dependent on many external factors such as favourable weather conditions. Ultimately, the whole of the wreck itself may need to be removed from the reef, a task which will be both expensive and time consuming.

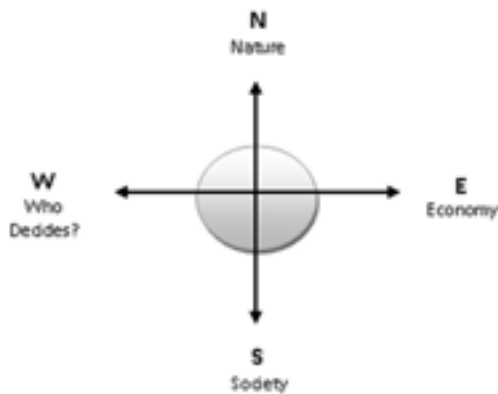
Secondly the social response: community engagement. The Rena disaster affected the lives of thousands of residents of the Bay of Plenty, in particular those of the city of Tauranga. Alongside the damage to the regional economy through the inability to use marine resources and the negative effects on tourism, the damage to the region's natural environment caused much emotional anguish for residents. For local iwi¹ in particular, whose identity and culture is based around natural resources, the damage to the environment was devastating. Community engagement is an area where the Government was not at first particularly strong, as many people felt uninformed, powerless, and that the Government was not doing enough in the days after the disaster. This led to many people ignoring official instructions to stay away from the beaches and attempting to clean up the spill themselves. This situation was recognised quickly, and communication channels were opened up. Local and Central Government put in place volunteer coordination initiatives that utilised local people as a resource, communication strategies such as regular press conferences and community meetings, compensated local businesses for lost revenue occurring from the incident and prioritised clean up strategies so that the most popular beaches could be safely reopened for recreational use as soon as possible.

Thirdly, the ongoing environmental response: the Rena Long-term Environmental Recovery Plan. This will be led by the Ministry for the Environment and will address the longer term ecological and environmental damage and is currently in the preliminary stages of implementation. Additionally it is likely that the government will seek to reclaim at least some of the costs incurred by the incidents from the Rena's owners, and that the operators of the ship have been charged for offences under the Maritime Transport Act.

2. Lessons learned and the implications of the Rena Incident

The Sustainability Compass method offers a useful tool with which to examine the implications of, and the lessons learned from, the Rena Incident. The compass has four points, Nature, Economy, Society and Who Decides. 'Who

¹ Iwi -Maori tribes, New Zealand's indigenous people.



decides' is a means of illustrating the relationships between actors in society, the values that influence their decisions (i.e. nature and economy) and the governance structures in place. All of these points are interrelated and interdependent; this is illustrated by the circle which connects all of the four points.

The Rena incident clearly illustrates how strongly all of the four points of the compass are interrelated. Firstly, the Rena's grounding on the reef was an environmental (nature) issue.

Because of the dependence of people (society) on the natural environment both for their livelihoods (economy) and their wellbeing, it resonated to these points as well. The distress of society at the incident caused some conflict between local residents and decision makers (government) as well as anger towards those deemed responsible (the ship's owners and operators), which upset normal governance processes (who decides). Overall, the balance that the compass had been in previously to the Rena's grounding was disturbed.

The Rena also illustrates how the actions of one agent in society can heavily impact on the rest. The Rena's grounding was due to negligence by its crew, and their actions have had ramifications on the whole community and the burden of cleaning up the damage is shared by the whole country (through the fiscal cost to the government). The ability of one agent in a society to damage a shared resource and to inflict financial and economic injury on the rest highlights the importance of strong environmental and social governance. The 'who decides' point of the compass, or governance, is essential to a harmonious and sustainable society. New Zealand has strong environmental governance and transparent and open decision making processes. This means that local and central government, private sector, community and indigenous groups were able to work together on the recovery, despite some initial discord. The clean up would not have been nearly so effective, had the government response team been unable to put into place initiatives such as the 'adopt a beach' clean up events which mobilised thousands of volunteers. This initiative would have been in turn more expensive for the government without the private sector sponsoring volunteers and providing equipment, food and other resources. Correspondingly, the efforts of the volunteers to clean up the oil wouldn't have been effective without official assistance and technical expertise, and risked endangering participants (as the oil slick is toxic). Cooperation across government, private sector, residents and civil society ensure an effective collective response.

The scale of the disaster would have been far greater if it had occurred in a country with less stringent environmental governance. The regulations, processes and contingency plans required by law meant that resources could be mobilised very quickly. Because New Zealand is a democratic and open society, residents were able to petition and pressure the government to act in their interests, and mitigate the environmental damage. Disasters such as the Rena's grounding on the Astrolabe reef can occur even in countries with strong environmental governance and regulations. An effective response to a large scale environmental disaster needs to be inclusive of a wide range of interested groups, and to take into account environmental, economic and social factors. New Zealand

is fortunate that the Rena incident was able to be responded to promptly and effectively, limiting the resulting damage. I hope that the lessons learned from the Rena will be remembered and applied in the future, both in New Zealand and the rest of the world.

Manaaki Whenua, Manaaki Tangata, Haere whakamua
Care for the land, Care for the people, Go forward.



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How China should respond to the arrival of the Minamata era

Post-war Japan saw very rapid economic development but at the same time also suffered from problems such as serious water and air pollution, which in turn had a disastrous effect on the health of the general public. One of the most well known of these effects was Minamata disease. Minamata disease not only harmed people's health but also landed a devastating blow to the local environment and the economy. Even now in the 21st century, the harm caused by Minamata disease has not been completely resolved and the ecological security of Minamata bay is still under threat.

Similarly, over the past 30 years of China's economic reform and opening up, the economy has developed very rapidly and people's living standards have increased substantially. However, this economic reform has brought tremendous pressure on China's fragile ecology. Since 2009, serious heavy metal pollution incidents that have shocked the nation have occurred in Liuyang and Wugang in Hunan, Fengxiang in Shaanxi, Shanghang in Fujian, Jiyuan in Henan, Yancheng in Jiangsu, Qingyuan in Guangdong and Hechi in Guangxi. According to statistics from the Ministry of Environmental Protection, in 2009, Environmental Protection Bureaus received reports of 12 heavy metal or metalloid pollution incidents. These led to 4035 people having blood lead levels over the standard safe limit, 182 people having blood cadmium levels above the standard safe limit and 32 mass incidents breaking out. The era of Minamata in China arrived with the rapid economic development and the continuous rise in GDP.

Present day China deserves the title of 'workshop of the world'. It is reported that out of total global manufacturing, China produces 68% of all computers, 50% of all televisions, 65% of all refrigerators, 80% of all air conditioners, 70% of all mobile phones, 44% of all washing machines, 70% of all microwave ovens and 65% of all digital cameras.¹ Because China is the center of the world's IT products' processing industry, the environment has come under serious pressure. This has given rise to serious attention being paid to the discharge of heavy metals. Since 2009, Chinese environmental protection organizations have carried out investigations into heavy metal problems in the IT industry and have published five reports giving details of the findings. Through the course of the investigations they found a number of big suppliers to famous IT brands had discharge violations causing serious pollution. After

¹ Made in China is not a False Reputation, Yanzhao Metropolis Daily, 28th December, 2008.

preliminary investigations into discharge violations by IT product suppliers and their connections to famous IT brands, more than 30 Chinese Environmental Protection NGOs sent a joint letter to 29 IT brand companies. The letter was sent in order to confirm suppliers' violations and to encourage the IT brands to use government disclosed environmental information to carry out management of their supply chain and ensure that their suppliers were environmentally compliant.

Out of all the 29 IT brands, the response from Apple was the most disappointing. On August 31st, 2011, five environmental protection organizations released the Phase V IT report into heavy metal pollution in the IT industry, Apple special edition titled, "The Other Side of Apple II ? Pollution Spreads through Apple's Supply Chain." During the course of the investigation the environmental protection organizations found that pollution from a number of Apple's suppliers had already caused serious harm to the environment. Amongst these suppliers, discharge from Meiko Electronics and the pollution in surrounding waterways was similar to the discharge from CHISSO, the perpetrator of Minamata disease. Meiko Electronics is a heavy emitting PCB manufacturer located in Wuhan. Nantaizi Lake nearby to the factory has suffered from serious pollution. Tests on the water body acting as a discharge channel next to the factory have shown that it contained copper and nickel, both indicating pollutants from PCB factories. Sediment samples taken from the point where the drainage channel intersects with Nantaizi Lake have shown that levels of copper reached as high as 4270 mg/kg, 56-193 times greater than the amount found in the sediment of the major lakes of the middle reaches of the Yangtze. In the words of a Nantaizi Lake fisherman, "Our generation drinks polluted water but the next generation will be drinking poisoned water."



Discharge Channel Leading to Nantaizi Lake near to Wuhan's Meiko Electronics (Photo: Ma Jun)

However, this kind of case is not just limited to one company. In the report, "The Other Side of Apple II - Pollution Spreads through Apple's Supply Chain," environmental protection organizations found 22 suppliers with environmental problems. The Institute of Public & Environmental Affairs Pollution Map Database already contains more than 94,000 enterprise violation records.

Green Choice Alliance Project: Multiple Stakeholder Participation in Supply Chain Environmental Management Solutions

On March 22nd, 2007, the Institute of Public & Environmental Affairs (IPE) and 20 other environmental protection organizations, from all over China, jointly launched the Green Choice initiative. One aspect was to encourage consumers to use their purchasing power to affect the environmental performance of a company. The other proposed that large retailers and major industries actively strengthen the environmental management of their supply chain by comparing a list of environmentally non-compliant enterprises with a list of their own suppliers and then subjecting any non-compliant enterprises to stringent auditing. The search capabilities of the *China Water Pollution Map* provides an effective tool for searching suppliers. Users just have to enter any keyword from the name of an enterprise into the search tool and they will be able to understand whether or not an enterprise has had a government published supervision record anytime since 2004. Through this search mechanism major companies can conveniently compare a list of their suppliers with a government published list of violating enterprises.

A number of large companies have already started using the Pollution Map Database to make inquiries into their suppliers and in the process of doing so they have found a number of suppliers with violation records. Discovering problems is the first step in strengthening environmental management in the global supply chain, but even more important is understanding those problems. In order to provide enterprises with a systematic solution, in August 2008, the IPE published the Green Choice Alliance (GCA) Supply Chain Environmental Management System. Its aim was to promote a clear commitment to corporate citizenship though not using polluting enterprises as suppliers. The dynamic updating of the IPE database was then used as a way of even more effectively distinguishing violating suppliers. Through a transparent and inclusive auditing system suppliers would then be pushed to find effective resolutions to pollution problems in the supply chain.

Major companies benefit from the current globalized procurement model. Therefore, changing this kind of model that brings so many benefits can be challenging. The Green Choice Alliance stresses that companies should first make a promise to disclose information so that they can put themselves in a position whereby they are under public supervision. This then urges them to genuinely follow through on any commitments made. So far, more than 30 companies, including Wal-Mart, Nike, GE, Siemens, Esquel, Unilever, Sony and Coca-Cola have already started to use disclosed information collected together by the environmental protection organizations in order to carry out management of their supply chain and have pushed nearly 400 suppliers to disclose information and make improvements.

After the Phase V investigative report, which was published in 2011, Apple entered into a dialogue with the environmental protection organizations and through many rounds of difficult negotiations, Apple has carried out audits on suppliers mentioned by the NGOs. Finally, through the input of multiple stakeholders, Wuhan Meiko has stated that they will invite a specialist auditing company to carry out an audit so as to understand the problems that exist within the factory and how they can begin making improvements. Wuhan Meiko has also stated that they will invest heavily in order to carry out dredging of Nantaizi Lake.



Kim Jin-Ju (Republic of Korea)

**Public Official
Environment Department
Seodaemun-gu City Office**

1. CASE STUDY

I will now introduce a recent case of maritime pollution in Korea.

The 'West Sea Oil Spill,' -or, to use the names of the parties involved- 'Samsung Herbei Spirit Oil Spill,' involved the collision between a marine crane and the tanker Herbei Spirit off the west coast of Korea near Tae-ahn, spilling massive amounts of oil. The crane, which had participated in the construction of Incheon Bridge, was being towed by 2 barges belonging to Samsung Heavy Industries, when the chain link to one of the ships broke, causing the crane to collide 3 times with the tanker.

Nearly 12,547 kiloliters of oil were spilled in the incident. This is 2.5 times the amount spilled in the Sea Prince incident, the largest maritime oil spill in Korea up to that point. The amount also exceeds 10,234kl, spilled over a 10-year period from 1997 in 3915 separate incidents. The thick belt of spilled oil drifted into the harbors of Manripo, Cheonnipo, and Mo-hang on the day of the spill, and had spread to Anheung Harbor near the entrance of Geunso Bay and Garorim Bay in two days. By the third day, oil spread to Cheonsoo Bay, and the next day, oil reached Ahnmyeon Island. Emulsified globs of oil, or 'tar balls,' also spread widely. It has been reported that by January 2nd, tar balls had reached Jindo and Haenam in Jeolla Province and the coasts of Chuja Island near Jeju.

Coast Guard ships tasked with stopping the spread of oil were not very effective in high winds and waves. Failure to place oil fences and other mishaps contributed to the extent of the spread. In one month after the spill, only 4175kl of oil were recovered, less than half of the initial spill. 25,482 tons of other refuse were also recovered. In the same period of time, 1071 hectares in 112 fish farms in Seosan and 4088 hectares in 361 fish farms in Tae-ahn had taken damage. Seosan, Tae-ahn, Boryeong, Seocheon, Hongseong, and Dangjin were declared as Special Disaster Areas. The first stage of maritime decontamination ended on 1/8/2008, while coastal decontamination continued until 10/10. In total, 4175kl of oil were recovered, and 32,074 tons of absorbent material was used.

The incident was essentially a human disaster. The barge had ignored warnings of foul weather and of collision. The sailing log was even manipulated afterwards to hide the fact that the ship had received such transmissions.

I believe the incident is similar to the Minamata Incident in Japan. Samsung, a corporation caused massive pollution in the beautifully preserved west coast, and the government's inept reaction worsened the situation.



< contaminated the western sea >



< oiled with bird >

2. SUGGESTIONGS / IMPLICATIONS

Now I will outline some countermeasures against this type of maritime pollution.

The first method is natural recovery. In natural recovery, no effort is made to remove the oil. It is used when there are no effective artificial remedies; that is, it is used when the rate of evaporation is faster than the rate of artificial removal, when the damage is minimal, when it is likely that decontamination efforts would cause further harm, or when migratory birds or marine mammals are nearby.

The second method is artificial decontamination. This includes washing, containment, collection, removal, and disposal. Washing can be low-temperature or high-temperature, or low-pressure or high-pressure. High-temperature, high-pressure washing is the surest method. However, as it kills microbes, it is not preferred in advanced countries. Problem arises when localities that depend on tourism demand such washing, as it can lead to ecological destruction.

The effort of volunteers has been important in the cleanup. Throngs of volunteers headed to the west coast to partake in decontamination. Over half a million volunteers braved harsh winter winds during the first month, and donations kept on flowing. A total of 2,132,322 people took part in the decontamination effort, of which 1,226,730 were volunteers.

Like in the Minamata Incident, quick actions by corporations and the government, and individual efforts are necessary to overcome environmental catastrophes.



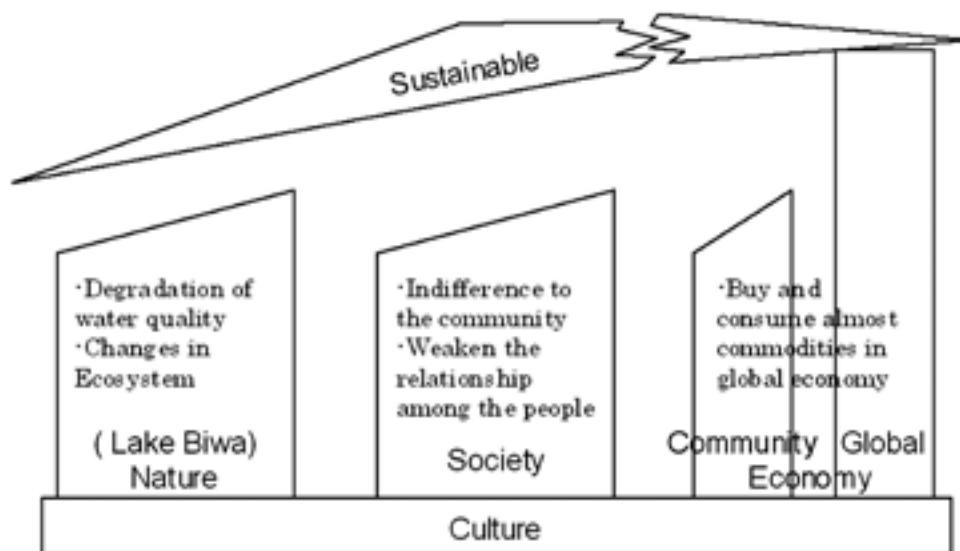
<volunteer activity>



Maho Kosaka (Japan)

Senior Staff for Environmental Administration
Shiga Prefectural Government
www.pref.shiga.jp/

1. Analysis of the Unsustainable Issue in Shiga Pref.



1) Nature

I focused on Lake Biwa which is located in the center of Shiga Pref. and covers one-sixth area of Shiga Pref..

Water quality is still not good although it is getting better as a result of our effort. Also, the ecosystem is changing such as propagation of foreign fish species.

2) Society

Shiga Pref. (southern area) is getting be bedroom town. Residents are staying there only to sleep. Therefore, they are indifferent to the community and the relationship among them is getting weakened. If so, some people feel lonely, pass away with solitude, can't get rescue and assist form community in time of disaster. Also, there are no recreation such as local festival and eating local fish.

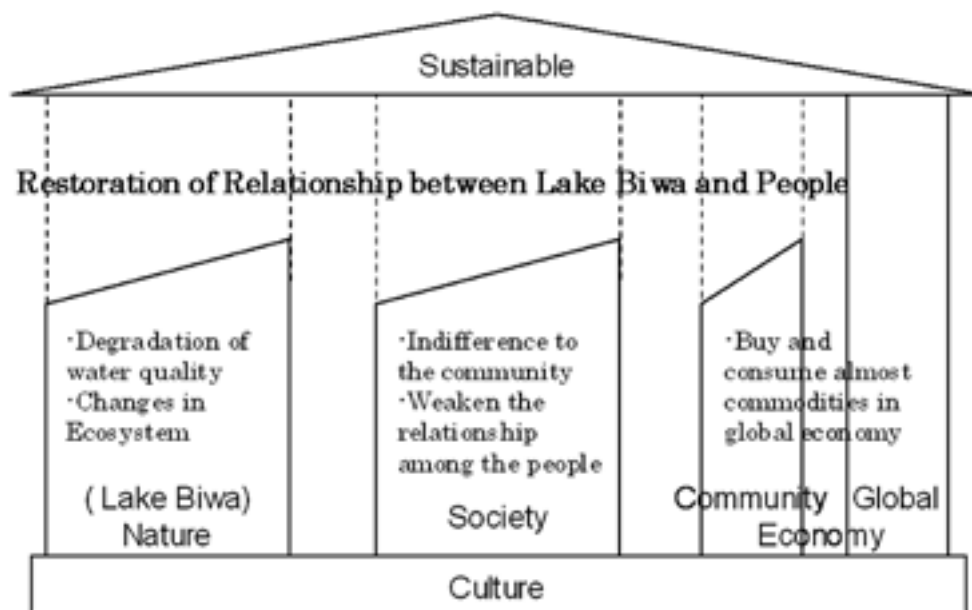
3) Economy

I divided community and global economy because we divided like this when we analyzed case of Minamata in Japan and Buyat Bay in Indonesia in the group discussion of JENESYS Programme. In two these cases, they

weren't able to keep sustainability because they neglected community economy.

In Shiga Pref., people also neglect community economy because they buy and consume almost commodities in global economy.

2. Suggestions / Implementations



I suggest promoting to restore relationship between Lake Biwa and people as a holistic approach for more sustainable.

To eat traditional lake fish is one example to restore them. If people eat them in their daily life,

- 1) People will be interested in conserve the 'delicious lake', use more environmental friendly detergents and make fish paths, which were destroyed by paddy development, for fish to go up to paddy field to spawn. (Nature)
- 2) People will know each other by the activity to make fish paths. Local festival based on dietary culture will revive. (Society)
- 3) Local products will consume in community. Fisherman will get more income. (Economy)

In addition, we will be able to prevent to consume a lot of nature resources from other countries.

3. Conclusions

I found our daily life in Shiga Pref. is unsustainable by analyzing based on tool which I learned in JENESYS Programme. On the other hand, I understood the importance of our current policy which is to restore relationship between Lake Biwa and people. This policy is effective and holistic policy for more sustainable.

I would like to expand and promote this policy by using this analysis so that we can close to sustainable society.



Yumiko Shimozato (Japan)

**Research Student
University of the Sacred Heart**

What the civilized society has brought to us ? from the Fukushima Daiichi Nuclear Power Plant Accident point of view

The Root of problem awareness

This program has taught me many things. It was a really splendid time and I gained the opportunity to think about the future of East Asian countries through "Minamata". It was especially impressive to learn about the differences in awareness of "Sustainability" of nation-building depending on each country. Our final group task was to place "Sustainable Future" as the axial of our discussion. There was a moment when "Sustainable Future" was naturally converted to "Sustainable Development" in our group. For me, "Future" and "Development" meant the same and I could not find a reason to bear attachment to "Development". I then asked one of my group members, "Why is it Development?" and they answered that "developed countries aim for the Future but we who live in developing countries are still at the Development stage." I was the only one in my group from a so-called developed country (I am uncomfortable using this expression.)

I did understand their answer but was not convinced. It was probably because of the Fukushima Daiichi Nuclear Power Plant Accident that took place on March 11. In the process of development of Japan, our country neither "aimed for Sustainable Development" nor "Sustainable Future". The idea of "Sustainable" does not fit to the state where Japan is at now. This uncomfortable feeling is probably the reason why I was not convinced by the answer my group member gave. Even though we are a developed country, we are still at a developing stage, when it comes to Sustainability.

This Nuclear Power Plant Accident proved to Japan that its civilization did not result in a perfect affluent society where all could be happy.

For this post program task, having "Nuclear power plant" as a keyword,

I would like to think of Japan's sustainability from a very big standpoint, the "civilization" point of view.

1. Case study

(1) About the Nuclear Power Plant Accident

On March 11, 2011 Japan was struck by the Great East Japan Earthquake. News broadcasts showed cars and houses washed away by the Tsunami. TV images were shocking to watch, not only to me, but to a great deal of Japanese viewers. The same time this incident took place, TV broadcasts announced news of the Fukushima Daiichi Nuclear Power Plant Accident. However, only after the IAEA (International Atomic Energy Agency) announcement on March 30, was the nation informed that a maximum volume of radioactive substances were dispersed due to the hydrogen explosion of the No. 1 and 3 nuclear power stations and the damage to the No. 2 nuclear power station's containment. The announcement was delayed because of the fear of harmful rumors which put the health of Japanese citizens at risk.

(2) The Nuclear Power Plant Accident and the Minamata disease

When you compare the Nuclear Power Plant Accident with the Minamata disease, you notice many similarities. For example, you notice the similarities from the aspect of harmful rumors against "FUKUSHIMA" or the government's compensation problems. Mr. Masazumi Harada, who is known as a Minamata disease doctor, has pointed out the similarities of the Minamata disease and the Nuclear Power Plant Accident and mentioned that "The Nuclear Power Plant Accident is not a natural disaster but a human disaster. The country and companies both avoid taking responsibility. However, these two are more different than it might be presumed. Damage caused by the radioactive materials is more complicated and the follow-up measures that need to be taken are difficult. "

At the Nuclear Power Plant accident, a high concentration of radioactive materials were not just detected in the air and ground but in the sea life as well as a high concentration of polluted water was discharged into the ocean. When the high concentration of polluted water was discharged, several experts stated that "as radioactive materials will be attenuated by sea water, there will be no negative effects to the environment". In Minamata, organic mercury that was attenuated by sea water entered the fish and shellfish because of the food chain and caused a big problem. At first, the nuclear power plant accident was said to be a "natural disaster" but as time passed, people began to think that it was a "human disaster". In other words, this meant that the nuclear plant accident is a man-caused extensive environmental pollution problem. It can also be said that the accident was caused due to overconfidence in science and technology. There are similarities between the Minamata disease and the Nuclear Power Plant Accident such as the fact that the national policies and corporate interests were favored, or the citizens were disregarded and so on. In most cases, key experts that the government appointed to handle these matters were scholars who were convenient choices for the government. In the case of Minamata and the nuclear plant accident, scholars who pointed out the danger of the nuclear plant were removed from their positions. As the nuclear power plant is the nation itself, there is enormous pressure on those individuals who pointed out to the danger of the nuclear power plant.

(3) What mankind and the Nuclear Power Plant has caused

The nuclear power plant has brought to us economic affluence in Japan but in return has destroyed our human-like life. Radiation is something we cannot take back anymore with our own hands. Therefore, this leads to the fact that a civilization called "The Nuclear Power Plant" has gone beyond anything human beings have the capacity to control. The accident was caused by something much greater than the subconscious ability of any human being. Didn't the Japanese destroy their human-like lives in return for economic development?

In addition, the nuclear power plant accident proved that we live within the system society. In earlier days, people lived in the system such as production system or distribution system. However, these systems were conducted within a level of reach. When the accident took place, the electricity supply was limited and it affected not only the production system in Japan but the overseas countries production system as well. When one system is destroyed, as a chain, various systems are also destroyed and this creates danger at a larger scale. Furthermore, the danger spreads to a broad area and it becomes difficult for the public to resolve it. The system collapse results in problems that human beings cannot control. The Nuclear Power Plant Accident is a clear example of this situation. We can only keep a close eye on the future of the accident and be fearful about the invisible radiation. This is an out of control system created by mankind.

2. SUGGESTIONGS / IMPLICATIONS

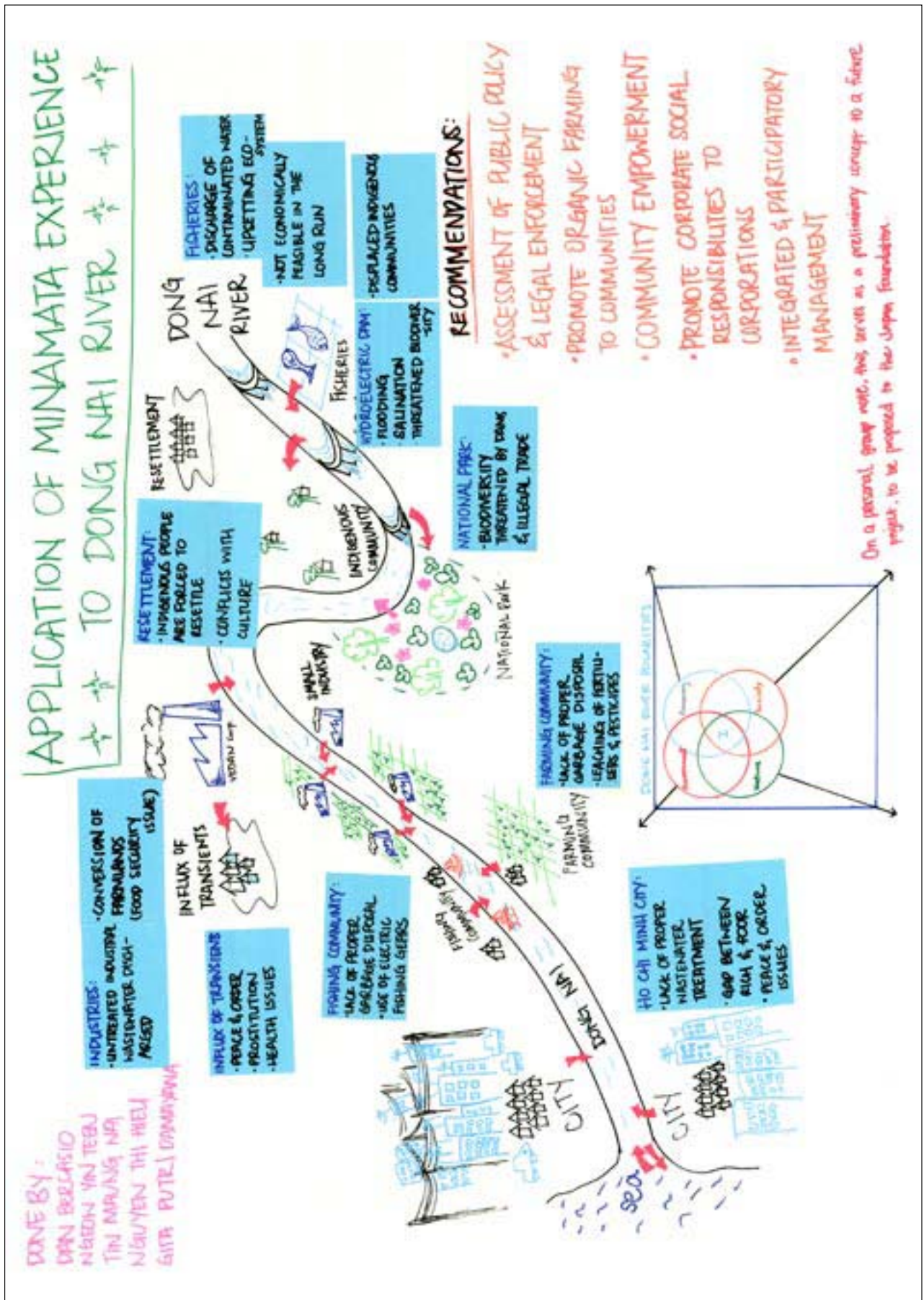
Until now, human beings have existed by playing a role of connecting the past with the future. Culture, civilization and technology that were made by people of the past were handed over to the people of the future. Human activities are what connected the past with the future. History was born there. However, the nuclear power plant destroyed the future by the hands of people.

Mr. Shouzou Tanaka who prosecuted the Ashio Copper Mine case once mentioned "the true civilization does not devastate the mountain or the river, destroy a village or kill human beings." The society we live in is not just for human beings. Nature is in the core of it and we are only part of the nature. We must not forget that the society we live in exists in nature, and has the role of connecting the living with the dead. Economy was supposed to be a tool to live a luxurious life but in time, economy has become only the purpose. These kinds of societies will eliminate cultures or traditions.

Mr. Takashi Uchiyama mentioned "Recovery is rebuilding of climate." The distinctive reconstruction of an area begins by confirming your existence by the unique culture or history in the area and by the approach for the dead or others. An author from the Touhoku area, Kenji Miyazawa, stated that "death" lies in the foundation of "life". When thinking about a sustainable future, I believe forgetting what is at the base of the society we stand on, could lead to a big destruction. To us living in Japan, we need to restore the actual feeling of living actively from the era that we were captured by systems.

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Final Group Presentation





- ### Stakeholders
- Government
 - NGOs
 - Companies (inclusive supply chain)
 - Academic/researchers/scientific community
 - Representatives groups / community organizations
 - Investors
 - The people directly impacted (communities)
- 



Questions & Feedback



Group3 : Cherry, Chanthy, Phet, Grace, and Mery

Unsustainable Land Use




Cherry (Thailand), Chanthy(Cambodia), Phet (Laos), Grace (Singapore), and Mery (New Zealand)
by ThaCaLaSiNz!

Thailand



Cambodia



3

Laos



4

Singapore



5

New Zealand



6

Well Being:

- Livelihoods
- Improve social services
- Culture & Lifestyle Change
- Improve Infrastructure

Nature:

- Ecology Change
- Pollution/Deconstruction
- Effects on Biodiversity

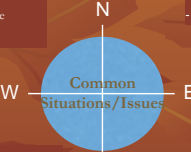
Society:

- Conflict among people, government, private sectors
- Lack of Benefit Sharing
- Culture & Lifestyle Change
- Lack of participation of Ethnic group/Local people

Economic:

- Contribute to Economic growth
- New area for recreation site
- Impact on Tourism

Common Situations/Issues



Well Being:

- Clean Technology
- Benefits of clean environment
- Recreational & Culture

Nature:

- Enforcement/Implementation of Environmental Law
- Institutional Change
- Balance competing interests
- Improve governance

Society:

- Community participation in environmental governance
- Stakeholders Concerning
- Public Consultation
- Education (Community Studies)
- Awareness
- Networking
- Change Agents

Economic:

- Green Growth
- Include non-material values
- CSR
- Inclusive growth (benefit pool)

Solution



Group3 : Cherry, Chanthy, Phet, Grace, and Mery



Lessons/Conclusions

- For Nature, Economy, Society and Well being sections to be successful it requires the participation of all stakeholders:
 - ✓ Individuals
 - ✓ Community
 - ✓ Private Sector
 - ✓ Government
- Very Different countries (Developed/Developing, Industrial/Agricultural) share similar environmental & sustainability challenges
- Key to success is 'Balance between Nature Economic Society & Well being.' You cannot prioritize just one; you need to promote all sections for a prosperous country



Solid waste problem





Ms. KAUR, INDIA



Mr. DONG, THAILAND



Ms. KIM, S.KOREA



Ms. NYEIN

Solid waste problem
WASTE ?

- * A material, that is no longer useful to the possessor
- * A Misplaced Resource
- * Right Material at wrong place, in wrong form in wrong quantity and at wrong time




Solid waste problem
Solid waste

Solid waste includes household garbage, street sweeping, construction and demolition debris, sanitation residues, trade and industrial refuse and bio-medical solid waste (Central Pollution Control Board, 2000).



Environmental Impacts of Solid waste




Solid waste problem
Biggest challenges

- The management of solid waste is one of the biggest challenges world is facing.



The status of Solid waste




India

Korea

The status of Solid waste



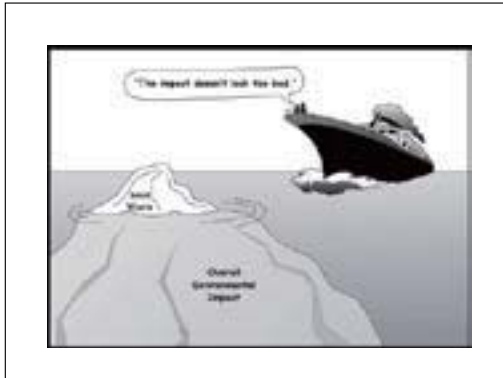

Myanmar

Thailand

Quantity of Solid waste

Country	Urban Waste generation in 1995 (tonnes/day)	Predicted Urban Waste Generation 2025 (tonnes/day)
India (Low Income Country)	114,576	440,460
Myanmar (Low Income Country)	5,482	21,455
Thailand (Middle Income Country)	12,804	43,166
Japan (High Income Country)	142,818	134,210
Korea (High Income Country)	58,041	71,362

Source: United Nations, 1995



Solid waste problem in India

Generation of Solid waste

- As per estimates, **115000 MT** of solid waste is generated daily in India.
- The increase is about **5% annually**. Per capita waste generation in cities varies from **0.2 kg to 0.6 Kg per day** depending upon the size of population.
- Per capita waste generation is **increasing by about 1.3% per year**. With growth of urban population ranging between **3 to 3.5% per annum**, the annual increase in overall quantity of solid waste is assessed at about **5%** (Department of Economic Affairs, 2009).

Management of waste

- Urban Local Bodies (ULBs) spend about **Rs. 500 to Rs.1500 per ton** on solid waste collection, transportation, treatment and disposal. However, hardly any amount is spent on scientific disposal of waste.

Solid waste problem in India

Solid Waste Management

Objective

To reduce the quantity of solid waste disposed off on land by recovery of materials and energy from solid waste in a cost effective and environment friendly manner.

Components

Three basic components namely, collection, transportation and disposal.

Solid waste problem in India

Solid Waste Management

Technologies available for processing, treatment and disposal of waste:

- **Incineration:** Incineration is a method, where by the waste is 'burnt' or combusted under controlled conditions.
- **Anaerobic digestion:** Anaerobic digestion leads to the production of carbon dioxide and methane.
- **Landfill:** Landfill is the term used to describe a properly designed and controlled operation for land disposal of wastes.
- **Waste recovery:** Waste recovery is one of the best way of solving the disposal problem is to change the production process so that less of the noxious wastes are produced

Solid waste problem in India

In all the countries, mostly we use **pesticides** which are **harmful to environment**. We can opt for **environmental friendly compost, vermicompost**.

Composting: This process uses microorganisms to degrade the waste organic matter. The main steps are bed preparation, digestion, curing, finishing. The compost can be used as fertilizer

Vermicomposting: involves the use of earthworms to convert biodegradable solid waste into a useful product (vermicast), as a unique position in the domain of environmental engineering: it is the only pollution control bioprocess which has a multicellular animal as the main bioagent (Abbasi *et al.*, 2009).

Solid waste problem in India

Termigradation

At Centre for Pollution Control and Environmental Engineering (CPEE), Pondicherry University, *Prof. S.A.Abbasi* and *Dr.S.Gajalakshmi* have recently introduced the concept of termigradation as the basis of a new solid waste management technology.

It aims at developing a new technology with which hard to biodegrade waste especially ligninous biowastes - which resist composting, vermicomposting and aerobic/anaerobic digestion can be handled.

Solid waste problem in India

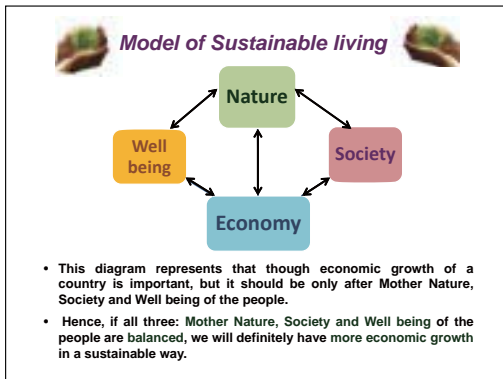
Why termigradation?

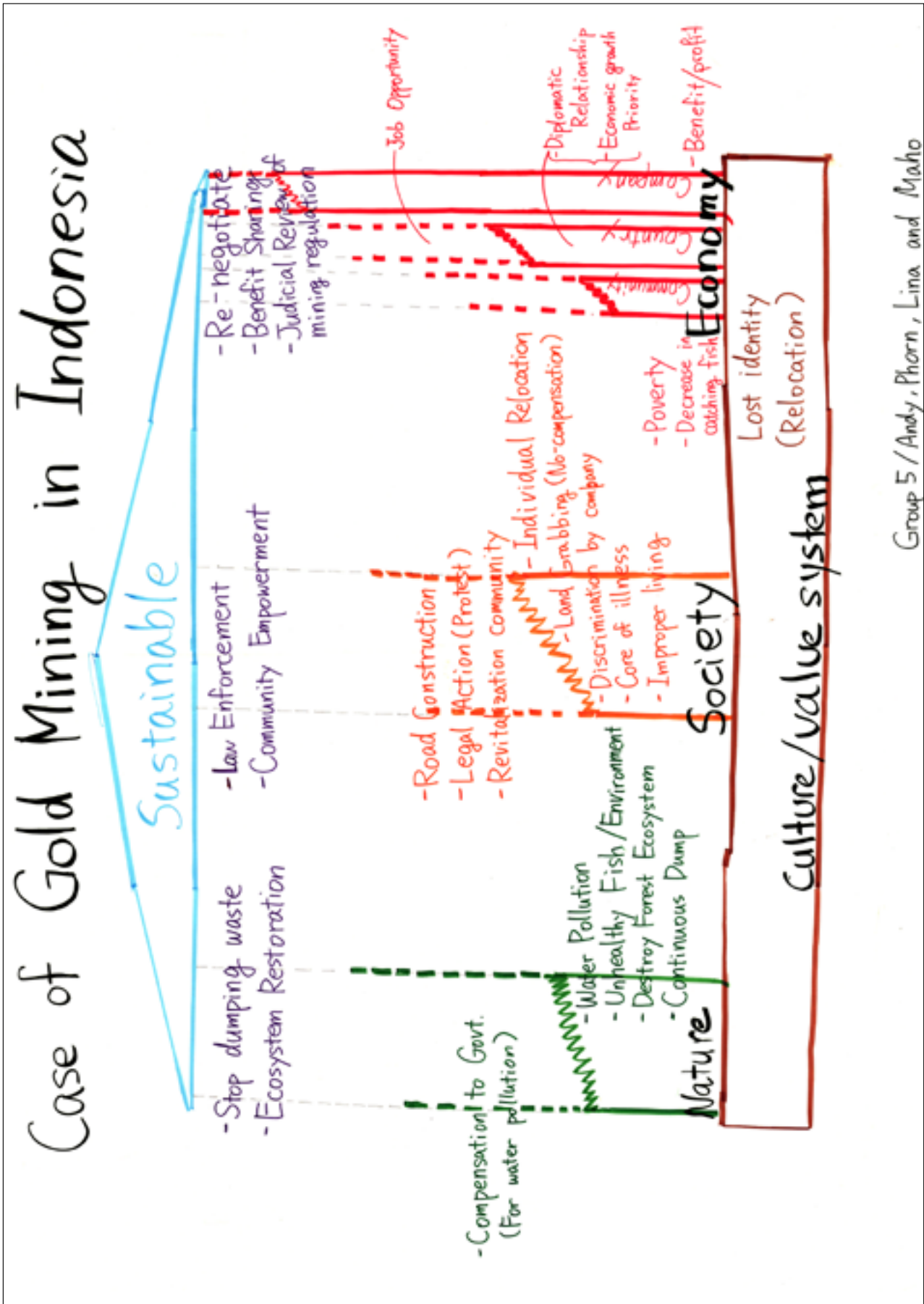
- Most of the biodegradable solid waste such as MSW (municipal solid waste) and weeds like *Ipomoea* consists of appreciable portion of ligninous and other 'hard' substances which defy composting and vermicomposting inspite of being organic in nature.
- The attempts to address this problem have led us to explore termites as bioagents for solid waste management

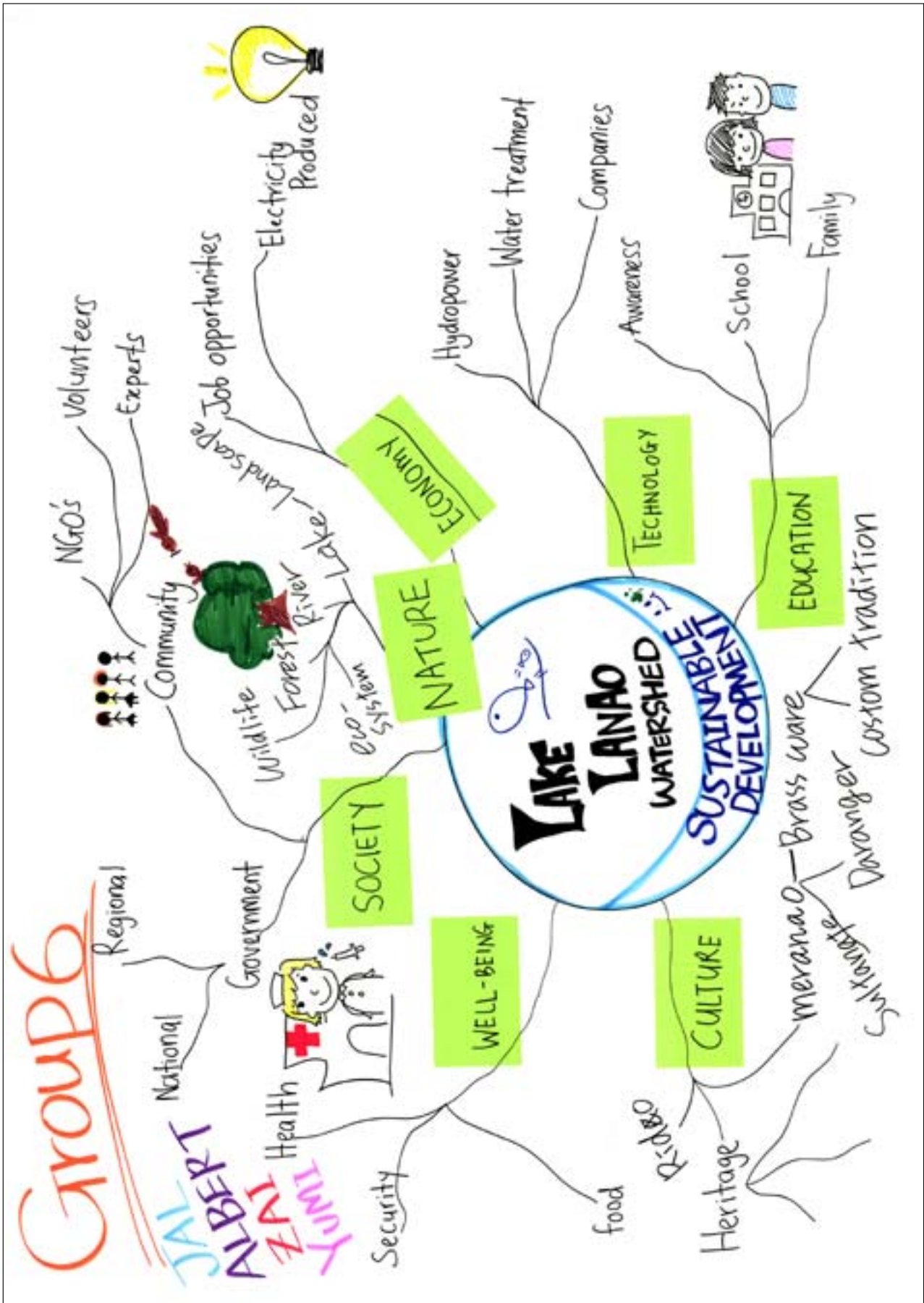
Solid waste problem in India

Unique attributes of termites which make them potential candidates for bio processing of solid waste

- The unique capability of most of the termite species to **ingest and then digest lignin**
- The ability of termites to **'grind down'** even the kind of **hard biowaste** which defies composting and/or vermicomposting
- The potentially very **high rate of termite reproduction** when feed is made available close to termitaria as also the animal's voracious appetite.



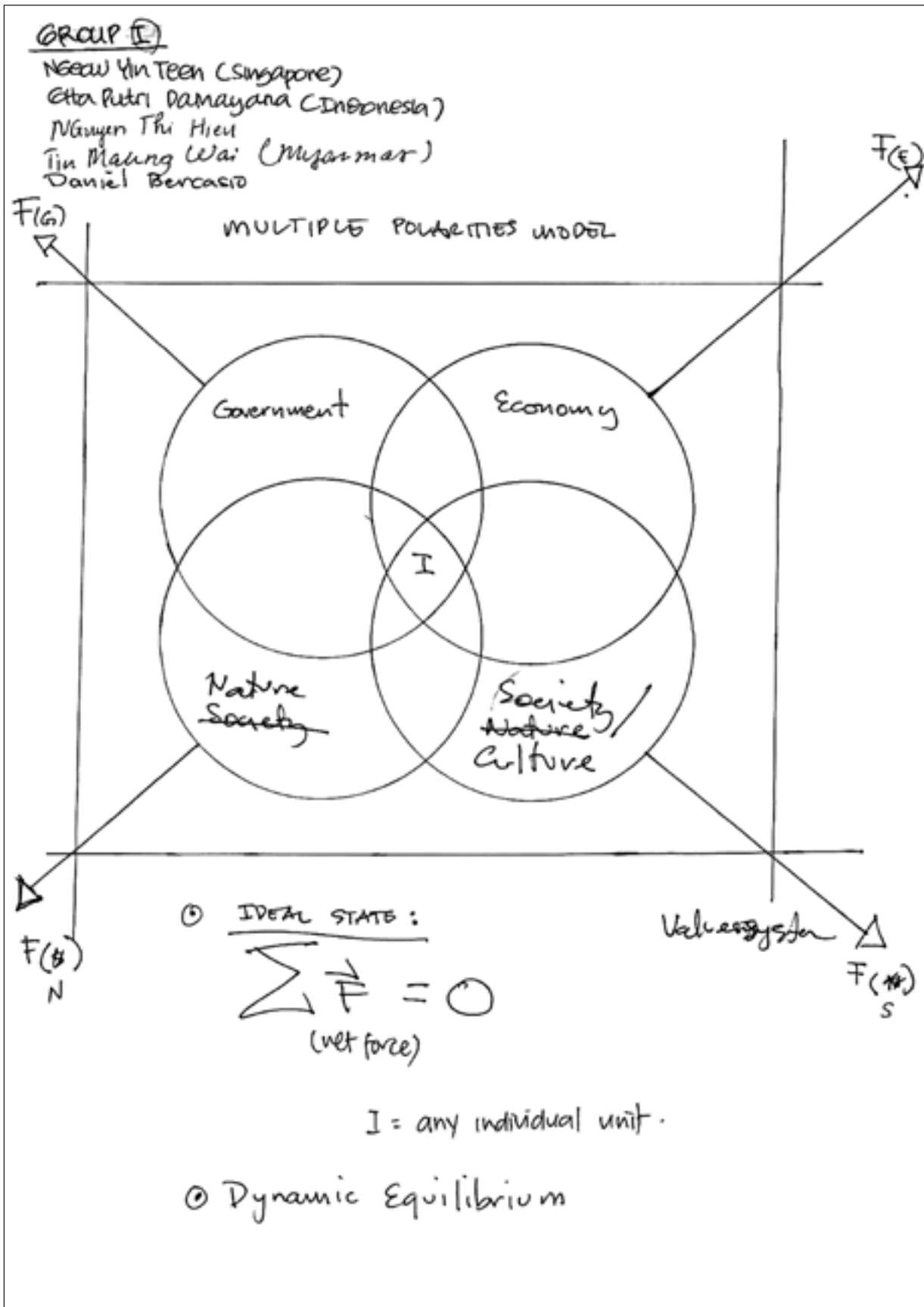


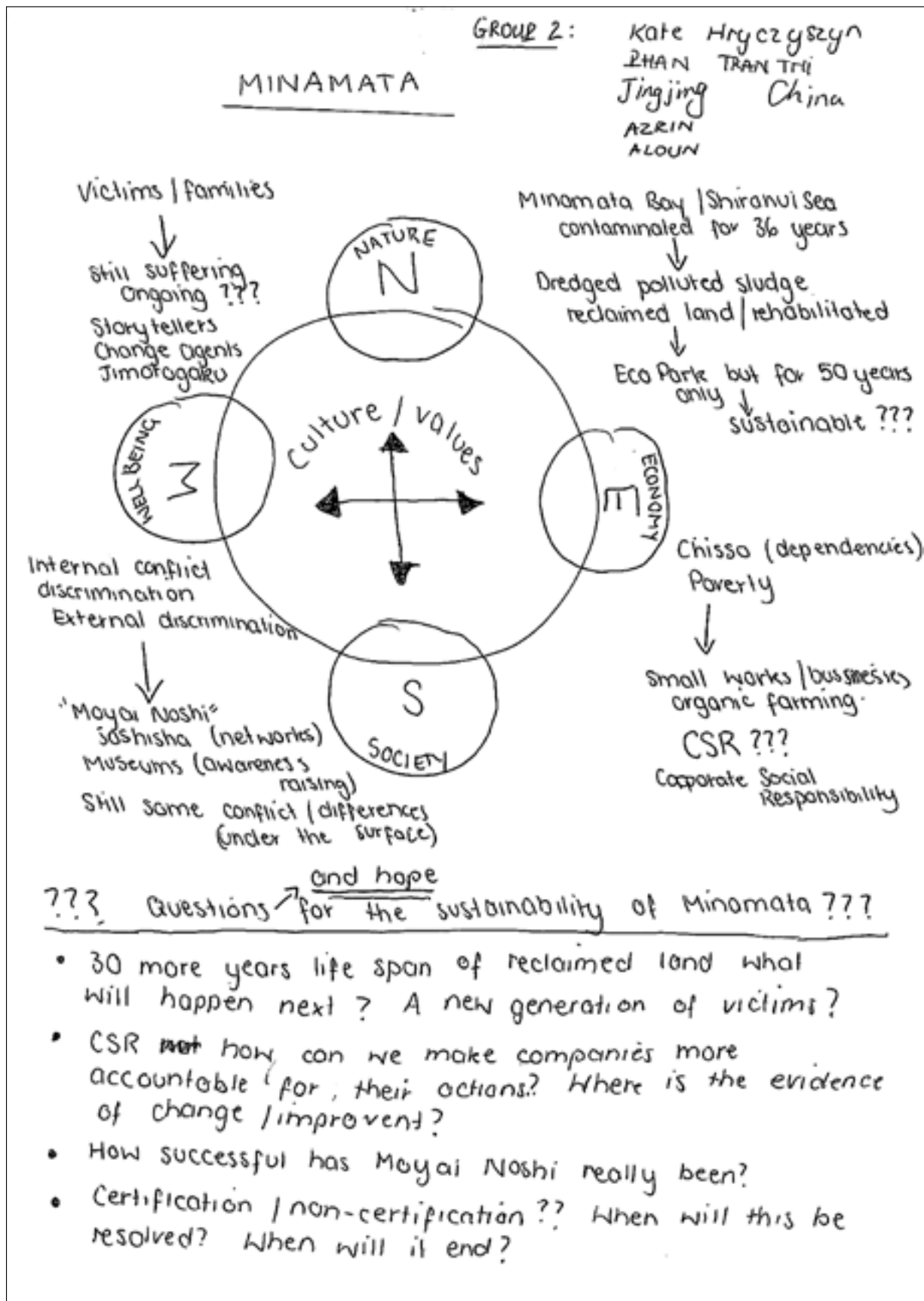




Minamata Case Study Analysis

Group1 : Dan,Teen, Maung, Hieu, and Gita





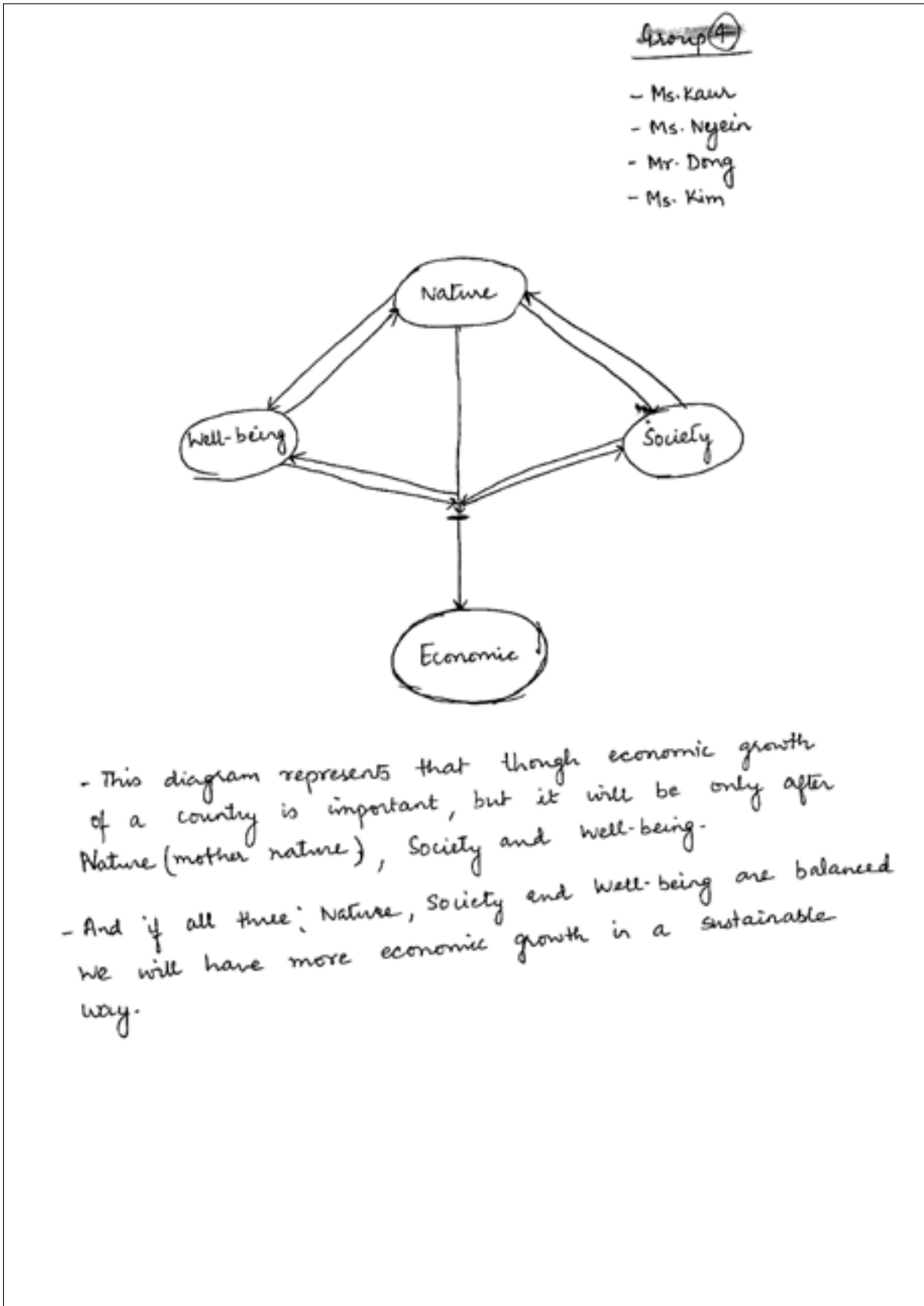
Problem definition

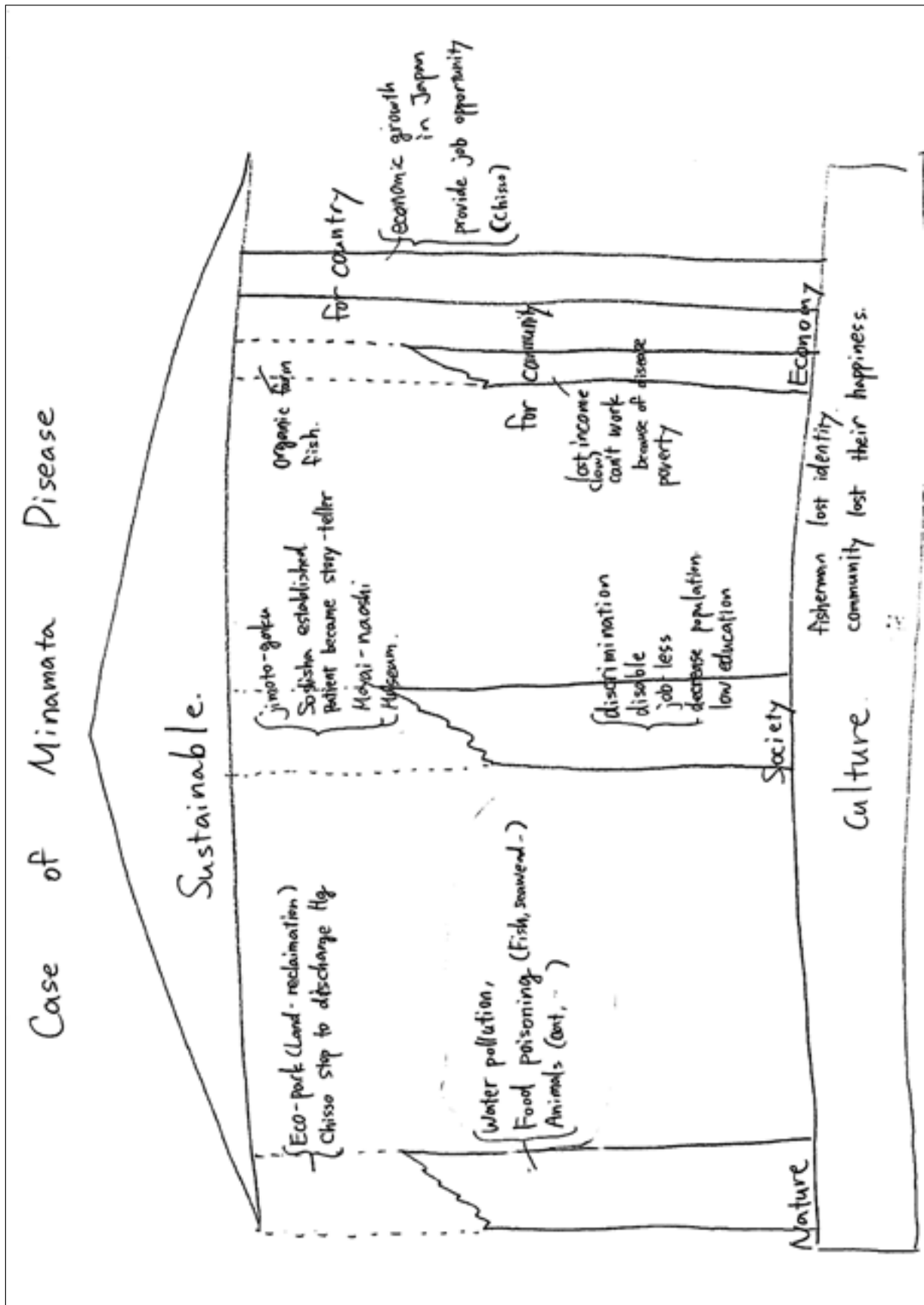
	For Chisso:	People:	Govt:
Nature	<ul style="list-style-type: none"> • Pollution 	<ul style="list-style-type: none"> • Damage to Fisheries from pollution • Food chain disrupted & contaminated • Ecological damage 	<ul style="list-style-type: none"> • Part No policies exist to protect the natural environment • Pollution laws enforced in Tokyo in Minami
Health/Wellbeing	<ul style="list-style-type: none"> • Compensation of patients 	<ul style="list-style-type: none"> • Minamata disease acute & less severe • Psychological suffering 	<ul style="list-style-type: none"> • Delay recognition of patients
Economy	<ul style="list-style-type: none"> • Sustain business to continue production • Fiscal risk if they are held accountable. 	<ul style="list-style-type: none"> • Loss of income & livelihoods from fishing • Potential loss of livelihoods if Chisso affected • Patients lose jobs & income 	<ul style="list-style-type: none"> • Needs Chisso for Japan's economic prosperity • Cost of taking care of & compensation of patients
Society	<ul style="list-style-type: none"> • A lot of people are dependent on Chisso for employment. • No corporate social responsibility 	<ul style="list-style-type: none"> • Discrimination & isolation of patients • Conflict between ppl who support Chisso & who support patients • People voiceless • Discrimination of Minamata by Japan 	<ul style="list-style-type: none"> • Govt cares more about Chisso than people • Govt did not work to establish cause of the disease or implement risk management

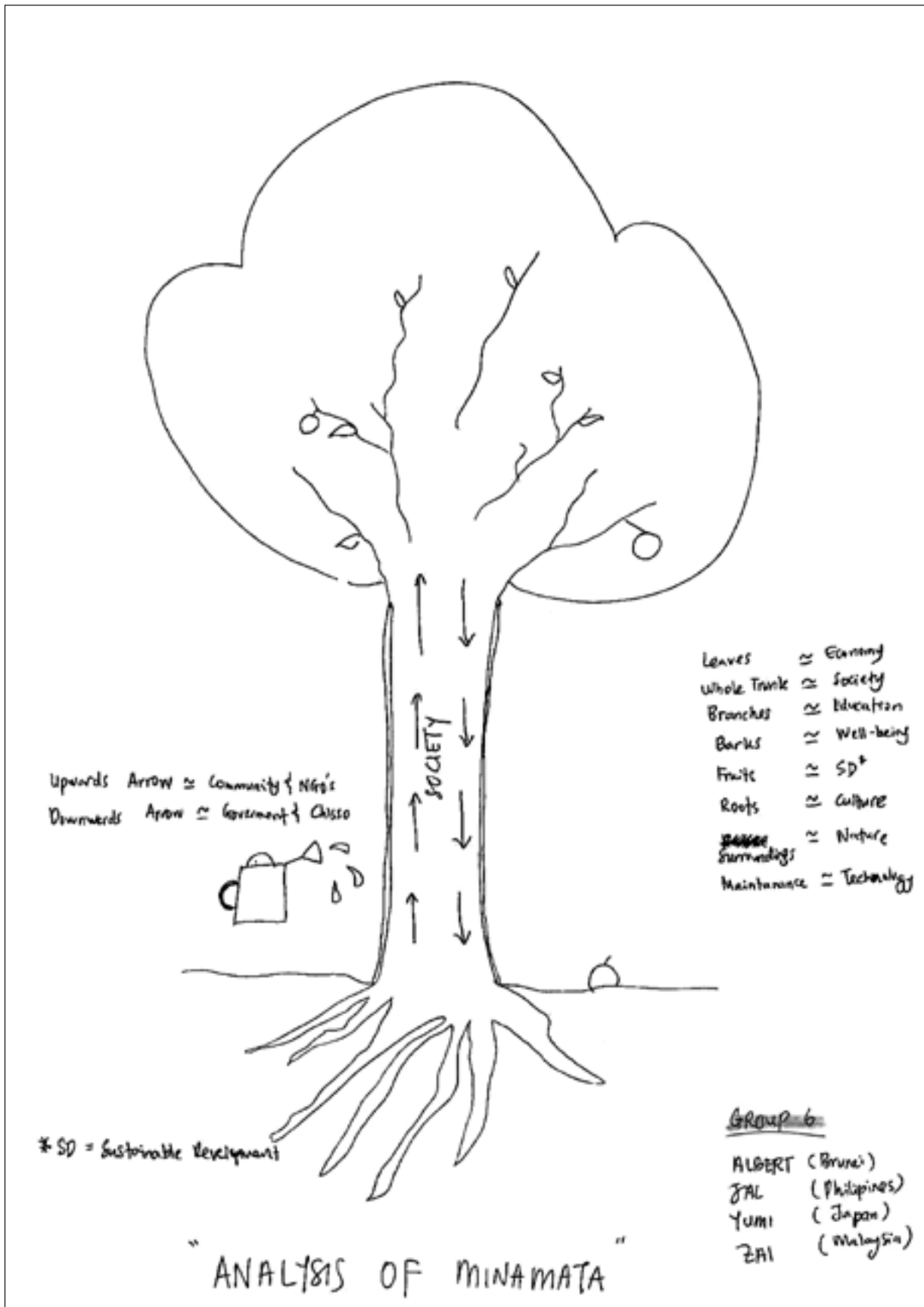
hypothesis:
~~conclusion:~~

Group 3:

1. Chanthly
2. Jerry
- 3 - Grace
- 4 - Mery
- 5 - Phet







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Photographs



Making new friends



Drawing figures during the keynote lecture



Welcome dinner at Shibuya



A bit nervous at the beginning



Approaching Soshisha for the orientation



Tooth brushing activity at Eco-Net Minamata



Exploring metropolitan Tokyo



Handmade soaps



Getting to know each other while travelling



Tooth brushing activity



The sea off the Eco Park



Delicious lunch which containers are reused



Enjoying the scenery of the neighborhood



Modo fishing village with wild marine lives



God of Ebisu in Modo village



Smelling the nature of Okawa village



An old school building turning into a center for *Jimoto-gaku*



Having dinner at Mr. Yoshimoto's



Persimmon in hands during *Jimoto-gaku* fieldwork



Taking ferry to Amakusa



The memorial cenotaph for the victims



Magnificent view from Okawa village



Feeling sad to leave Minamata



Learning a bit of Japanese history in Kumamoto



A cup of green tea with sweets



Certificates given at the end of the program



The subway station where small adventures started



Just like Japanese ladies!



Final shot at the farewell reception



Under the trees at Kumamoto Castle



Staying at Japanese style inn

Photos by

- Dan R. Bercasio
- Sujane Kamparit
- Zaimastutra Binti Ibrahim
- Yumiko Shimozato
- Nguyen Thi Hieu
- The Japan Foundation



國際交流基金



This report is made from recycled paper and soy ink.