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the Education, Science and Technology and Culture of Developing
Countries in the Asia-Pacific Region

Basic Study for Building a "Broader ESD Model" for Developing Countries with Creation and Dissemination of Related Multimedia Materials

Project Report

University of the Sacred Heart, Tokyo

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Yoshiyuki Nagata (Ed.)
University of the Sacred Heart
4-3-1 Hiroo Shibuya-ku Tokyo Japan 150-8938
TEL：+81-3-3407-5914
E-mail：yoshy@pobox.com

＊The report and short films on qualitative education in Xieng Khouang Province, Lao PDR, can be accessed at the following URL: http://www.u-sacred-heart.ac.jp/nagata/laos-oda/index.html

The authors also would like to extend special gratitude to the author of the concept paper of ‘Compass Schools’ who kindly allowed them to include it as part of the Annex of this report.

Foreword

On March 11, 2011, Japanese society experienced an unprecedented earthquake resulting in many casualties. The three overlapping disasters of the great earthquake, huge tsunami and nuclear accident weigh on our lives, and we have to say that the road to recovery will be steep. Of course, we have not lost hope, especially while being helped with financial aid and assistance teams from both inside and outside the country. However, at the same time, the food and energy problems that were exposed by the nuclear accident severely call into question the future sustainability of Japanese society.

We have entered the seventh year of the Decade of Education for Sustainable Development that was proposed by the Japanese government and its people at the World Summit for Sustainable Development (Johannesburg Summit) and ratified by the United Nations General Assembly in 2002. Amidst the international activity concerning sustainable development, Japan is expecting much from the great efforts it has put into pursuing a sustainable future through education. At the University of the Sacred Heart, Tokyo as well, led by assistant professor Yoshiyuki Nagata of the Education Department, we have been consistently implementing such activities over the years. Beginning with the International Workshops and Symposium: Holistic Approaches towards Education for Susutainable Development (ESD) Nurturing “Connectedness” in Asia and the Pacific in an Era of Globalization in 2007, from the following year, we implemented study tours on three occasions to learn about outstanding examples of ESD in Southeast Asia, South Asia, and Australia. In 2010, we invited Mr. Sombath Somphone, winner of the Magsaysay Award, well-known expert on ESD, and director of the NGO PADETC (Participatory Education and Development Center), to the university. He gave public lectures on ESD and observed ESD activities across Japan. In the same year, we held our fourth study tour in Xiang Khouang Province in Laos in collaboration with PADETC. This report stands as a culmination of this series of efforts and has received cooperation from the Laos National Commission for UNESCO, the Education Ministry of Laos, the education office in Xiang Khouang Province, and PADETC. It is also an official report of results from the FY10 Official Development Assistance Grants for UNESCO Activities 'Exchange and Cooperation Programmes for Promotion and Development of the Education, Science and Technology and Culture of Developing Countries in the Asia-Pacific Region'.

The educational philosophy of the University of the Sacred Heart aims at learning from the Heart of Christ that unique love which he shows to each person. Inspired by this love, students will seriously pursue the studies they have chosen and will deepen their involvement with the world as a result of their learning. Under this philosophical foundation

of the school, which has also been termed the 'Seishin Spirit', one of the educational goals espoused is 'to develop human beings who have a sense of their own identity and, at the same time, a global awareness that will enable them to become involved in important events and issues with a broad perspective, sensitivity, flexibility, and the practical ability to put the awareness into action'. The university also advocates 'developing human beings who have the powers of thinking and sound judgment to respond to a rapidly changing world and equipping them with the verbal and intellectual abilities necessary to be deeply engaged, not only in the world of today, but also in shaping the future'.

This international cooperation project was the most valuable opportunity for this kind of 'Seishin spirit' to ferment. The survey team, in which graduate students were the central participants, truly learned many things by participating in the in-country workshop and interviews in the villages. And this was made possible by the cooperation of our partners from the organizations above.

This report document includes a report of the field survey in Xiang Khouang Province as well as reports concerning sustainable communities in Thailand and India. We hope that you will use this in conjunction with the leaflet called 'Ecology of Learning' as well as the DVD on the theme of educational quality.

Lastly, these project deliverables would not have been realized but for those involved in education in Xiang Khouang Province and the enthusiasm and superior expertise of PADETC. It is truly unfortunate that we learned that Mr. Somchay Mouavanga, who was the director of education in Xiang Khouang Province just prior to the survey, passed away. I would like to use this space to express our condolences. In addition, to everyone in the Laos Ministry of Education and National Commission for UNESCO who showed us such great understanding and cooperation, and to those involved with education in Xiang Khouang Province and the youth volunteers who participated in the survey, and to the PADETC staff and most of all Mr. Somphone, we thank you from our hearts.

We hope that this report and the leaflet will help to build a 'Broader ESD Model', which has been the ultimate goal of this project. As mentioned at the beginning, Japan is now in the midst of a difficult situation. In order to contribute even a little bit to the realization of a sustainable society, I note here that we will nonetheless continue our efforts, making use of the messages contained in this report.

Heiji Teranaka

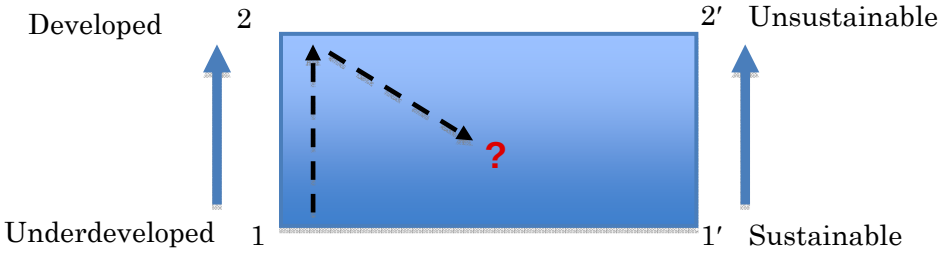
President, University of the Sacred Heart, Tokyo

Preface

It has been a rather long time since the phrases 'sustainable future' and 'sustainable development' have come into use by the general public. Since World War II, multiple global conferences have been held concerning the environment and development or environmental education. Particularly since 1992's United Nations Conference on Environment and Development (the 'Earth Summit') and 1997's International Conference on Environment and Society (the 'Thessaloniki Conference'), the concepts of 'sustainable development' and 'sustainability' have appeared frequently on the international stage. At the World Summit on Sustainable Development in 2002, the United Nations Decade on Education for Sustainable Development (DESD) was even launched as a United Nations flagship program. Presently, under the banner of ESD ('Education for Sustainable Development', or 'Sustainable Development Education'), efforts to promote a sustainable future are being implemented in countries across the world.

Developing countries, however, have generally been passive towards environmental preservation and sustainable development, reasoning that this curtails economic development. Thus, the task of mobilizing human and other resources around environmental education and education for sustainable development is being carried out mainly by the advanced industrialized countries. The assertions of advanced industrialized countries that development should be restrained are in tension with the views of developing countries, which would like to pursue efforts towards sustainability once they have benefited from the attainment of a certain level of development and prosperity. It is a known fact that this is a point of frequent contention at international conferences concerning the environment or development.

One can illustrate the views of the two sides concerning development via graphic below. The graphic is based on one presented during a speech by Kartikeya Sarabhai, director of the Centre for Environment Education (CEE) in India. CEE is an organisation that promotes environmental education and education for sustainable development, principally in South Asia.



In the chart above, the usual path of development for countries and societies is clearly shown. The level of development of countries and societies is represented on the left side of the square, while the right side shows the sustainability of the natural environment in those countries and societies. In sum, the countries referred to as 'least-developed countries' pursue economic and social development from point 1 to point 2. However, as they pursue this development, once sustainable societies become unsustainable (for example, in terms of agriculture), and move from point 1' to 2'. Japan following World War II is the archetypal example of a country that experienced sudden, rapid economic growth and then faced the problem of industrial pollution.

Once many countries reach point 2, however, they discover the preciousness of the environment, want a sustainable society, and become conscious of 1'. Nonetheless, they aim to reach 1' without lowering the comfortable lifestyles they have achieved, and this generally does not go very well. One can probably say that the situation in many advanced industrialized countries is that of being lost on the route from 2 to 1'.

There are probably many developing countries that first aim to go from 1 to 2, and then think about the direction to 1'. However, if we wait for every country to find its way via this route, there will not be enough earths – even if there were several – to bear the continuing destruction of the environment. What should we do?

This research project arose from the desire to forge even a small opening for addressing this global issue. For our small university research team, the issue presented such a high wall of difficulty that we could think of nothing else but to challenge ourselves to learn with humility from the wisdom and knowledge of leaders in the field. People like Vandana Shiva, who has promoted alternative development in Asia for many years, are included in this, and – from a theoretical standpoint – we referred to the 'Compass' method developed by the AtKisson Group. The 'Compass' method is a tool for promoting balanced development through focusing on the four aspects of environment, economy, society and well-being. (For details, please refer to the main part of this report.)

As a core element of this research project, the writers were lucky to be able to visit the offices of Systainability Asia in Bangkok. This organization is engaged in promoting use of the Compass in the Asian region. One of the topics that came up in our conversations with the director of this organisation, Robert Steele, was the tale of Cassandra in Greek mythology.

Cassandra was the beautiful youngest daughter of the last king of the city of Troy in ancient Greece. The person who fell in love with her good looks was none other than Apollo, the sun god. However, Cassandra could not accept the love of Apollo. Apollo promised Cassandra that if she loved him that she would gain a special power. The special power was the power to see the future. Although Apollo thought that Cassandra would be able to love him, Cassandra still could not manage to love Apollo and, in the end, suffered from his wrath. The angry Apollo asked Cassandra to give him just one kiss, and then, when she did, he blew a curse into her mouth. The curse was that no one would listen to Cassandra's predictions. As a result, no one listened when Cassandra told the people of Troy that the Grecian army was hidden in the Trojan horse and had come to attack – and Troy was destroyed.

The person who connected the story with environmental issues in the form of 'Cassandra's Dilemma' was Alan AtKesson[1], the founder of the AtKesson Group mentioned earlier. He says that present-day people who are sounding a warning on environmental issues face the same dilemma that Cassandra faced; whether their unappealing predictions are accurate or not, those who deliver the predictions naturally become a target for criticism. If their predictions are accurate, people are visited by catastrophe, and if the predictions are not correct, the public clamors to affix the label of blame. This occurred with Thomas Malthus when he wrote *An Essay on the Principle of Population* and Rachel Carson when she wrote *Silent Spring*.

For humanity which is now at a crossroads between breaking down and not attaining a sustainable future and 'breaking through' towards a sustainable future, it is critical to listen closely to the warning bells of 'Cassandras'. Of course, it is not easy for emerging and developing countries to choose to do other than pursuing 'prosperity' within the competition of the global economy. It is probably the truth that every country wants to address environmental issues earnestly only once they have experienced 'prosperity.'

If one pursues only material wealth, however, this does not necessarily guarantee a higher level of life satisfaction, according to data from international studies such as the World

[1] A. Atkisson. *Believing Cassandra: How to be an optimist in a pessimistist's world.* Chelsea Green. 1999.

Values Survey[2]. Now that we have begun to recognize that people do not become happy solely through economic growth, we need to take a stand. In fact, concrete examples of alternatives ways of development may enable this to become an opportunity for truly thinking about sustainable ways of living.

Innovative communities and schools have demonstrated alternative ways of development. However, many have seemed to 'exist above the clouds', succeeding through the efforts of an incredible individual or organisation. What we need now are ways to create sustainable communities that can be accomplished through ordinary public schools, with ordinary teachers, and with customary amounts of effort. Furthermore, we need active sharing of these examples with the public so that they will spread gradually to broader spheres of life and so that individual citizens can create sustainable local societies through their own participation. Put another way, these would be practices that create local communities realizing the 'Gross National Happiness' (GNH) espoused by the Kingdom of Bhutan and the Sufficiency Economy Philosophy (SEP) of the King of Thailand.

One of the reasons for choosing Xiang Khouang as one of the sites for this project was that we did not aim to 'discover' such practices, but to use the project as an opportunity to spend time cultivating them. In this province, there is abundant nature on the one hand, and development that has been introduced as the result of the investment of foreign capital. This has brought various bad practices into people's lives (please refer to the conclusions of the survey). Thus, an impetus for this research project was the possibility of creating a process for development together with local people – within this unavoidable reality – that would treat social and cultural aspects as well as economic aspects as important, and which would move the whole society forward together.

There is also the position that it is an important mission of education to develop the 'Cassandras' who sound a warning bell for humanity. However, there is 'Cassandra's dilemma.' In other words, it is miserable to be criticized and suffer whether or our predications are right or wrong. It may sound like an evasion, but if people with a connection to education, such as the writers of this report, have a mission, it is likely that of developing citizenship among the next generation – citizenship that entails the sensitivity and logic to listen carefully to the present-day 'Cassandras'. One can say that it is the challenge of ESD to cultivate citizens who have knowledge of sustainability as well as skills, attitudes, spirituality, conceptual ability, and the capacity to take action.

In this project, we have aimed to emphasize methods that enable young people to

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[2] B. Frey and A. Stutzer. *Happiness and Economics: How the Economy and Institutions Affect Human Well-Being.* Princeton Univ. Press. 2002.

gain the skills and ideas necessary for a new era. Thus, we prioritized involving them in the survey and cultivating their learning, and the survey was led by young people themselves. In order to create a sustainable future, one can say the time has come for educators such as ourselves to stop and think not about the adults who have created an unsustainable future but about the youths who will lead a sustainable future.

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with Creation and Dissemination of Related Multimedia Materials
Principal Investigator: Yoshiyuki Nagata,
Associate Professor, University of the Sacred Heart, Tokyo

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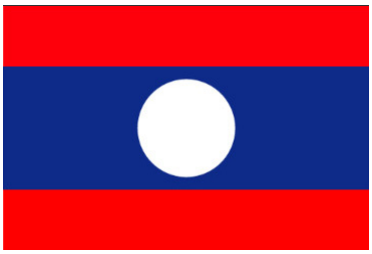
Implementation Country Overview



The red represents blood spilled in the cause of freedom and independence, the white circle represents peace and the prospect of a glorious future, and the blue represents the prosperity of the nation and the Mekong River.

Official Country Name: Lao People's Democratic Republic

National Anthem: Pheng Xat Lao

Capital: Vientiane

Population: 6,120,000 (Lao Statistics Bureau, 2009)

Area: 240,000 square kilometres

Ethnic Composition: In addition to the lowland Lao ethnicity (60%), 49 different ethnic groups

Religions: Buddhist (approx. 90%)

Official Language: Lao

Currency: The kip (bills only; coins are not used)

History: In 1353, the country was unified as the Kingdom of Lan Xang.

In 1899, it was incorporated into French Indochina.

In 1949, its independence was recognized by France within the French Union.

In 1953, gained complete independence from France via treaty.

Following that, there were repeated civil wars, but the "Agreement on the Restoration of Peace and National Reconciliation in Laos" was signed in 1973.

The Lao People's Democratic Republic was established in 1975.

Political System: People's Democratic Republic

Ruler: His Excellency Choummaly Sayasone

Legislative Body: National Assembly (One-Party)

Laos is located in Southeast Asia and borders Thailand, Vietnam, Myanmar, Cambodia, and China. It is the only landlocked country in Southeast Asia. The capital Vientiane is the largest city in Laos and is located alongside the Mekong River. It was established as a city in the 16th century by King Setthathirat and is currently the center of politics and economy and the main gateway to the country. There are many older buildings from the French colonial period, tree-lined streets, and Buddhist temples, and one can see the blending of Asian and Western cultures. The country as a whole is blessed with natural resources, and 80% of the laboring population is engaged in agriculture (rice farming, lumber, growing vegetables, etc.). Farming and lumber are the country's main industries. Recently, deforestation due to overcutting of lumber has become severe. According to the Lao Ministry of Agriculture and Forestry, forests that used to cover 70% of the country's area now cover only 45% of it.

Laos was ranked 122nd out of 169 countries on the Human Development Indicators[1] published by the United Nations Development Programme (UNDP) in 2010. The literacy rate was 72.7%, which showed no change from 2005. The net primary enrolment rate of boys and girls in primary education was 88%, with the rate for girls at 82%. However, the primary education completion rate (through the 5th grade) stalls out at 64%. The secondary education net enrolment rate is 38% for boys and 32% for girls, and is less than half of the primary school net enrolment rate. Contributing to the low primary education completion rate of 64% are things such as children dropping out to work for their households and repetition of grades. From this data, one can see an education gap between boys and girls. However, if one looks at the gap among ethnic groups, the gap is even more pronounced. The situation of girls from mountain ethnic groups such as the Hmong and Yao as well as those who are of Chinese or Tibetan ethnicity is the most severe. The literacy rate of Kho girls who are of Chinese and Tibetan ancestry is 0.7% and if one compares this with the highest literacy rate of 84%, which is for Lao boys, one can see that there are educational disparities based on gender and ethnicity.

If one looks at the economy, Laos has experienced remarkable economic growth in recent years. The growth rate of its GDP in 2009 was 7.6%, which ranked it ninth among 182 countries and demonstrated a great leap forward. However, because the per capita GDP is extremely low at $916 (2009), one cannot say that people live "abundant" lives economically. The economic growth in Laos since the 1980s appears

[1] This is calculated based on per capita GDP, average life expectancy, literacy rate, and school enrolment rate. This is a human development indicator that is not only based on economic aspects, but on whether human beings have the fundamental abilities necessary for their capacities to bloom fully and for them to pursue creative lives.

striking. However, this should be seen in the context of the country changed strategy of involvement with Western and Asian economies through the invitation to foreign companies including those from Japan.

Laos places great value on Buddhist thought and people pay exceptional respect to Buddhist monks. Laos has abundant natural resources and an abundant cultural including World Heritage sites. On the other hand, based on its low literacy rate and economic situation, Laos is an underdeveloped country, and one can say that extricating people from poverty is the country's most important goal.

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Overview of Project Implementation Area (Xieng Khouang Province.)

Geography

Xieng Khouang Province is in the northern part of Laos, 400 kilometres from the capital Vientiane. The provincial government is located in Phonsavan, which borders Vietnam on the east. 90% of the province is mountainous, 8% plains, and 2% farmed fields. The mountains are the source of rivers that play an important role in supporting the agriculture and electrical industries in central Laos. Recently, the area has not only focused on cultivation of sticky rice, but also the raising of livestock such as cows, and this has become an important source of income. According to the 2005 National Census, the province of Xieng Khouang had 230,000 residents and, of those, 140,000 were female. The population growth rate was 1.4% and average life expectancy was 61. The province is known for its large number of ethnic minorities, and the percentages are 44.5% Lao and, following that, 38.4% Hmong, and 8.1% Kham and other ethnicities.

Xieng Khouang Province is also the base for visiting the beautiful and famous "Plain of Jars" where megalithic jars are scattered across the landscape. It remains an unsolved mystery as to why there are so many jars and why they were made. The Lao Civil War began in Xieng Khouang Province in the mid-1960s, and the many craters on the Plain of Jars were caused by bombs dropped by the U.S. Army. There are many unexploded bombs that have not yet been removed, and countries across the world are providing assistance for removal efforts. However, there remain many victims of these bombs each year.

Photo: Lots of Jars are located in Xieng Khouang province

Economy

In 2006, GDP of Xieng Khouang Province was $98,500,000. Breaking down the GDP, more than half is composed of agriculture, which amounts to $5,420, 000 and is 55% of the total. Based on the fact that 80% of the labor force is involved in agriculture, one can see that agriculture is the economic foundation of the province and the center of people's daily lives. In addition to agriculture, industry and handicrafts comprise 33% of GDP for the province. Recently, foreign investment in agriculture has

increased in the province. From 2003-2007, 45 multinational companies invested mainly in infrastructure such as agricultural facilities, for a total investment of $24,000,000.

The main provincial exports include lumber, wood products, livestock, rice, and corn. Imports include automobiles and auto parts, building materials, luxury grocery items (e.g. tobacco, alcohol), and clothing.

Culture

Xieng Khouang Province is known as a tourist area, as there are 33 tourist sites and the climate and warmth make it easy to enjoy. The land is also blessed with natural resources such as minerals and grasslands. There are no dams yet, but there is a plan for two to be built by 2015. Once these are built, they will assist by providing over 165 kilowatts of electrical power. However, as a result of this dam construction, the people living in villages downstream from the planned construction area are suffering from a severe lack of water. Thus, the construction is exerted a significant influence on life in villages were many people live subsistence lives.

Unexploded Ordinance

In 1961, in order to prevent the North Vietnamese Army supported by the Soviet Union and China from using the Ho Chi Minh Trail to move south, the United States started a "secret war" in Laos. This was done because 90% of the Ho Chi Minh Trail was built in Laos. When the Vietnam War officially began in March of 1965, the Lao Civil War intensified. It was a secret war because it was impossible for journalists to access the horrible conditions on the frontlines and, therefore, the war remained unknown to the world at large. Even now, there is much unexploded ordinance in Laos; in 2004, of the 17 provinces, 12 were undergoing ordinance removal. There is a great deal of unexploded ordinance in Xieng Khouang Province in particular, with the amount exceeding 9 million pieces.

To close off the Ho Chi Minh Trail, the U.S. established a base at Pha Thi in Laos' north and expanded the war from there. At that time, the U.S. had dropped 3 million bombs and, as a result, most of the land in Laos had become unusable. Because Xieng Khouang Province is located near Vietnam and has many Hmong, it was a place where the fighting was especially severe. The U.S. trained Hmong who lived in the mountains, forming a Hmong special forces group whose goal was to oppose the communist forces also fighting in the mountains. Because the mountain areas were where there was a "fight to the death" to prevent the infiltration of communism, many casualties resulted. There were Hmong who fled the war and headed to refugee camps

in Thailand, but more than 100,000 Hmong died as they fled due to landmines, ambushes, hunger, malaria, and drowning. It is said that in the five years between 1964 and 1969, 75,000 tons of ordinance was dropped in Xieng Khouang Province. Since 1973, over 5,000 people have died from the unexploded ordinance from cluster bombs and many people continud to suffer the burden of disabilities resulting from unintentionally touching unexploded ordinance.

Because the U.S. did not officially declare this war, for the public, it did not exist. However, since many Hmong now live in the U.S., the facts of the war have come out into the open. Hmong even participated in the Iraq War, and on June 18, 2004, that war had its first Hmong casualty. The threat of unexploded ordinance and the tragedy of the Hmong has not ended even today. In Xieng Khouang Province, 38% of the population is Hmong. Because the war was secret, there was no way for them to communicate their tragedy.

Photo: UXO found in Xieng Khouang Province

Education

Xieng Khouang Province is one of the provinces of Laos that receives much international aid. This is because the province has many members of the Hmong ethnic minority and there are many projects to improve the educational environment. It is known that in Laos there is a severe gap in education between ethnic minorities and people of the Lao ethnicity. According to an Asian Development Bank report, in 4000 villages in Laos in which ethnic minorities live, elementary schools have not yet been constructed. The north of Laos, Xieng Khouang Province included, can be considered a concrete example of this. In addition, because villages are spread out in mountainous areas including Xieng Khouang Province, depending on the location of the village, the distance to a school may be great and it may be difficult for children in the lower grades to have the physical ability to travel to school. According to the Lao PDR Ministry of Education, the education budget for Xieng Khouang Province in 2000 was 86,000,000 yen. Schools and school equipment are still lacking, and one can point to this limited education budget for the problem not being solved. There are not a few ethnic minorities who cannot speak the Lao language, but school lessons take place in this language which is supposed to be common across the nation. As a result, for ethnic minorities whose mother tongue is not Lao, just completing a class is difficult. In this

way, one can see that the limited education budget and geographic conditions, as well as at the quality of education, combine to create an education gap across ethnic groups.

Xieng Khouang Province has a warm climate and abundant natural resources and is a lively area of diverse cultures. Recently, as a result of the investment of foreign capital, one can see economic development. However, due to the sudden nature of the development, an issue to watch is how the 'abundance" of Xieng Khouang Province can coexist with this economic development. This is also important for building a society in which all people in the country, including ethnic minorities, are able to receive a high-quality education and are involved in development the nation, in politics and in economic activities.

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Overview of Laos Survey

Survey Goals

We implemented this basic survey research with the goal of developing a foundation for building a 'broader ESD model' for developing countries. What we mean by 'model' is the implementation of sustainable community development that uses multiple schools as a nucleus and that demonstrates concrete ways of pursuing development that keep environment, economy, society and culture in balance, as specified in the ESD International Implementation Scheme. In other words, one can say that the survey does not focus on the conceptual level like philosophies such as Bhutan's Gross National Happiness (GNH) and Thailand's Sufficiency Economy Philosophy (SEP) that are currently drawing attention, but aims at making implementation concrete at the community level.

One of the current obstacles in promoting ESD is the mythology that 'ESD is for the advanced industrialized countries and EFA is for developing countries'. In order to eliminate this bifurcated thinking that can impede development of a sustainable world, we need to focus on good practices within developing countries. Further, rather than case studies of individual schools, we need to direct attention to the creation of community-level models for sustainable development.

In conducting this survey, the University of the Sacred Heart, Tokyo worked with the Laos-based NGO PADETC (Participatory Development Training Centre) as a counterpart. PADETC is an NGO established in 1996 by Sombath Somphone, who was awarded the Ramon Magsaysay Award in 2005. Since its establishment, the organisation has implemented activities including the development of youth who can become leaders in promoting a sustainable future at the community level, village-level agricultural development, projects to improve educational quality, and media-based public education activities.

Through discussion with PADETC, which has a history of work within Laos, we decided to establish the location for the survey in Xiang Khouang Province, which is located about 200 kilometers northeast of Vientiane, the capital of Laos. While this province enjoys an abundant natural environment, recently the inflow of foreign capital has made it an area where there has been a rapid destruction of the foundation of traditional lifestyles. Through the survey, we aimed to clarify trends towards both sustainability and unsustainability in Xiang Khouang Province and draw out issues related to realizing a greater degree of sustainable development at the community level.

The Survey's Approach

Through this participatory survey focused on building a 'broader ESD model' for developing countries within the Asia-Pacific region, we aimed to clarify the function of school-based education and the role of the community in contributing to the development of sustainable communities. The approach centred on a participatory survey in which students interviewed villagers; in addition, maps were made of the villages.

The implementers of the survey were 32 first- and second-year students at Phonsavan High School in Xiang Khouang Province. The students were residents of Xiang Khouang Province and were also youth volunteers at PADETC. This survey, which was also designed to develop leadership among the youth, had the 32 students divided into groups, and the groups visited six different villages to interview villagers about sustainable development as well as analyze the results. Rather than adults such as researchers or teachers, the students became the survey leaders, experiencing the survey process and taking a role in community development.

The interview survey of the villagers was the centre of the participatory survey, and the 'Compass' method developed by Systainability Asia was used for this purpose. The reason for selecting 'Compass' was that it is a method that approaches development within society holistically centred around four facets of the formation of a sustainable society – in other words, environment, society, economy, and well-being – and this fits with the main goals mentioned earlier. However, we also took into account issues such as the cultural situation of the survey area and the capacity of the students; thus, we altered the wording of some of the four facets with which villagers and students were less familiar ('environment', 'society', and 'well-being'). In implementing the survey, the 'Compass' method was partially revised so that 'environment' was replaced by 'nature', 'society' with 'culture' and 'well-being' with 'happiness'. In addition, because the 'Compass' method represented a change from usual survey research methods, a workshop was held before the survey so that students could receive training in the use of the method for the survey. During this training, the facilitators had a common understanding of the 'Compass', but for the students actually implementing the survey, the word 'Compass' was not used, and the students were trained in 'survey and analysis'.

In the analysis of the results, students worked to draw connections between the special characteristics concerning each of the facets – nature, economy, culture, and happiness – and each of the other facets. Yarn was used so that the connections between a special characteristic seen in one facet and another facet could be visualized. The condition in which the connections were visualized was called the 'Wisdom Box'. It

revealed the extent to which the special characteristics of each facet existed in connection with others, demonstrating both community sustainability as well as problems of unsustainability in which the balance of the whole was being destroyed (please refer to documents included for details on the 'Compass' method). The sustainability and issues brought out through the above method were summarized by the students and then presented by the students to the villagers in the form of a 'report of results'.

While conducting the interview survey of the villagers, students also created village maps. As with the 'Wisdom Box', through the creation of the maps, the conditions of the communities could be visualized because the possibilities and issues concerning sustainability were drawn on the maps and recorded. Because we could not record all of the results of the survey using only the 'Compass' method, we incorporated this map-making method. Students drew information that was gleaned through the interview survey on the maps and were able to show the conditions of the villages through illustrations. One of the special characteristics of this survey was that students summarized survey results through both qualitative and quantitative methods.

Survey Content

In this section, we would like to provide an overview of the survey by showing the step-by-step process involved.

(1) Survey location

Dates	Locations
February 23	Pek District: Na-O Village, Ladgone Village
February 25-27	Kham District: Limmouang Village, Hin Village, Longpia Village, Napa Village

(2) Survey Schedule

Date	Content
February 21	Visit to Xiang Khouang Province educational office, greetings, explanation of project overview
February 22	Morning: Visit to Phonsavan High School, opening ceremony Afternoon–Evening: Workshop by PADETC staff (youth volunteer training)
February 23	Field Survey in Pek District: Na-O Village, Ladgone Village

February 24	Morning: Reflection on the previous day's field survey Organisation of information obtained in survey and presentation of results Afternoon: Interview Workshop (Points to watch out for when asking questions, development of question topics, etc.) Repeat visit to village from the prior day, report of survey results to the villagers
February 25	Move to Kham District, separate into four groups for field survey of Limmouang Village, Hin Village, Longpia Village, Napa Village Homestay in village
February 26	Field Survey (gathering information through interviews and other methods), homestay in village
February 27	Continuation of Field Survey (gathering information through interviews and other methods), preparation for presentation to community, presentation, homestay in village
February 28	Move to Phonsavan, feedback and reflection on overall project
March 1	Visit to Xiang Khouang Province educational office, report on survey research

Workshop Using the 'Compass': Youth Volunteer Training

Introduction	・Greetings, Introductions by PADETC staff and students ・Development of ground rules for survey Creation of rules for training. The teachers asked: 'What kinds of things need to be adhered to during today's training?' and 'What points do we need to be careful about?' and the students provided nearly twenty responses. Examples: Have a sense of harmony, put forth effort, stick to the time schedule, have a sense of responsibility, have a sense of empathy, don't use one's cell phone, be diligent, don't become self-centred, have a sense of mutual respect ・Introduction of Xiang Khouang Province The facilitator asked the students what the famous things in Xiang Khouang Province are and what things are representative of the area. In order to pick one response from those offered, the students voted and Tham Piu Cave was selected.

	⇨The training was then implemented using Tham Piu Cave as the subject.  Photo: Voting one topic
Workshop Using the 'Compass' and Tham Piu *Cave*	・Grouping 32 students were divided into four groups. The second-year high school students with prior experience as volunteers were equally distributed to each group. Each group was given the name of 'nature', 'economy', 'culture' or 'happiness'. ・Brainstorming Each group brainstormed on the question: 'What is there at Tham Piu Cave'? in connection with its group name. Brainstorming Example 'Nature': There are many mountains and trees at Tham Piu Cave. There are items used by people to live their lives during the time of the war. 'Economy': Commerce and tourism are popular. Traditional items are being sold. 'Culture': People who believe in Buddhism often go there. Within the cave there are many Buddha statues 'Happiness': People lived there during the war and now the Tham Piu Cave has become a tourist site and has both happy and sad aspects.  Photo: Brainstorming of 'Happiness Group'
Presentation of Brainstorming	・Each group summarized the content of its brainstorming on large sheets of paper and presented in front of the whole group.

Introduction to Methods of Analysis	・Each group was asked to find the three most important points from the content they presented and write them on small pieces of paper and then present them. The three points chosen by the groups 'Nature': Atmosphere, air, sales of traditional products 'Economy': Travel services, villagers engaged in commerce, sales of products 'Culture': Religion (Buddhism, animism), clothing, culture 'Happiness': An important place in the history of Laos, a place to repay for one's regrets, income-generation for villagers ⇨Using the total of 12 topics mentioned, students learn a method of analysis to be done after the survey.
Training in Analysis	・The facilitator directs the students to sit around a large table layout with each group forming one side of a square. ・Three people from each group stand holding small pieces of paper on which are written one of each of the selected three points. ・The students consider whether each one of the content items is connected to others and use yarn to link those that have connections Examples of connections made with yarn 'Culture': 'Culture' and 'Economy' in the villagers' commercial activities 'Nature': 'Sales of traditional products' and 'happiness' as seen in 'income-generation for villagers' 'Economy': 'Villagers engaged in commerce' and 'Happiness' as seen in 'income-generation for villagers' ⇨The items that have a connection are linked with yarn, and the condition in which these connections can be visualized was called 'The Wisdom Box'. Through this process, both sustainability within the village and areas with a tinge of unsustainability can be seen.  Photo: Making 'Wisdom Box'

Discussion of Methods to Maintain Community Sustainability	・Using the item 'Villagers engaged in commerce' from the 'economy' group that had the most yarn connections in the 'Wisdom Box', students considered policies that would preserve sustainability. The facilitator asked the question: 'How should Xiang Khouang Province earn money while preserving Tham Piu Cave?' The students then discussed the question within their groups and presented to one another to share plans. Examples of content presented 'Nature': Preservation of woods, maintenance of the cave, improvement of good tourism services, dissemination of tourism advertisements and income-generation for the community 'Economy': Sales of traditional crafts, sales in other locations, improve the economy while preserving nature, economy and culture 'Culture': Preservation of culture, increase the understanding of Laos' traditional culture among villagers and tourists, create rules for Tham Piu Cave 'Happiness': Improvement of the environment of Tham Piu Cave, preservation of the cultures of Laos, passing down of culture to the next generation, provision of alternative jobs to the villagers instead of jobs connected with deforestation (e.g. jobs related to Tham Piu Cave)  Photo: Having presentation
Workshop in Map-Making	・Each of the groups discussed the necessary information and tools to create maps and then summarized them using poster paper. ・Common map symbols that would be used in drawing the maps were decided based on students' opinions. ・Students were given an explanation by the facilitator of who they should ask to gather information about the geography of the villages.

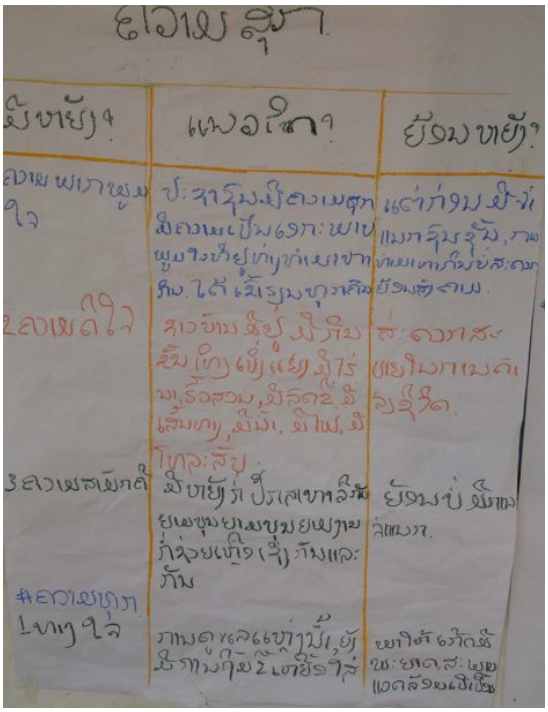
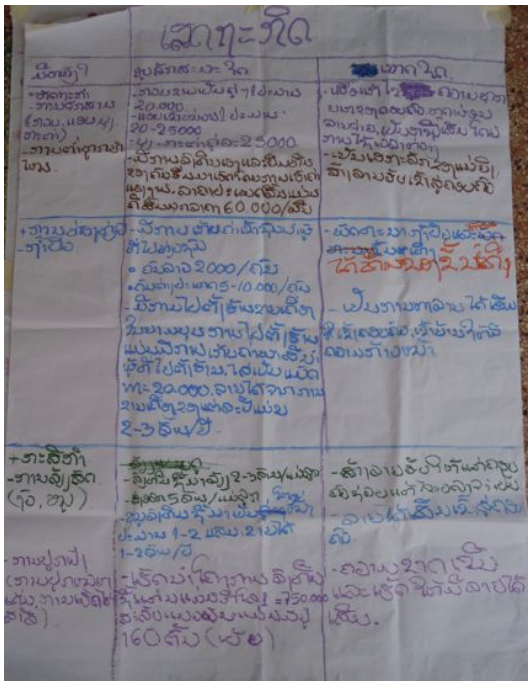
<table>
<tr><td>Method of Analyzing Survey Results</td><td>・The facilitator explained that a matrix would be used to organize the information obtained during the interviews.
・Since the students prepared interview questions based on 'What/ How/Why', the students were instructed to organize their notebooks in the same way, based on What/ How/Why'.
<table>
<tr><td></td><td>Nature</td><td>Culture</td><td>Economy</td><td>Happiness</td></tr>
<tr><td>What (Subject to be observed)</td><td></td><td></td><td></td><td></td></tr>
<tr><td>How (Phenomena occurring)</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Why (Cause)</td><td></td><td></td><td></td><td></td></tr>
</table>
⇒The analysis following the survey was also done using the above chart.</td></tr>
<tr><td>Grouping of Survey Teams</td><td>・From each group – nature, economy, culture, and happiness – one person at a time was brought to the front and groups of four were formed, for a total of eight new groups. Of those, two were in charge of creating the maps.</td></tr>
<tr><td>Development of Questions</td><td>・The facilitator explained that as preparation for the survey two days hence, the person responsible in each group for questions on 'nature', 'economy', 'culture' and 'happiness' should create the questions using 'What/How/Why'.
Example of questions developed by the students
'Nature' : What nature is in the village? Do you catch fish in the river? What do you pick in the woods? How many times a year do you plant rice? Are there tourist spots? How is nature different now than in the past?
'Economy': How do you earn your income? What income do you have other than farming?
'Culture': What religion do people in the village believe in? What kind of traditional culture is there in the village? Are there dishes that are specialties of Xiang Khouang Province?</td></tr>
</table>

	'Happiness': At what times do you feel happy? What thing do you want the most? What is the most difficult thing for you now? How is your daily life?  Photo: Listening to suggestions by facilitator

Field Survey/Analysis of Survey Results

During the survey, the students visited each household and school and interviewed villagers, the village head, and teachers at the village school. In the survey of Kham District, the students experienced homestays at various homes of village residents. Below are details of the survey and analysis.

	Interview Survey	Map-Making
Field Survey	Each group visited households and students interviewed villagers concerning nature, economy, culture and happiness.  Photo: Interview to a villager	Together with the villagers, the students used Google Earth to grasp the overall image of the village, then interviewed the villagers to obtain detailed information for the map.  Photo: Grasping the overall image of the village

Organisation of Information	With the support of the facilitators and teachers, the students organized the information they obtained, summarized the results in a matrix of environment, culture, economy and happiness on sheets of poster paper, and prepared for their presentations.  Photo: Matrix of Happiness of Hin village	The students created maps based on the information they obtained in the survey, organized basic information concerning the village, and prepared for their presentation.  Photo: Matrix of Economy of Longpia village

Matrix of Survey Results

Example: Hin Village in Kham District

Nature

WHAT	HOW	WHY
Ⅰ. Rivers 1) Mat River	he Mat Riv r is a long river, but it is not very wide. In the past, there was a great volume of water, but it is decreasing at present. Compared to the past, the variation in the volume of water has become more severe.	People have started cutting down trees. More people throw garbage into the rivers. Not enough rain falls during the rainy season.
2) Cả River	The Cả River is bigger than the Mat River. It used to be dirty, but the water is now clean.	The reason the river became l an is that the people living upstream stopped throwing garbage in the river.
＊Additional Information	The Honhin River and and Honbua River also flow through the village.	Unknown
Ⅱ. Mountains 1)Hok Mountain	There are large mountains. There are variou pecies of trees. There are many of the Hoku species of tree; however, now the number is decreasing.	As the population h s increased, the number of people who cut down trees has increased.
2)Phoubian Mountain	This is bigger than Hoku Mountain, but the number of trees is decreasing.	Unknown
＊Additional Information	One cannot freely cut down trees on Jar Mountain or Hua Hia Mountain as they are owned by the village. To cut down a tree, one must submit a written request to the village head.	On Hok Mountain and Phou Bia Mountain, one is allowed to cut down trees only when one builds a house. One is not allowed to sell the trees.
Ⅱ.Soil	There is fertile soil. No matter what is planted, it grows well. If Mak Keua are cultivated, the soil becomes fertile.	Unknown
Ⅲ.Weather	Recently, changes the climate have been severe.	This is because the people began to cut down trees. Because the population increased, the volume of trees cut down increased.
＊Additional Information	In 1983 there was a flood and the village was destroyed. The former village was located to the south of the current one.	In the past, tigers lived in the mountains, but they currently do not live there. This is because trees have been cut down and the land has been made into fields.

Economy

WHAT	HOW	WHY
Ⅰ. Agriculture Rice	All of the villagers are farmers. They are producing 450kg per person per year. The water from the Mat River and Cả River are being used.	Not much rain falls, so river water is used to grow rice plants.
Corn	Each family owns one hectare of farmland. Each year there is 866,982,000 kip of income. （Annual per capita income is 11,744,000 kip）	Corn can be sold for a high price, so a high income can be obtained.
Garlic	Garlic can be grown without using chemical fertilizers and using compost. Annual harve t s 400kg per family (providing 6 million kip of income).	This can be cultivated to bring in extra income.
Mak Keua （fruit）	This can be planted at the same time as rice (providing 3 million kip in annual income per family).	By planting Mak Keua, the soil ecomes more fertile and more income can be generated from it.
Bananas	These are grown in mountain areas. There are three harvest periods per year. (They provide 400,000 kip in annual income per family.)	These are cultivated to bring in extra in come.
Ⅱ. Dairy farming, water buffalo, cows	Outside the period for planting rice, water buffalo and cows can be allo ed to graze freely. During the rice-planting period, they are kept in pens. In the village, there are presently 81 head of water buffalo and 28 head of cattle.	They are raised to produce manure. They are eaten at festivals or wedding parties. When there is no money, they can be sold to generate income.
Pigs, ducks, chickens	These can be raised in the area around the home. There are 108 pigs, 300 ducks and 1,605 chickens in the village.	These are eaten in daily life as well as on special days. When there is no money, they can be sold.
Ⅲ. Commerce, small stores	Daily necessities and candy are brought from Phonsavan for sale (500,000 kip in annua income per family).	This provides extra income.
Animals, fish, vegetables	These are so d in Phonsavan, an items sold in Phonsavan could be so d at other places in Kham District.	This provides extra income.

Culture

WHAT	HOW	WHY
Customs of Laos	Buddhist festivals that occur without fail every year (Lao ethnic group) April: Lao New Year September: Buddhist Festival Festivals of the Tai Dam ethnic minority are also held.	They are traditional customs.
Religion	Minority ethnic groups Tai Dam (animism) Kham (animism) Lao (Buddhism) 80% of the people in the village are Buddhist.	Preserve the Buddhist culture that has existed since long ago.
Language and manners	Respect for elders Use of Xiang Khouang dialect	Preserve traditions of Laos. Preserve traditions of Xiang Khouang.
Clothing	Women wear a thin skirt called a *sinh* for work, festivals, and wedding ceremonies.	Preserve traditions
Land with which they have been connected from the distant past	There are two temples. The old temple has only a Buddha and there is no priest. The new temple has one priest. There is a cave in the shape of an animal called *mui*. There is the Plain of Jars.	The old temple has existed for a long time but it is not currently used. The villagers believe that people from long ago drank wine from the giant vessels on the Plain of Jar

Happiness

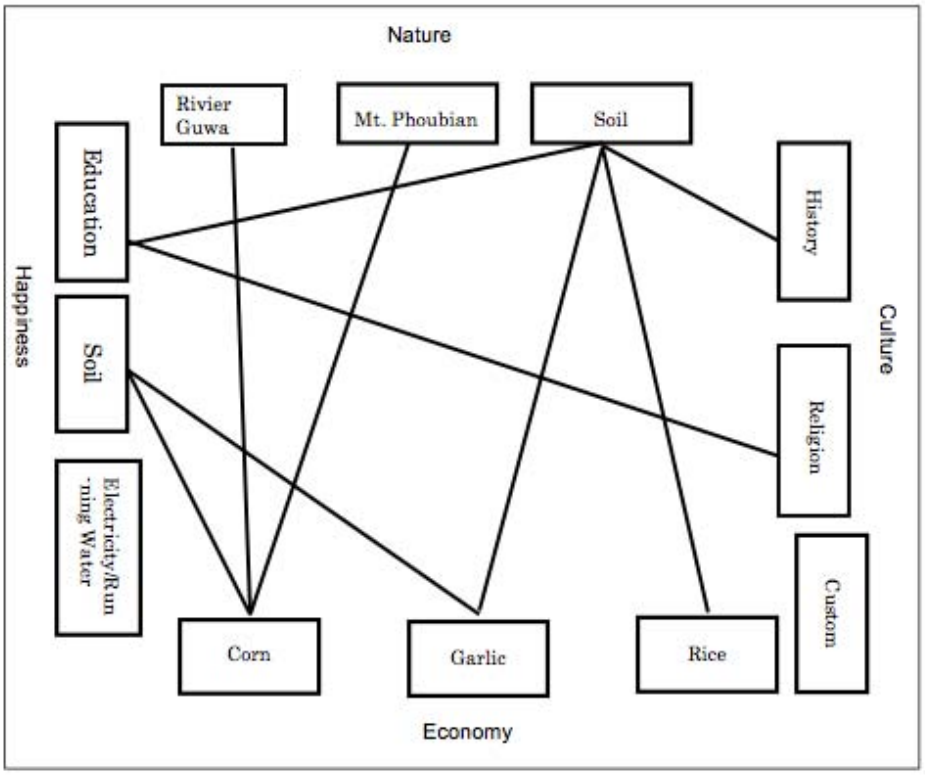
WHAT	HOW	WHY
Happiness 1) Daily life	They are living happily. People in the same village do not fight. Children go to school.	In the past, only children of rich families could go to school. During the war, rice could not be grown.
2) Things that make them happy	The government provided running water, electricity, and roads. Having land. Having a car.	Daily living has become more comfortable.
3) Mutual assistance	People in the village help one another to solve problems.	People who are rich and those who are not united.
Unhappiness 1) Mental Unhappiness	Garbage flows down from the upper streams of rivers.	Because not only garbage but animal carcasses flow down the river, t is easy for

		people to become sick because of the dirty water.
2) Physical Unhappiness	The volume of water in the rivers is decreasing. The climate is unstable.	Because of the uncertain climate, it has become harder to plant fields and grow rice.
What they would like to see improved 1) Workshops for teens	Hold a workshop concerning clothing and the cultures of Laos.	Recently, young people in Laos have shown a tendency to want to escape from Lao culture.
2) Assistance from the government	Increase the salary of the village head.	The annual salary of the village head is only 150,000 kip, but the village head works hard. They would like a workspace for the village head.
3) Care for the environment	Plant trees to replace those cut down.	Prevent the worsening of changes in climate. The reduction in river water is due to the reduction in trees.

Map

Outside what was shown on the maps, the following basic information was presented about the village.

・Village Population: 497 (of them257 female)
・Ages 1-5: 5 (of them 2 female)
・Ages 6-18: 140 (of them78 female)
・Ages 19-45: Unknown
・Ages 46-60: 62 (of them 32 female)
・Number of households: 113

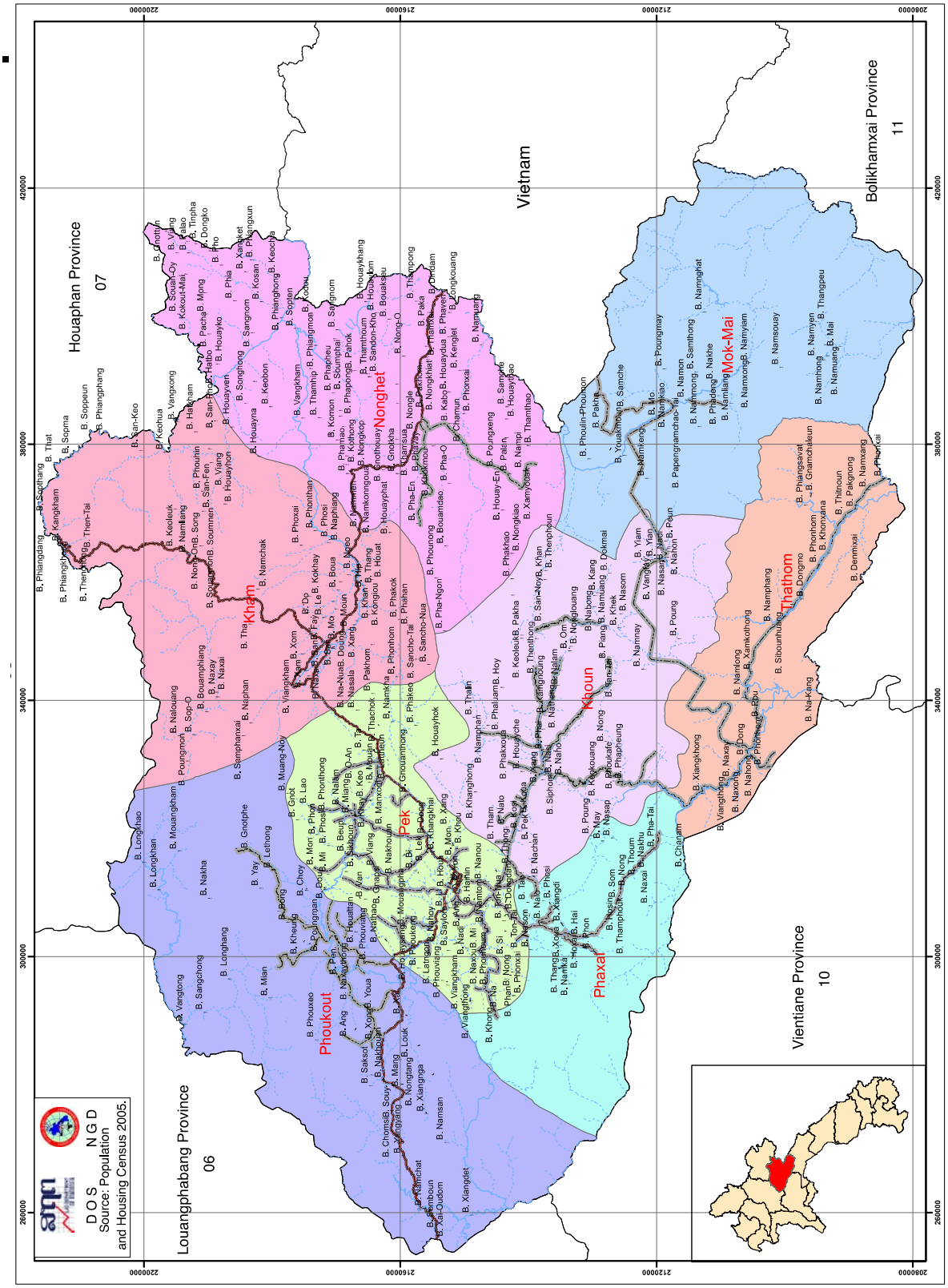
Analysis of Results	The 'Wisdom Box' was created by selecting three points of content from the interviews that were most important in each of the areas of nature, economy, culture and happiness. (Implemented only in Kham District) Example: Hin Village 'Wisdom Box' **'Wisdom Box'**  

Presentation of Results	The students used the matrices they created to present results. They presented about the situation in the villages from the perspectives of economy, nature, culture, and happiness.  Photo: Presentation of Mapping group  Photo: Presentation of Economy
Feedback	The students received feedback on the content of their presentations from the villagers. If there was a mistake in the content, corrections were requested and, if not, the villagers were asked to give their impressions of the presentation. In Hin Village, the villagers were asked to raise their hands to indicate which of the three points in the 'Wisdom Box' raised by the students were the most important for their lives and we were able to clarify priorities within the village.  Photo: Feedback from villager

Members of the Survey Team

Name	Title
Sombath Somphone	Founder and Director, PADETC
Khamphoui Saythalat	Senior Manager, PADETC
Bouvachan Thanavong	Curriculum Development Team, PADETC
Pantana Aloumsavath	Media for Development Team, PADETC
Kolaka Bouanedaoheuang	Director, SOUANMAI-LAO Centre, PADETC
Sengmany Vongnalath	Trainer, SOUANMAI-LAO Centre, PADETC
Anoulek Duangdala	Media for Development Team, PADETC
Chanthaphon Duangkhamchan	Media for Development Team, PADETC
Xaysomphone Phaypadith	Secretary/Facilitator, PADETC
Sachiyo Soga	Graduate Student, University of the Sacred Heart, Tokyo
Miki Saito	Graduate Student, University of the Sacred Heart, Tokyo
Yumiko Shimozato	Student, University of the Sacred Heart, Tokyo
32 Youth Volunteers	First- and second-year high school students at Phonsavan High School (16 males and 12 girls 5 males and 1 female of Hmong ethnicity) 25 students who participated in the field survey in Kham District (13 males and 12 girls)
Khansysavanh Phongphakdy Sonphet Inthavong Sousady Sysophon	Three teachers from Phonsavan High School

Map of Xieng Khouang Province



Lao Department of Statistics. *Population and Housing Census.* 2005.

Analysis of Survey Results

Current Conditions in Xiang Khouang Province

As shown in the previous chapter, in the survey of Xiang Khouang Province, 32 students from Phonsavan High School interviewed villagers in six villages in two districts (Pek District: Na-O Village, Ladgone Village; Kham District: Longpia Village, Napa Village, Hin Village, Linmouang Village) concerning nature, the economy, culture, and happiness. On each occasion, the information obtained was organized and analyzed by the students (youth volunteers). In addition, the students made presentations to the villagers, received feedback from the villagers, and adults and children came together to discuss ways of solving the problems affecting the villages.

In this chapter, we will discuss the interview surveys that students conducted in each village and their analysis of results as well as try to analyze the survey as a whole from a broader perspective. First, we will analyze the current situation of Xiang Khouang Province from the perspective of its sustainability. The data for this analysis was obtained from the interview surveys conducted in the six villages by the students as well as their reports of the results.

In the villages of Xiang Khouang Province, people live subsistence lives centred on farming. The following four characteristics of well-being can be mentioned. First, the villagers hold personal religious beliefs. Second, there is harmony among the different ethnic groups. Third, there are strong community bonds, and these bonds support the villagers as they live their lives. Fourth, traditional culture is being preserved.

On the other hand, one can see the causes that impede well-being in the villages. First is the problem of garbage. Many people throw garbage into the river and river pollution is worsening. Because the villagers use the river water for farming and raising animals, there is concern about the negative effects on agricultural products. Next are problems related to mining. Within the province, there are opportunities to mine naturally-occurring metals, especially gold. Due to the chemicals used in this process, not only is harm to the human body becoming evident, but also so are other forms of damage such as insufficient water, soil pollution, and river pollution. Great quantities of water are used in the extraction activities and, as a result, underground streams are being unearthed. The chain of events set in motion by soil pollution and river pollution is making people's lives difficult. Further, damage is being caused by the entry of foreign companies. Recently, foreign companies from Vietnam and other countries are entering the village and pursuing the cultivation of corn for export. Prior to this, villagers had just grown vegetables and rice organically for their own use.

However, after beginning corn cultivation, villagers started using large amounts of chemical fertilizers, and effects such as soil depletion and degradation in water quality have resulted. As a consequence, farmers have been unable to grow crops and this has exacerbated the conditions of poverty in the village. With an increase in population has come further deforestation, and frequently the effects of non-native seeds on plants and animals harm crops. It is also apropos to point out that on the cultural side, the traditional culture of the village is growing weaker as a result of the influence of industrialized countries.

Diagram 1 provides a summary of the various problems related to the sustainability and unsustainability of Xiang Khouang Province (refer to the following page). The light green represents 'the economy', the purple 'culture', the red 'happiness', and the blue 'environment'. The orange and the triangle shapes give hints of the issues arising outside the village that are exerting a negative influence on the lives of the villagers. The circular shapes represent sustainability within the community and the square shapes unsustainability within the village. The circular shapes are connected to well-being in the village and the square shapes indicate the reality of poverty as well as connections to the possibility of future poverty. The word 'poverty' here is used to mean 'deprivation' as defined by Amartya Sen[1]; in other words, that one is in a situation where one is deprived of basic capability. It not only expresses a simple state of hunger, but can also be interpreted to mean a condition where people's needs are not being met. One can see that, presently, the current towards sustainability and that towards unsustainability are competing in Xiang Khouang Province.

[1] S. Amartya. *Development As Freedom.* Oxford: Oxford University Press. 1999.

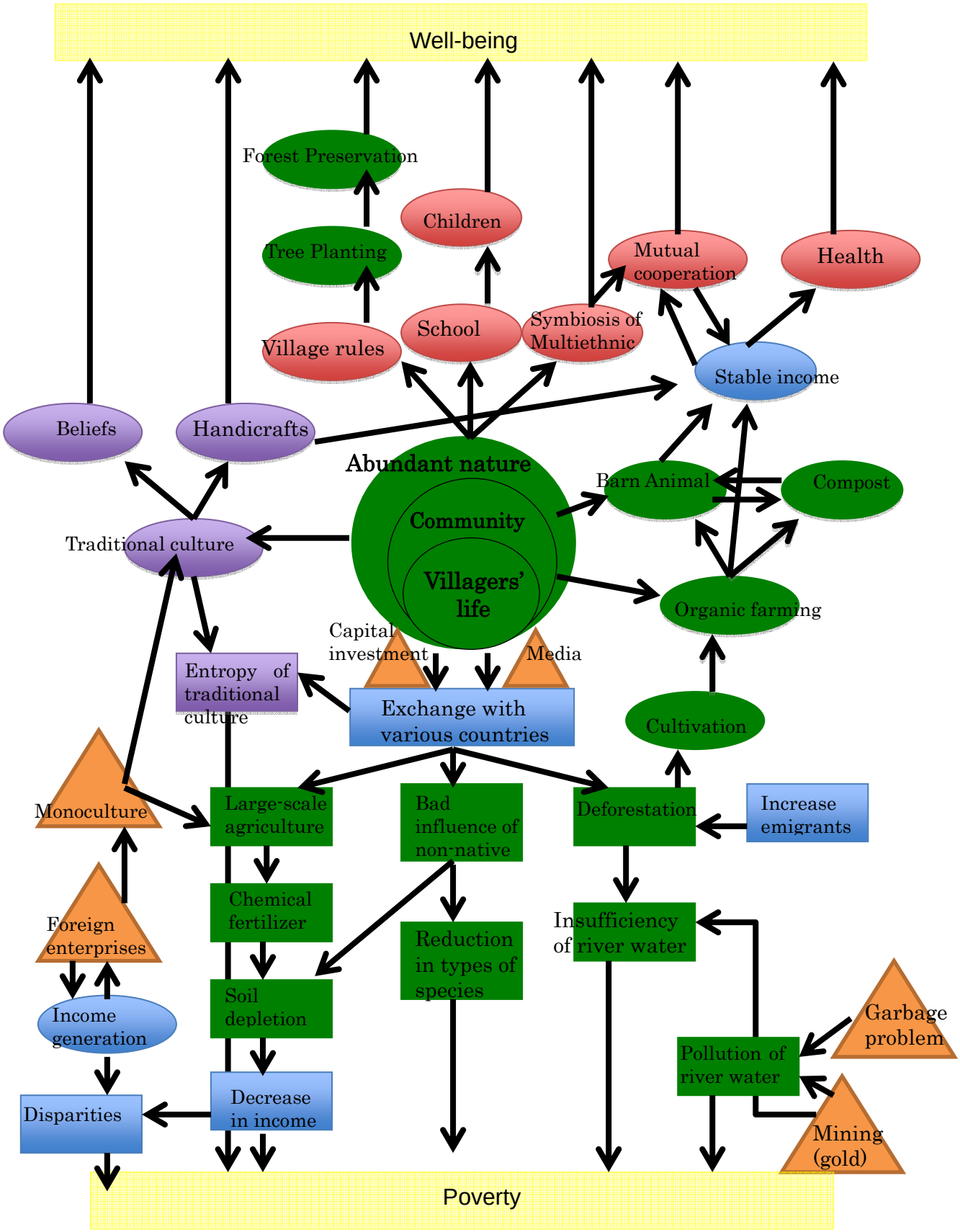


Diagram 1: Sustainability and unsustainability in Xieng Khouang Province

*This diagram was created based on students' interview data.

What Students Learned through the Survey

What did students who participated in the field survey learn by leading it? Of course, because it constituted a short period of learning, one cannot say for certain that students' skills developed a fixed amount through their participation. However, based on their forward-looking attitudes and enthusiasm for learning, it is the author's judgment that they had focus and learned what was demanded. An interesting point is that several of the skills they learned overlap with the 'higher-order thinking skills' emphasized in the International Implementation Scheme compiled by UNESCO. Below I will mention six of these key skills.

First is creative thinking. In conducting their own interviews, the students had to think about what kinds of questions to ask to get the information they wanted to know. Also, they had to make use of their thinking skills to consider such things as the order in which to ask the questions they had prepared, which combines thinking about the content of the questions as well as the interview process.

Next one can mention critical thinking. In order to organize, analyze, consider, and summarize the data gathered during the interviews, one needs the capacity to discuss things from a critical perspective. In particular, when making the 'wisdom box', students needed not only to think about the connections among phenomena related to the four facets, but also to analyze them critically. Students established that in one village, many of the villagers were cultivating corn for export in order to raise their incomes and that this was undergirding the economy of the village. However, at the same time, from the environmental perspective, villagers had started to face the reality of soil depletion caused by the corn cultivation. They became unable to grow crops other than corn and are experiencing the problem of their household incomes declining. Students needed not only to understand the current situation of each of the four facets, but also to connect phenomena across the four and analyze them critically. It takes time for students to be able to use critical thinking and systems thinking skills effectively in their daily lives. However, we can say that through this study, we were able to come up with a clue of how to develop students' skills in viewing things from a new perspective and analyzing them.

Third, students' presentation skills improved as a result of the workshop. In order to present the results of the survey to the villagers, students needed to communicate the information they obtained both precisely and clearly. They wrote the minimum information necessary on large pieces of poster paper and, using this, made their presentations. At the beginning, the students were shy about speaking in front of people, but gradually they gained confidence and were able to present in a loud voice.

Fourth, we were also able to see improvement in students' communication

abilities. There were times when the interviews did not proceed in a way that fit the students' planned questions, and they needed to adapt to the situations with back-up plans. When the students completed the first survey, many expressed feelings or regrets that they were not able to get the informants to understand their questions and they were not able to obtain responses as expected, which made analysis difficult. Following that, a workshop on interview and question methodologies was held, and when the second survey took place, students were able to adapt the interview content and make changes in the questions for different informants. This time many students felt they were able to obtain the data they needed. From this as well, we can say that even though it was a short time period, students' communication abilities were developed in a concentrated way.

Fifth, it is also good to point out the cooperative relationship among the students. The workshop and field study were centred on collaborative group work; thus, teamwork among the students was important. During the reflection time following the first survey, not a small number of students commented that the teamwork had not gone well. Through experiencing the first survey, students directly felt the importance of becoming unified as a team to conduct this work. In fact, during the first survey, students other than the person asking the questions were looking in different directions and some students were even observed using their cell phones. However, during the second survey, the collaborative structure could be seen in that the students not asking questions took notes on the interview content and diligently listened to what the informants were saying. Also, during preparation for the second presentation, the students cooperated in the summary and analysis of the interview, and the map-making groups also collaborated with the other groups, discussing ways to draw the maps efficiently.

Lastly, I would like to emphasize that students developed the capacity to think from multiple perspectives. Through the interviews, the students came face to face with the problems experienced by the villagers. As so-called 'city kids' who were born and raised in the central area of the province, it seems they had had limited opportunities to know what life was like for people living in the villages. Thus, when preparing for the first interviews, they were not able to effectively draw out common points between the villagers' lives and their own, and there were many students who seemed to feel it difficult to think of questions suited to the lives of people in the villages. However, through the accumulation of experience doing interviews, students realized that the lives of the villagers were supporting their own and, from the opposite view, when the students did such things as using water carelessly or littering, there was a danger of having a bad effect on the lives of the villagers. As students came into

contact with these facts, their minds started turning with questions such as: 'If I was in the position of a villager, how would I feel about this situation?' or 'If I was a villager, what would I be feeling'? One can say that students became able not only to analyze the situation in the villages from their perspectives as students, but from the perspectives of villagers as well as from other perspectives.

Future Issues for Building a Broader ESD Model

To build a 'broader ESD model', we must consider both the results above–especially those pertaining to learning–as well as several other issues that have come into relief through the survey.

First is the issue of human resource development. Through the survey, it became clear that the quality of the trainers training workshop facilitators is important. In order to emphasize students' own learning in the workshop for this project, the facilitators did not try to instruct students at all. As a result, the capacity of the facilitators to guide students in the learning process came into question. This workshop was implemented using the 'Compass' method. Facilitators need to sufficiently understand the concept and thinking behind this method and to develop workshops based on this understanding. During certain parts of this workshop, however, the facilitators seemed to be quite confused. The facilitators had an important role to set up a program for pre-survey training that would motivate students to participate actively by encouraging their autonomous participation, enabling them to have an image of the kind of survey with which they would be involved, allotting enough time for writing questions and practicing interviews, etc.

Secondly, one must put effort into the application of the 'Compass' method. To the students and facilitators in Laos, the 'Compass' method was a big change from what they were used to, and we learned that it would take some time for them to master and 'own' it. When using the method, one needs to be able to draw out the connections among the four facets of nature, the economy, culture and happiness when making the 'wisdom box' and one needs to be able to apply systems thinking skills. However, because it was difficult for the facilitators to analyze from the perspective of the multiple ways things are connected, it seemed they were not able to guide the students well.

As Robert Steele of Systainability Asia has mentioned, the ultimate goal of the 'Compass' method is not to visualize things using yarn. The main points are to be able to approach things in a systems-oriented way and to discover connections among things. Thus, it is fine not to use yarn as a tool for this. Based on the cultural context of Laos, for example, one can make use of colors and shapes that are close to the people

in order to visualize and depict conditions in Xiang Khouang Province. Developing systems thinking skills and the ability to draw out connections in this way would be a valuable contribution to discussion.

Third, one needs to create spaces for continuous learning. It is important for adults to establish regular opportunities for learning in order to maintain a high level of consciousness among the students. With one-time learning experiences, students may only see them only as 'good experiences'. In fact, many students answered that the workshop was a 'good experience'. One of the issues for building a 'broader ESD model' will be to connect these kinds of student learning experiences to changes in student actions; the sustainability of the programs themselves is important.

Fourth is the maximization of the development of children's possibilities as change agents. In school-based education up until this point, students have been viewed as objects to be managed by adults and an understanding was evident that the teachers would teach and children would learn. However, this survey was designed to turn the 'vector' in the opposite direction. As mentioned before, through the children's survey research, the adults around them were affected. There were many times during which children and adults were learning together, and many villagers were empowered through the survey activities. Not only that, but Khansysavanh Phongphakdy, a teacher at Phonsavan High School, said he learned the following through the workshop: 'When the students have problems or questions, they often come to ask me. However, I also did not know the answers so I gathered information to answer the questions and I also had to study. I think that this motivated me to improve my knowledge and skills. From the students, I also learned presentation and communication skills and ways of talking'. As can be seen in what Mr. Kham says, by virtue of the students implementing the survey, the adults in the community underwent a change in consciousness and even enjoyed collaborating with the students. By placing students at the centre of developing a sustainable community, the latent possibilities of adults in the community might also be revealed.

Lastly, I would like to tie the chapter together by emphasizing the collaborative structure encompassing five elements needed to build a 'broader ESD model'. The base of a 'broader ESD model' involves: 1) focusing learning around 'children as change agents' for a sustainable future; 2) children and adults in the community learning from one another; 3) connecting student learning outside of school with that within school; 4) assistance to student activities from the provincial education office and central government; and 5) assistance from the educational departments of NGOs and NPOs. It also includes the solidification of linkages among these five elements.

As in this workshop, students can be the leaders of action research and go out into the field to gather information about conditions in the villages. Then they can discuss ways to solve the problems the villagers are facing, methods for preserving the cultural traditions that should be passed down to the next generation, etc. They can also do research in school concerning issues faced by the community, searching to see if the same kinds of cases occur in other countries or communities, gather information to solve the problems, and summarize and present this information.

Through learning together with the students, the community gains an opportunity to think from a new perspective about conditions in the village. The opportunity also arises to think about what is important to people in the villages and what kind of life makes people in the villages happy. Also, together with the students, the villagers can critically analyze their current lives. There is also the likelihood that the fresh thinking of the students will guide villagers towards solving problems that they had left alone because they hadn't been able to figure out a solution before.

One can also place hope on the possibility of schools serving as 'community sustainability centres' for promoting learning aimed at solving community problems. For example, in Laos, rules allow each school to develop 20% of the overall curriculum. This time can be used to go beyond the framework of the existing subject areas and develop learning as one with the community. In particular, one can say that the five UNESCO Associated Schools in Xieng Khouang Province could take the lead in this new educational movement.

The role of NGOs in building relationships among the five areas and in organizing human resources and funds is critical. In this survey project, PADETC collaborated with the team centred on graduate students from the University of the Sacred Heart, Tokyo, to coordinate the overall program and many results were achieved.

One also needs the understanding of the provincial education office and Ministry of Education as well as the provision of appropriate resources. To promote ESD, it is important to have understanding of ESD at the level of each provincial education office, links between school and community, as well as understanding in the school of the need for reform. Further, it is important for the school or community representative to form a consortium to take a role in pushing for the building of a 'broader ESD model'. By having policy to promote ESD at the level of the Ministry of Education as well, one can solidify the foundation for a 'broader ESD model' in Laos

Afterword
Towards an 'Ecology of Learning'

If you are involved in international cooperation work, you often hear comments to the effect that this kind of work in developing countries makes you discover what advanced industrialized countries have lost–things like a slow and natural flow of time, connections with family, mutual assistance within the community, customs and traditional culture that have been rooted in the land for a long time, etc. It is true that for the countries referred to as 'advanced industrialized nations,' that these were also once common. It is not unusual for people from advanced industrialized countries who work in the developing world to feel wistful and rediscover the value of these things, and then make great effort to prevent the loss of bonds of connectedness in these countries.

On this occasion as we were involved with activities in Laos, it seemed that these bonds were in the process of being lost in developing countries as well. This loss was occurring not only in the capital Vientiane, but we felt this also in the rural areas. As presented in this report, the province of Xieng Khouang that was the subject of the study was not facing the problem of hunger, but continued to be suffering the after-effects of war and is an area that has been dealing with the problem of poverty for a long time. Yet Xieng Khouang Province also has gold and other mineral resources, as well as plentiful natural resources such as woods, rivers, and natural springs. Because of this, foreign capital is flowing in and a portion of its traditional lifestyle is being destroyed.

The signs of globalization can easily be seen in the lifestyles of the youth who are very sensitive to information that comes to them via the Internet and television. Even the young people who participated as volunteers in the survey research wore colorful shirts, constantly used their cell phones, and knew popular K-POP (Korean pop music). In general, they were very hip high school students. Even though the area was rural, they had been born in towns or cities and had different ways of living and values than the people living in the villages. It is only natural that there was a clear gap in values with the generation of villagers who had experienced war and had been living lives of poverty. One can probably say that the two sides that came together through this action research represented 'the other' to one another.

Over the course of several workshops, however, it seemed that the distance between the sides became smaller. The villagers who were asked questions by the young people got very happy expressions on their faces and the young people who reported the results of the study in front of the villagers were proud. One of the village

heads said: 'I was honored to be interviewed. I would like to study about the things I wasn't able to answer'. One of the high school students who conducted the interviews said: 'It is hard to ask questions while thinking, but it was fun. I will not forget the feeling of life in the village and how kindly people treated us. I would like to bring this feeling into my daily life'.

The distance between city and village and the youth and adult generations are not the only gaps that seemed to have shrunk as a result of the survey. Others include the distance between school and community, between the current knowledge system and traditional life skills, and between planned learning and incidental learning. The project created opportunities to come into contact with each of these gaps and to 'weave' youth and villagers into the midst of a new learning context.

Generally, schools are separated from the outside world by both time and space. Even within the society, schools have a particular type of time and space. Almost every day for a set period of time they pull children from the natural environment of their families. By developing these children in a more planned and designed type of time and space, they are able to become citizens of the country and participants in society who are able to interact with the large-scale social system. However, on the other hand, the dialogue among generations has become weaker, there is discrimination between school-based knowledge and the traditional knowledge passed down in the community, and it seems that knowledge that was once integrated has been separated into specialty areas.

Looking back on the process following the completion of the research, I have come to think that this project may have been a radical experiment in rethinking what can be called the 'education sphere', which has been constructed in a compartmentalized way centered on school-based education. From adults to children, from classrooms centered on gaining knowledge to learning in the field and enjoying the process of exploring, from study involving the patience to memorize to learning in which one gets excited discovering problems to solve….by shifting the center of education little by little, a new world faintly appeared–that of the above-mentioned 'new context for learning'. We decided to call this an 'Ecology of Learning' or 'Ecological World of Learning' and it is expressed on the inside cover of this report by the graphic. It may be a bit of an exaggeration, but one can say that it is a picture that questions the basis of how modern education is conducted.

The graphic is a representation of the world that was revealed by trying these experimental educational activities in Xieng Khouang Province. This is also a graphic in which we have deliberately hinted at this new world of learning. At a glance, it looks like a Buddhist mandala with what 'education' and 'learning' are arising from the

world contained within. As our group only had experience in Xieng Khouang Province, these are difficult questions for us to answer. However, at the very least, as compared to modern education that is based on the values of 'stronger, faster, and more efficient', one can say that it differs in being education on a human scale.

From the beginning and in such places as the International Implementation Scheme, ESD was emphasized as being the implementation of holistic education. However, the concrete way of doing this has not really been identified. Nonetheless, in this project, I feel that we were at least able to see what can be done and how we can do it. One can say that the issue for the future is to cultivate this 'bud' carefully and to develop words and images that are easy to understand and can be shared with many more people. Until we see that bud bloom, we have the intention to make every effort using the abilities that we have.

Basic Study for Building a "Broader ESD Model" for Developing Countries
with Creation and Dissemination of Related Multimedia Materials
Principal Investigator: Yoshiyuki Nagata,
Associate Professor, University of the Sacred Heart, Tokyo

ANNEX

Surveys and Study Tour for Technical Transfer to Xieng Khouang Province

Following surveys were implemented to collect valuable information for qualitative educational development in Xieng Khouang Province. Here are details of the surveys.

- **Survey in Lao PDR**

  Researcher : Yoshiyuki Nagata, Miki Saito

Duration	Place	Informant/ Organisation
25th ~ 31st Dec. 2010	Vientiane	・ Mr. Chaleun Souvon (Director, Lao Ministry of Education Department of Preprimary Education and Primary Education) ・ Assoc. Prof. Dr. Sisamone Sithirajvongsa (Director, Lao National Commission for UNESCO) ・ Mr. Sombath Somphone (Director, PADETC) ・ Ms. Makiko Iwasaki (JICA Lao Office)

- **Survey in Thailand**

  Researcher : Yoshiyuki Nagata, Miki Saito

  Duration: 26th January – 10th February 2011

Researchers	Duration	Place	Informant/ Organisation
Yoshiyuki Nagata, Miki Saito	27 ~ 31 Jan.	Bangkok	Mr. Athapol Anuthavorasakul (Chulalongkorn University R & D Center on ESD, Direcor) Mr. Mikko Cantell (UNESCO Bangkok Office) Ms. Katie Vanhala (UNESO Bangkok Office) Mr. Robert Steel (Systainability Asia)
Miki Saito	1-2 Feb.	Khon Khen Prefecture	Mr. Somphan Janwapai (Ban Wa School, Principal) Ms. Githijay Khetkhaw (Ban Wa School, Teacher)

			Ms. Manoonsak (Khamkennakron School, Teacher)
Miki Saito	4-8 Feb.	Kanchanaburi Prefecture	Ms. Rajani Dongchai (Children Village School, Principal)

- **Survey in India**

Researcher：Sachiyo Soga

Duration：7th- 15th February

Duration	Place	Informant/ Organisation
8-10 Feb.	Dehradun in Uttarakand State	Dr. Vinod Kumar Bahatt （Director of Navdanya） Ms. Tiphine Burban （School Project Intern, Navdanya） Dr. Deepak Arora （Headmaster, Ann Mary School） ・Mrs. Silvia Wieczorek（Vice-headmaster, Ann Mary School）
10-14 Feb	Dehradun in Uttarakand State	Dr. Vandana Shiva (Founder of Navdanya) Ms. Kavita Singh (Coordinator of School Project, Navdanya)

- **Study tour to Japan**

Visitor：Mr. Kamphoui Saythalat (Senior Manager, PADETC)

Mr. Bounkhong Lattanavilay (Principal, Phonsavan Upper Secondary School, UNESCO School in Xieng Khouang province)

Duration：28th Feb. - 8th Mar.

Duration	Venue/ Organisation
28th Feb. ~ 4th Mar.	Urakawa City, Hokkaido Prefecture 'Bethel House' (Social Welfare Corporation)
5th~ 7th Mar.	Kawasaki City, Kanagawa Prefecture 'Free Space TAMARIBA' (Non-Profit Organization)

Report on Thailand Survey

1. Chulalongkorn University R & D Center on Education for Sustainable Development

Conditions and Characteristics of ESD in Thailand

The UNESCO regional office is located in Bangkok, the capital of Thailand. Because the office promotes ESD throughout the Asia-Pacific region, Thailand has greater access than other countries in the region to the latest information about ESD. The environment is one in which Thailand is able to implement ESD projects quickly based on this information. In addition, Thailand's King, King Bhuminol, advocated the 'Sufficiency Economy Philosophy' in the latter part of the 1990s. This sounded a warning bell against national development that over-prioritizes high economic growth. Thus, there is the view that Thailand has a setting with better conditions for promoting ESD than other countries.

Implementation of ESD in Thailand tends to be promoted from the perspective of environmental education as a result of the enactment of the EESD (Environment Education for Sustainable Development) Master Plan for 2008-2012. The types of activities that stand out in terms of content are so-called 'eco' activities such as sorting of school garbage and decreasing energy consumption. There still are not many activities that go so far as to change actions and attitudes to ones aligned with achieving sustainable development, as is aimed for in ESD. However, ESD researchers and practitioners exist in various places across the country, and ESD best practices are being implemented in such places as Chiang Mai University, Khon Kaen University, Thaksin University, and at private schools in rural areas.

EESD

The ASEAN countries were influenced by 'Agenda 21', ratified at the Earth Summit in Rio de Janiero in 1992, and, as a result, enacted an Environmental Education Action Plan. Thailand established the five years between 1997 and 2001 as a period for an 'Environment Education Master Plan and Action Plan', and began its first activities to promote environmental education at the national level. The plans were implemented primarily by the Ministry of Natural Resources and Environment and were used as guidelines for environmental education.

Following upon the Environment Education Master Plan and Action Plan active through 2001, the period of 2008-2012 was designated a period for 'Environment Education for Sustainable Development', or EESD. There were two goals for the five

years. One was to create an action plan for promoting EESD, and the other was to realize sustainable economic growth and social development, as well as strengthen civic education, through environmental education.

Chulalongkorn University R & D Center on Education for Sustainable Development

The R & D Center on Education for Sustainable Development at Chulalongkorn University began as the Environment Education for Sustainable Development Center housed in the Chulalongkorn University Education Department, and was renamed the R & D Center on Education for Sustainable Development in 2007. The Center not only engages in research concerning environmental education, but also pursues research concerning ESD. Led by director Athapol Anunthavorasakul, five university ESD researchers and six adjunct researchers are involved in the Center's research.

The two institutions within Thailand that are known for ESD are the Chulalongkorn University R & D Center on Education for Sustainable Development and the World Wildlife Federation. The World Wildlife Federation mainly promotes ESD through environmental activities while the center at Chulalongkorn University serves as a Center of Excellence aiming to strengthen the innovation and expansion of ESD at the national level and across the Asia-Pacific region. It mainly aims to develop the capacity of teachers and instructors, teacher training institutions, and other educational institutions, to build networks, and to strengthen alliances related to ESD at the local and sub-regional level. The Center has four roles: survey research and development concerning ESD innovations, monitoring the current situation of ESD, providing services related to ESD scholarship, and evaluating ESD. In practice, the Center provides 5 educational services, is engaged in 4 research projects, and is involved in the development of 2 ESD innovations.

Educational services have been developed based on UNICEF's concept of the 'Child-Friendly School.'

- Training in life skills, global education and citizenship education as core teacher pre-service training
- Teacher training in how to use information and communications technology (ICT)
- Lectures on ESD and holding of 'Learning about Sustainability' workshops
- Showing of films to increase understanding of sustainability
- Holding of a 'Capacity Building for ESD Workshop' for university students interested in becoming teachers

In the research area, the following research continues to be expanded.

- Research on education policy concerning Education for International

Understanding

- Monitoring of schools in nine provinces that have implemented the 'Child-Friendly School' model
- Monitoring of 'Eco-Schools' in six provinces that have been implemented in collaboration with the Ministry of Natural Resources and the Environment
- Development of 'Triple A' (Action, Analysis, Assessment) children's communities in collaboration with the International Institute for Child Rights Development (IICRD) The IICRD collaborative project activities are being implemented in the Klong Toey slum in Bangkok and the Ban Natoe slum in Chiang Rai.

The following two activities are being implemented under the banner of 'Development of Innovations':

- Training in the 'Child-Friendly School' model, life skills and global education as part of pre-service training for teachers
- Training in planning, monitoring and evaluation based on the concept of rights

A portion of the activities implemented by the Center are pre-service training in the fundamentals of ESD, environmental education for 'Eco-Schools', activities concerning children's rights, and promotion of the 'Sufficiency Economy Philosophy' through ESD.

Funds to support Center activities have been obtained on a project basis, with strong relationships with the UNICEF Bangkok office and the Ministry of Natural Resources and the Environment.

Possibilities for Use of the 'Compass' Method in Laos

We received the following points of advice concerning the use of the 'Compass' method in Laos. When using the 'Compass' in the Asian region, particularly in Laos and Thailand, one needs to provide more time for discussion and analysis to the teachers who have learned the instructional method. For the teachers, the method is a new way of thinking and, because it is an innovative instructional method, it takes time for the teachers to understand and be able to apply it. When holding a 'Compass' method workshop in Thailand, we heard the opinion from the teacher participants that 'The method is very complicated.' From this, we see that one needs to simplify the training for teachers in the 'Compass' method.

One special characteristic of education in Thailand and Laos that one can mention is the 'quiet classroom' culture. In other words, there is a firmly rooted culture in schools in which teachers direct learning using textbooks and students listen quietly taking notes and memorizing content. Within this kind of school culture, an issue is that teachers are not used to the types of lessons of the 'Compass' method, in

which teachers ask many questions to students and students are expected to participate actively. In addition, because of an unspoken understanding that asking questions of teachers is rude, the application of the 'Compass' method must take into account the 'hidden curriculum' of the schools.

Based on the above points, teacher trainers in the 'Compass' method also need a high level of capacity.

One should not apply the 'Compass' method being used by Robert Steele and others in its pure form within school-based education and teacher training in Thailand and Laos. One needs to create a 'Compass' method appropriate to the culture of the area, the educational culture, and the national character. In addition, the method activities are a bit complicated and need to be simplified.

Issues Concerning Future Promotion of ESD

In school-based education up until this point, emphasis was placed on the content of what to teach at what age and not much emphasis was placed on the learning process. However, ESD aims not to emphasize the content of education, but the process of education and learning. The issue as the Decade of Education for Sustainable Development reaches its close in 2014 is to transform school-based education from content-centered education to process-centered education.

In Thailand currently, various types of education – EE (Environmental Education)、EIU (Education for International Understanding)、Multicultural Education、Global Education, and others – co-exist, and an issue is finding the complementarities between these and ESD.

In fact, there are many points of overlap between the 'Sufficiency Economy Philosophy' and the concept of ESD. In addition, the 'Sufficiency Economy Philosophy' offers new hints for national economic growth and the growth of industry and is important for the promotion of ESD. However, many people are not aware that ESD can be used to promote the 'Sufficiency Economy Philosophy', and this is an issue that needs to be addressed regarding the promotion of ESD in Thailand. In Thailand, only a few people out of a hundred ESD scholars and practitioners understand this, with many confusing ESD and environmental education (EE). Thus, the need to broaden understanding of ESD is also an issue for the future.

2. UNESCO Bangkok Office

Issues in the Promotion of ESD

The following three points can be raised as issues concerning the promotion of ESD under current conditions in the Asia-Pacific region. First, is the issue of the extent to which ESD can be brought into the mainstream of school-based education. In Asian countries such as China and Indonesia, for example, best practices are being generated at the school level. However, it is an issue for ESD whether these can be brought into the mainstream of school-based education.

Second, in promoting ESD there is the problem of capacity building. The key to ESD promotion is advancing teacher training and curriculum development in tandem. One must also create guidelines directed at school principals concerning the management of a school based on ESD principles. Guidelines concerning instructional methods and facilities management are particularly needed. Implementing teacher training reforms only or curriculum development only will not foster ESD practices. Also, in elementary schools in Laos, for example, there is a system under which 20% of the overall curriculum is supposed to be rooted in the community, and schools are allowed to create their own curriculum freely for this time. In actual practice, this provision is not utilized enough or is used in the wrong ways (under-used or mis-used). The true aim of educational activities rooted into the community is not implemented and, in many cases, the time is just used for English classes. In other words, no matter how good a curriculum is, if the skills of instructors are not sufficient, the true aim of the curriculum will not be realized; thus, it is essential to pursue teaching training and curriculum development at the same time. Furthermore, one must emphasize the point that, because ESD involves learners changing their attitudes and actions, if the learning is not grounded in the actualities of the lives of the learners, the goals of ESD will not be met.

Concerning the evaluation of ESD, one needs 'new qualitative indicators' that differ from those on usual EFA monitoring reports such as student/teacher ratio and class size.

Linkages Between EFA and ESD

A recent characteristic of EFA has been an increase in understanding of the importance of the 'quality of education' as compared to the past. The issue that EFA faces concerning 'the last 10%' is also one that ESD needs to focus on actively.

Future Activities of the UNESCO Bangkok Office

The UNESCO Bangkok office is putting its energies into four areas. First is disaster preparedness education. Through capacity building for disaster preparedness education and promoting disaster preparedness education, the office aims to reduce the danger at times of disaster. Second is the promotion of climate change education. Both the above-mentioned disaster preparedness education and climate change education have a good deal of overlap with the concept of ESD. Climate change education in particular can be a useful introduction to ESD. Third, the UNESCO Bangkok office is working to build and strengthen alliances with other UN agencies and international NGOs involved with the issue of climate change. Fourth, the office is collaborating with companies to conduct research on climate chance and increase advocacy about climate change.

Advice Concerning Use of the 'Compass' Method in Laos

One can say that the general trend concerning the 'Compass' method is that the focus is on applying the 'Compass' method to develop individual teachers and that consciousness of using the method through a whole school approach is low. Because of this, when implementing the method in Laos, one needs to employ a macro-level approach to things like capacity building and curriculum development. In addition, it is important to develop guidelines concerning the 'Compass' method and make efforts to expand the new instructional methods across Laos.

The EFA issue of 'the last 10%' mentioned earlier is also a problem that applies to the current situation in Laos. Many minority ethnic groups live in Laos and they speak languages completely different from the majority Lao language and their cultures differ from that of the majority lowland Lao ethnic group. Many of these minority ethnic groups do not see the benefit of school education in Laos and don't aspire to go to school. Thus, when promoting ESD in Laos, one must pay attention to 'the last 10%' as one implements ESD activities.

When promoting ESD in Laos it is also necessary to understand the Child-Friendly School concept being advanced by UNICEF. Practices based on the 'Child-Friendly School' have spread extensively in Cambodia and produced excellent results. Like ESD, the 'Child-Friendly School' concept places the focus on children leading their learning and activities are aimed at sustainable growth for the children. Thus, it would be beneficial as Laos to follow in the path laid out by UNICEF.

When visiting Chulalongkorn University, the issue also came up of the tendency of the Asian 'culture of the quiet classroom' to hinder the development of creativity and critical thinking skills, with the result that the teachers themselves tend to have a low capacity

for taking advantage of higher-order thinking such as critical thinking and creative thinking. Not only in Laos, but a general issue for the spread of ESD in Asia is to figure out how to think and act to overcome a traditional educational culture centered on memorization.

Because Laos is one of the poorest countries, it has also been receiving aid from a variety of international institutions and bilateral aid organisations. As a result, some people feel that the country has recently begun to suffer from an 'excess of aid.' In 2010, the World Bank stated publicly that it would change from a donor-driven structure of assistance to a recipient-driven philosophy of assistance. Further, in 2011 some northern European countries ended bilateral aid to Laos. Thus, the environment surrounding international aid to Laos is currently at a turning point. Rather than just ending the social system based on the inefficiency of 'aid excess', international cooperation that enables the people of Laos to 'own' their own country's development is needed. An issue for this project is that it is playing an important in using ESD to establish a foundation for education that will cultivate ownership of development among the people of Laos.

3. Survey in Khon Kaen Province

Common Point of the Two Schools: Route to Knowing about the 'Compass' Method

Before explaining about each school, I would like to mention how both of these schools came to apply the 'Compass' method. 'Eco-School' activities in Thai public schools were implemented from 2008-09 and, in connection with this, the Department of Environmental Quality Promotion (DEQP) held a seminar in which these schools participated, and during which they were first introduced to the 'Compass' method. At a second hands-on workshop organized by DEPQ, workshops concerning the Compass and Pyramid were held and, following that, each school implemented 'Eco-School' activities using the 'Compass' method.

3.1 Ban Wa School

The Ban Wa School, which is located about 40-50 minutes by car from the center of Khon Kaen Province, has within its grounds a primary school for first- through sixth-graders and a junior high school for first- through ninth-graders. Together, the schools have about 500 students, with 28-30 students and two teachers in each class. About 70% of all students seek work after completing junior high school. Because there are many sugar cane fields in Khon Kaen, many students end up farming sugar

cane.

There are three special characteristics of the 'Compass' method at Ban Wa School: the understanding of the 'Compass' method by the principal and implementation of the Method within the community, the implementation of the 'Compass' method within class lessons, and the participation of the junior high school students in environmental activities.

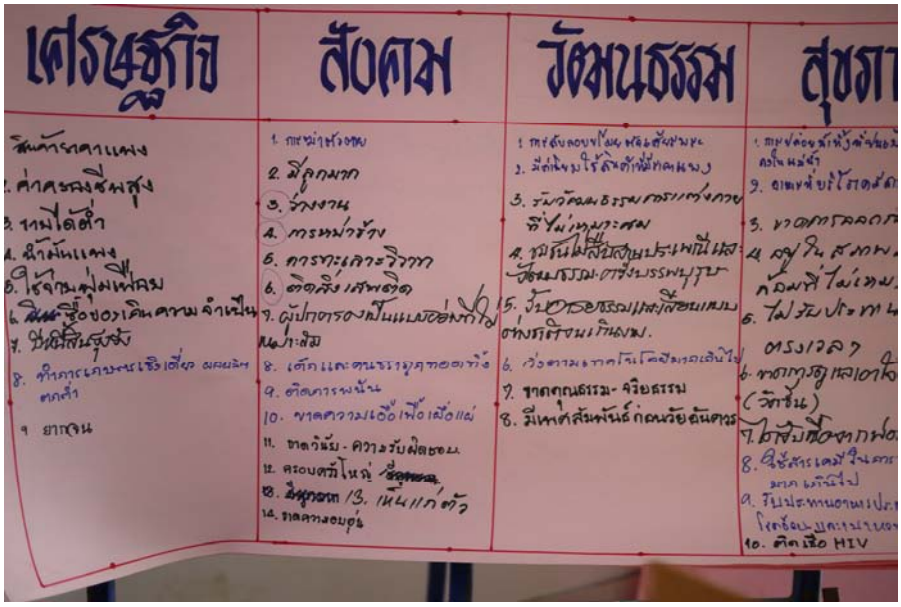
Somphan Janwapai, the principal of Ban Wa School, understands the importance of the 'Compass' method well, and promotes the method not just in running the school, but also in fostering alliances between the school and local community, and in improving the lives of people in the community.

Principal Janwapai has worked for eighteen years at the school to make it one that is open to everyone, is transparent, relates well with the local community, leaves a soft environmental footprint on the community, and can be trusted. An example of a practice that reflects this is that, starting from 2002, members of the local community have been involved in school management as 'education representatives'. Currently, one person has been nominated as an education representative for each district in the area surrounding the school, and the thirteen representatives participate in school management, meeting regularly every month with school administrators.

Before the 'Compass' method was implemented in the area, residents did not have an adequate method or way of thinking to be able to resolve an existing problem. Thus, the aim in implementing a workshop using the 'Compass' method was to increase problem-solving ability. Eighty residents of the community participated in the workshop, seeking to understand the problems facing the community and the connections among the problems, then discovering their own solutions to the problems and taking actions to improve the situation.

In the method, one examines an issue from the four perspectives of nature, the economy, society and well-being. In the practice at Ban Wa School, participants analyzed the current situation of the community from the perspectives of society, the economy, culture and health. Each group then ranked problems based on each of these four perspectives and came up with two problems for each of the four perspectives that the school and community could work on solving together. The issues that Ban Wa School is currently working to address are indicated in the chart below.

Economy	Having knowledge about economics	Having the ability to analyze the expenses needed for one's daily life
Society	Improving feelings of unity in the community	Reducing the number of people addicted to drugs
Environment	Having knowledge about garbage	Having knowledge about chemical fertilizers
Health	Having knowledge about eating in a healthy way	Increasing exercise activities



Picture1. Problems and their rankings identified by the four groups.

When the community members are participating in such workshops and trying to find a process for solving problems, it is important for the school principal to foster the creativity of people in the community and to maintain good communication with them.

Mr. Ponsa, one of the community education representatives, feels so happy that he is able to take care of children through his role as an education representative. Additionally, for children, he hopes that they gain much knowledge by participating in school education, succeed in their jobs, and become adults who can help the community.

The second special characteristic of Ban Wa School is that the 'Compass' method is applied within the classroom in two of the eight school subject areas, social studies and science. Githijay Khetkhaw, the teacher in charge of science, is using the 'Compass' method in her lessons. Through questions such as 'Why?' 'How' and 'In what way?' students' analytical abilities are developed, students realize that diverse things and phenomena exist in connection to one another, students come to exchange opinions with one another, and students themselves gain confidence, she says. She mentions that lessons are easier to implement using the 'Compass' method.

Ms. Khetkhaw says that teaching is also easier because the students exhibit greater comprehension. She says that through the 'Compass' method she has been able to strengthen students' capacity to analyze a particular phenomenon and to recognize that different things are connected in diverse ways. For example, through an analysis of media, she aims to develop students' ability to analyze whether the media is an influence on society and the economy.

During classes, she uses the 'Compass' method, but in the classroom she does not actually use the name 'Compass' in the activities and she does not implement activities that use N (Nature), W (Well-being), E (Economics), and S (Society).

In terms of training teachers to use the 'Compass', she says that if there is even one person at a school who has attended 'Compass' method training, it is possible to incorporate that knowledge into the teacher training process.

When integrating the 'Sufficiency Economy Philosophy' promoted by Thailand's king into education, the 'Compass' method is useful. In addition, under the new education law, 35 hours have been designated for environmental education, so there are many opportunities to use the method. At this school, teacher training concerning the 'Compass' method was implemented during 2010, so there is the possibility that the number of teachers implementing the 'Compass' method during lessons will increase.

The third characteristic of Ban Wa School is that students in the junior high school participate in cleaning the school building and in buying and selling garbage. Cleaning the school building is done mainly to beautify the school. In the buying and selling of garbage, things like used plastic bottles and plastic cups are bought from the students at a price of 7 baht per kilogram (about 25 cents). Items that can be used in elementary students' art classes are donated to the school Other items are sold to a company for about 8 baht per kilogram (about 27 cents).

Picture2. Something made out of recycled items

The prices for buying and selling plastic items are decided together by the students, teachers, community members and the company that collects the plastic. As a result of all of the transactions over the course of a year, about 1,000 baht in income is realized, and this income is used for running the school and buying equipment such as brooms. Students involved in this activity develop a sense of responsibility and say that the activity is fun.

Issues Concerning Practice of the 'Compass' Method at Ban Wa School

The sequence by which the 'Compass' method was implemented at Ban Wa School since the first DEPQ seminar in 2008 is expressed in the chart below.

Ms. Khetkhaw was one person who participated in the first seminar held by DQPE related to the implementation of 'Eco-School' activities.

During this seminar, Robert Steele served as a panelist and provided an overview that introduced the 'Compass' method'. Ms. Khetkhaw said she got the impression that the method was very high-level and that implementation would be tricky. However, Ms. Khetkhaw participated in the second DEPQ workshop at Ban Wa School targeted to teachers and in which Steele facilitated a workshop for Ms. Khetkhaw and one other teacher, one administrators, and one education representative from the community. Ms. Khetkhaw says she understood the 'Compass' method' from this workshop and became confident she could use it in lessons and train her teacher colleagues in 'Compass' method skills.

An issue concerning dissemination of the 'Compass' method that was raised during the visit to Chulalongkorn University was that it is difficult to gain buy-in for them method in schools solely through seminars and written materials. The workshop in which teachers could have direct experience with the method was important. Then, it seems that a key for spreading the method is the establishment of a solid follow-up system once the method is implemented in schools.

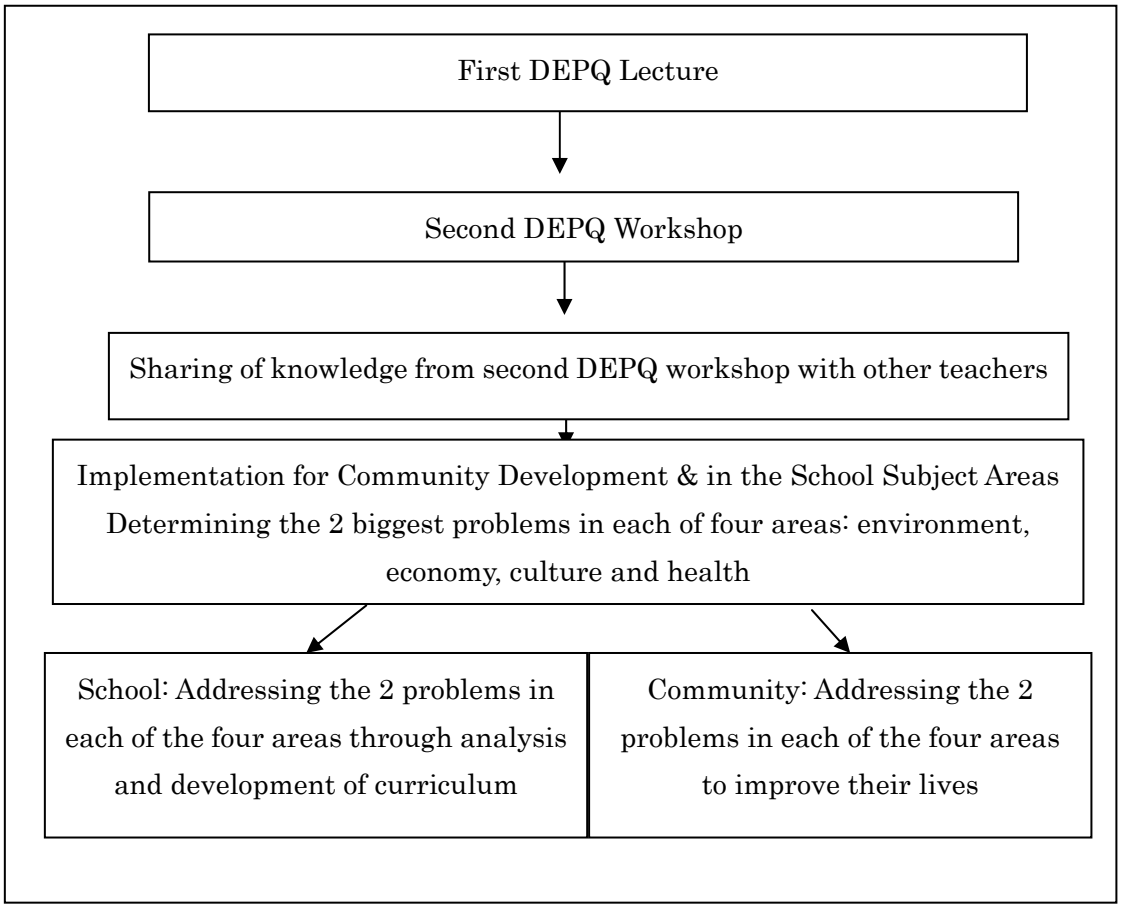


Chart 1: Ban Wa School's Implementation of the 'Compass' Method

3.2 Khamkaennakorn School

Implementation of the 'Compass' Method at Khamkaennakorn School

In the case of this school, teachers in the social studies, biology, and English language departments as well as several local government officials have knowledge of the 'Compass' method, but presently, there are no teachers implementing the method in school subject areas. However, Ms. Manoonsak, one of the teachers at the school, is an advisor to the extra-curricular environment club and is using the 'Compass' method. The method is being used especially during the 3-day, 2-night camps during long vacations, with the club using the method to address local environmental problems. During the camp, first Ms. Manoonsak has the students discuss environmental issues first without the 'Compass' method. She says that in this case, students cannot focus on any issues except those right in front of their eyes. However, afterwards, she uses the 'Compass' method to facilitate a discussion, and students' understanding deepens. They are able to look not just at the problems right in front of them, but to inquire about the causes of deeper problems and develop a perspective in which they discover the

connections among various things. She also says that it is important that the students themselves experience this change in their way of thinking.

Problems Faced by the School

There are four main reasons the promotion of the 'Compass' method has been neglected at Khamkaennakorn School.

The first that can be cited is the insufficient understanding of the 'Compass' method among the administrators. When implementing the 'Compass' method at a school that has many students, one first needs administrators to have sufficient understanding of the method. In particular, so long as the principal does not have this understanding, the introduction of the method is going to be difficult. Currently, at Khamkaennakorn School the environment is such that it is difficult to gain understanding for the 'Compass' method's emphasis on process rather than producing quantifiable student learning results.

Second, one can mention the problem of teacher workload. Just like teachers in Japan, in addition to preparation for lessons and the lessons themselves, Thai teachers have a large amount of paperwork, conferences, advising of clubs, advising of students who participate in competitions, etc., and this is an obstacle to the dissemination of the 'Compass' method. In addition, because most parents hope for their children to go on to university, they want the schools to implement education that will help their children get into university.

Third, there are various issues that affect students. The problem of student smoking is especially significant. For students, the content of lessons is difficult and uninteresting, so they skip classes. Their home environments may be unstable and, as a result, their psychological conditions are unstable. Currently, Khamkaennakorn School is involved in schoolwide activities to address the smoking issue and there is little time to talk about the 'Compass' method.

Lastly is the promotion of the 'Economic Sufficiency Philosophy'. Ms. Manoonsak says that the 'Economic Sufficiency Philosophy' can be promoted within school-based education using the 'Compass' method. However, to engage in a whole-school approach, she says that first there has to be enough time for teacher training, secondly, funds have to be secured for a workshop, and finally, it is important to adjust the curriculum of the school as a whole.

Why the 'Compass' Method Is Needed at Khamkaennakorn School

By using the 'Compass' method in the Environment Club, Ms. Manoonsak was able to empower students to plan activities for the club on their own, and develop

autonomy, creativity and energy. Because she could see the changes the learning brought about in the students with her own eyes, she understood more than anyone else the importance of integrating the 'Compass' method into the school's education.

Among the benefits of the 'Compass' method is, first, that the school comes to feel responsibility for school management and that students come to feel ownership of their learning activities in the subject areas. She says it is important to promote the 'Compass' method through a whole-school approach because the school can be run in a way that matches the living conditions in the community.

Knowledge Gained from Visiting the Two Schools

We visited these two schools using the 'Compass' method and came away with the following points that should be heeded for implementing the 'Compass' method in Laos.

The first point is that one must use the 'Compass' method to change the consciousness of community residents. When considering sustainable development, the role of children as change agents is significant, and a premise is that children's consciousness should be changed through education. However, one needs to change the consciousness of adults at the same time. Children spend the greater part of their lives at home and in school, and one needs practices that will promote sustainable development in both of these areas of life. In other words, it is necessary to change the consciousness of the local community, including the adults who share their lives with the community's children.

Secondly, one needs to consider how to implement 'Compass' method practices in large schools and schools that are in urban areas. It naturally becomes less easy to implement the 'Compass' method schoolwide at a larger school. First, it is important for school administrators, and most of all the principal, to understand the importance of the 'Compass' method. Next, a critical point of ESD practice using the 'Compass' method is that there is 'Compass' method training within the school and that the 'Compass' method is used to activate the community. One can point to the fact that, compared with schools in the suburbs, schools in urban areas have a relatively lower level of exchange with the community. To create a broadly applicable ESD model, connections between the schools and local communities are essential and one must focus on making it easy for each community to participate in the school.

Third, the 'Compass' method challenges the 'culture of the quiet classroom', and is a learning method that aims at constructing a new educational culture; one must be aware that it is not a method that directly makes ESD happen. In other words, just by implementing the 'Compass' method in schools and communities, it will probably be

difficult to achieve the ESD goals of changes in actions and attitudes. Even if learners engaged in the 'Compass' method gain the capacity to discover connections among things, problem-solving ability, and critical thinking skills, it is certainly not easy to cause them to change their actions in their daily lives. Thus, what is essential for practices in Laos is the necessity of carefully analyzing which people come to change their actions through the 'Compass' method.

Fourth, the practices we observed in Khon Kaen Province were certainly ones implemented in subject areas and extra-curricular activities based on an understanding of the 'Compass' method. However, we came to know that in many cases, the method was not implemented to the point that the NWSE categories named by Systainability Asia were used. In practices at the two schools, more than activities involving the NWSE categories, there were efforts to develop students' creativity, critical thinking skills, and ability to discover connections among different things. It is not necessary to integrate NWSE activities into each lesson, but there are many issues to overcome in order to actually introduce NWSE into lessons in public schools, including limited class time and the limited capacity of teachers.

4. Children Village School

Overview of Children Village School

The Children Village School was established in 1979 by its parent NGO, Foundation for Children, as an alternative boarding school for children. The school is located about a one-hour drive from the center of Kanchanaburi Province and is located on about 320,000 square meters in the midst of nature. The children live in 11 different homes with educational staff, 'Mae' (which means 'mother' in Thai), 'Phor' (which means 'father' in Thai), and 'Pii' (which means sisters and brothers). At present, in February 2011, 160 children live at the school and 24 educational staff are involved with the school.

The school arose as a response to the rapid economic growth that took place in Thailand during the 1970s. The other side of this growth was the birth of slums and increasing economic disparities and various social problems. In the slums, children's rights were violated by the terrible living environment.

The school philosophy is based on Buddhist spirituality and the practices of the Summerhill School, an alternative school in England. The school is based on the educational philosophy of its founder, A.S. Neill, who believed that children should have freedom and autonomy and that adults and children have equal rights. The famous

practice of the 'General Meeting' at the Summerhill School is implemented at Children Village School and there are council meetings held every Friday afternoon.

Points Children Village School Emphasizes in Its School Management

The Children Village School emphasizes the following five points in managing the school. First, one can mention the school policies. When the school was established in 1979, it aimed at creating a place where children could be 'happy.' However, in its 10th year, it was decided that it would not only aim to create a place that provided 'happiness', but that would enable children to decide for themselves what kind of lives they would like to have in the future; the school became conscious of its role in preparing children to become adults able to take action.

Secondly, one can mention the natural environment of the school. In its farming activities, the school implements the natural farming methods of Masanobu Fukuoka that avoid use of all pesticides. Children mainly eat the organic vegetables grown at the school. In addition, there are many fruit trees on the school land, and students can pick these fruits and eat them. By living this kind of life, children experience nature in harmony with human life. The existence of a river near the school is also significant. Every day from four o'clock in the afternoon, children can bathe and play in the river. By playing in the river, the children burn off their extra energy.

Third, one can mention the implementation of education that makes children think. For example, the school creates opportunities for the children to see environments that are very different from the abundant natural environment they see at the school during field trips to Bangkok or other provinces. The teachers make use of the difference in these environments as teaching material and ask the children questions such as: 'What is different than our school? Why is nature necessary? What are good ways to preserve nature in our school?' The children think together with one another, analyze, and come up with their own answers. Through these kinds of activities, the teachers develop children's abilities to think. They say that children who discover the importance of nature increase their consciousness about environmental conservation.

In addition, the school believes that it is necessary to teach children the traditional wisdom of Thailand. So that children are not carried by the wave of globalization and monoculture, the school practices cultivating a way of thinking that places importance on Thai culture and wisdom. The school principal, Rajani Dongchai calls this way of thinking 'the right way of thinking.'

Fourth, well-being exists at the Children Village School. Through the

school's policies, abundant natural environment, and educational practices that develop creativity, children's mental and physical health improves. Also, children are not viewed as having to be 'managed' but are treated as human beings with rights equal to those of adults, and this environment of the school that respects children's freedom contributes greatly to their physical and mental well-being.

Lastly, the influence of Buddhist thought on the school philosophy is significant. Below are key words related to the management of the school.

Kelayanamita : Children have rights equal to those of adults

Chanda : [Motivation] Children's motivation to study should be respected

Viriya : Teachers help increase the motivation of children to study

Bramavihara Dhamma: Teachers should interact with children based on the Buddhist philosophy of Bramavihara Dhamma.

・Metta : Love and sincerity

・Karuna : Healing children's pain through compassion

・Mudita : Having a forward-looking way of thinking

・Upekkha : Maintaining calm and composure

If one looks at the school's philosophy and practice, one sees that the focus is placed on learning rather than teaching, that spirituality is incorporated into learning, that children experience the importance of the natural environment, that children have the opportunity to think about the economy, and that a strong social community is emphasized. Thus, one can say that the Children Village School is an ESD best practice.

Why One Can Say that Children Village School is ESD

Rajani Dongchai, the principal of the Children Village School, says that the school has been able to continue for over 30 years because it has a 'good environment'. By environment, she means the abundant natural environment, an environment of love and compassion, and an environment of freedom. In addition, the concept of the school is sustainable. By having the General Meeting, they have succeeded in bringing in democratic education. Through this as well as the abundant natural environment and Buddhist ideals, the school is able to bring out the true best nature of the children. Also, the school is securing sustainability from a financial perspective. 80% of the school's operating costs come from Thailand and the remaining 20% is raised from Japan and other foreign countries. Because the children are so kind to visitors to the school, this also helps sustain donations to the school.

One more point to note concerning the sustainable management of the school from an economic perspective is the excellent support given to children who graduate

from the elementary school concerning their future path and employment. All of the work at the school outside of preparing breakfast is considered 'labor.' For each task of labor children do, a pre-determined amount of money is added to children's accounts. In addition, a portion of children who graduate from primary education at the Children Village School go on to secondary school on a full-time basis, while others commute to school on the weekends. The students who commute to secondary school on the weekends have job training at Children Village School on the weekdays. Similarly, those that attend school during the week engage in making batiks and other products to earn money at the Children Village School on their days off. The children use the money they save to attend university or when they search for a job. In addition, for those children thinking of going on to university, the Children Village School will match the amount of money they have saved in their accounts as a donation and this helps the children attend university.

Children Village School has only kindergarten and primary school, but children live there until they have completed secondary education and prepare for going out into society. The Children Village School assists children both financially and psychologically so that when they become adults each is able to live independently within society. One can understand from Chart 2 that the existence of the Children Village School has significant meaning within Thailand. Many of the children that come to the Children Village School are from families that have suffered the ill effects of rapid economic growth on Thai society. In order to turn these unsustainable effects of development around, the school takes in children who have come from environments that cannot be considered good and enables them to develop in an abundant natural environment. One might say that the school is serving as a 'social safety net' within Thai society. The school takes children who have been living in an unsustainable society, enables them to live within the sustainable environment of the school, develops them as human beings whose humanity includes the idea of sustainability, and then returns them to the broader society. One graduate is living as an organic farmer in the same Kanchanaburi Province and comes to the school on weekends to donate a large amount of vegetables, while another is the CEO of a ceramics factory. The children are living independent lives within Thai society. ESD practices at the Children Village School involve not just incorporation of the elements of ESD, but the development of human resources who can be active in the midst of Thai society; thus, the school is playing a part in forming a sustainable society in Thailand.

Principal Dongchai is now making efforts to build a national alternative education network in Thailand and to disseminate her experiences with the practices of the Children Village School across the country. She is building linkages with relatively

small schools, and is working to integrate Thai cultural traditions and wisdom into school-based education, to increase the opportunities for community members to be involved with the school and for children to have exchange with them, and to improve the school, including using it to vitalize the surrounding community. In addition, the Children Village School has set up a home schooling system that is permitting further dissemination of the school's alternative education activities.

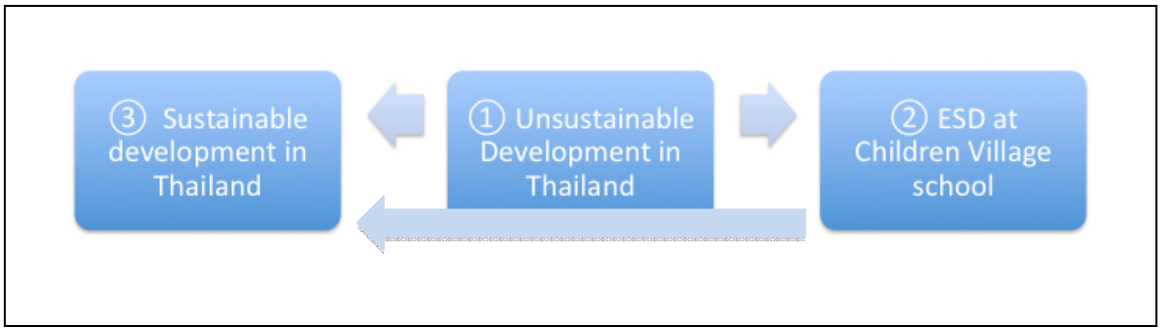


Chart 2: The Children Village School, which exerts an influence on society

Conclusion – Hints for the Laos Project

One can mention two points that would apply when implementing ESD practices in public primary schools in Laos. First, one needs to describe a blueprint for the elements that would constitute a sustainable society in Laos. In the case of the Children Village School, this included the Buddhist teachings – in other words, incorporating spirituality into the school philosophy – reviving traditional wisdom, and living a life of well-being in a natural environment. It is important for the people involved in implementing the project in Laos to hold a common understanding of the elements that would make for a sustainable society in Laos.

Next, one should move ahead with practices that are based on these elements of ESD for Laos. In the practice at Children Village School, one can mention a school life centered on learning, democratic education, understanding of equal rights between children and adults, freedom, autonomy, and the reform of teachers' consciousness.

In Laos, a similar Buddhist culture to that in Thailand has firm roots from the past. As mentioned by those at Chulalongkorn University, Laos also has a strong 'culture of the quiet classroom.' In over 30 years of practice at the Children Village School, the importance of the Thai culture has been maintained while creating a 'new culture.' For example, while there is deep understanding of Thai traditional culture at Children Village School, the school also practices developing of children who can become 'change agents' for Thailand as it moves into the future. One can say that this practice

is truly education for sustainable development. The school does not look in front of them and focus on the period of childhood, but is conducting education that is focused on the life-long education of each child. Thus, the center of learning there is living and the school's practices are an example of education aimed at promoting independence and that lays the foundation for life-long learning. There are not a small number of hints for educational development in Laos in this example of long-term sustainable education.

Report on India Survey
-Navdanya-

Navdanya Overview

Navdanya is located in the suburbs of Dehradun in Uttarakand State in the northeast part of India. The organisation was established by Dr. Vandana Shiva, winner of the Rights Livelihood Prize, in 1987 (the organisation was officially registered in 1991).

As a result of the 'Punjab Violence' and 'Bhopal Tragedy' of 1984, India experienced a paradigm shift concerning agriculture. Navdanya researches 'Non-Violent Farming' that protects the earth and farmers, and through seed bank activities that preserve seeds that came to the verge of extinction following the green revolution, the organisation aims to preserve biological diversity and revive the ecosystem.

Vandana Shiva is vigilant about the dangers of the large-scale agriculture using chemical methods that was introduced during the green revolution. Chemical farming creates a vicious circle that has even led to suicides among farmers (refer to the following page – Chart 1: The Vicious Cycle of Chemical Farming). Chemical farming not only kills pests and the land, harms the ecosystem, and leads to a monoculture of species that can tolerate chemical fertilizers; farmers who have not been able to pay back loans for purchasing high-priced seeds, pesticides, and machinery have drunk pesticides and taken their own lives. Since 1997, as many as 25,000 farmers have committed suicide. In addition, as a result of the sudden urbanization accompanying economic growth, youth are moving to the cities and the number of farmers is decreasing, which has made this cycle even worse.

Shiva explains that she started preserving seeds because people's survival was in jeopardy. Currently, the organisation has established seed banks in a total of 54 locations in 16 states by cooperating with various NGOs. The organisation is preserving 3000 types of rice seeds, 75 types of wheat seeds, and several hundred of vegetables and grasses, among others. In the approximately twenty years since its establishment, Navdanya has held training and workshops about organic agriculture, and it has a network of more than 500,000 farmers who have participated. Navdanya, which began with a seed bank, currently engages in the following projects:

- 'Earth Democracy': Seeds (Seed Bank)・Soil・Water・Food Sovereignty
- Organic Movement
- 'Diverse Women for Diversity'

- Fair Trade
- Climate Change
- Education: Bija Vidyapeeth ('Earth University') and the 'Seeds of Hope, Gardens of Hope' school gardening project

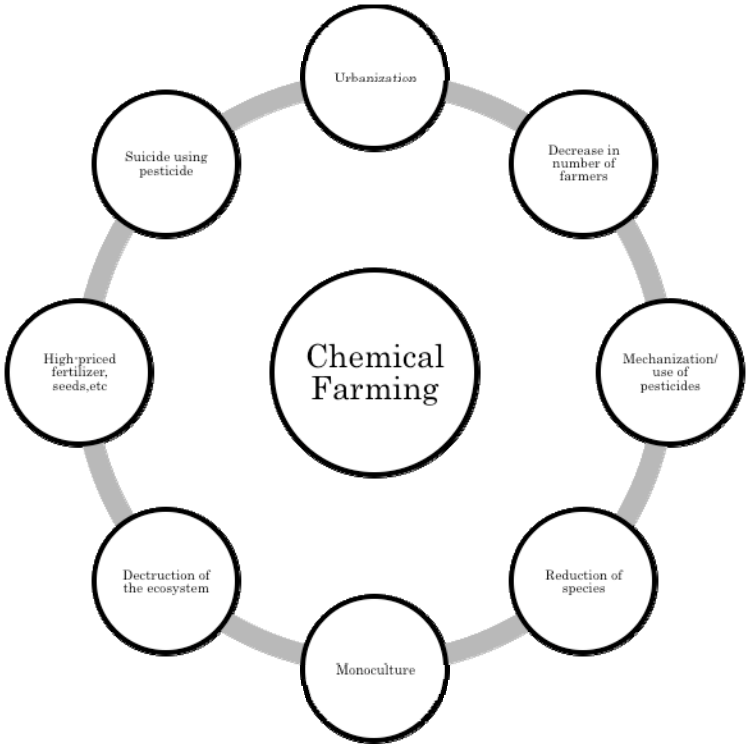


Chart 1: The Vicious Cycle of Chemical Farming[1]

The nucleus of Navdanya's activities, which span across various fields, is *diversity*. Whether with regard to seeds or other matters, because the earth has diversity, one does not need to be bound to a single sphere and one can choose one's own path in life from various choices. This means that people do not have to rely on things like chemical fertilizers or large-scale corporate agriculture and can farm and live independently. The activities of Navdanya through seed banks lead to a 'correct' cycle for the earth's ecosystems, the rights of the communities and people, and for preserving the environment.

Through seed banks, Navdanya not only saves each individual type of seed, but revives the ecosystem and preserves diversity, and guarantees the ability for each

[1] Interview with Navdanya Representative, Dr. Vinod Bhatt (February 9, 2011); graphic created based on Navdanya Web site

and every farmer to have a stable and independent life.

Navdanya's Sustainability

Today India is experiencing economic growth while losing some of its unique natural features and cultures. Within this context, Navdanya is helping those who are in a weak position – such as seeds, farmers, and women – to be independent and autonomous. To do this, the organisation raises consciousness that even small things have rights and demonstrates alternative ways of farming and living that are outside the mainstream.

One of the reasons Navdanya has maintained its sustainability is the solid philosophical foundation supporting it. Dr. Vinod Bhatt, one of the representatives of Navdanya, says that the organization is deeply rooted in Gandhi's philosophy and has been strongly influenced by it. The philosophical foundation that supports Navdanya is expressed in Chart 2.

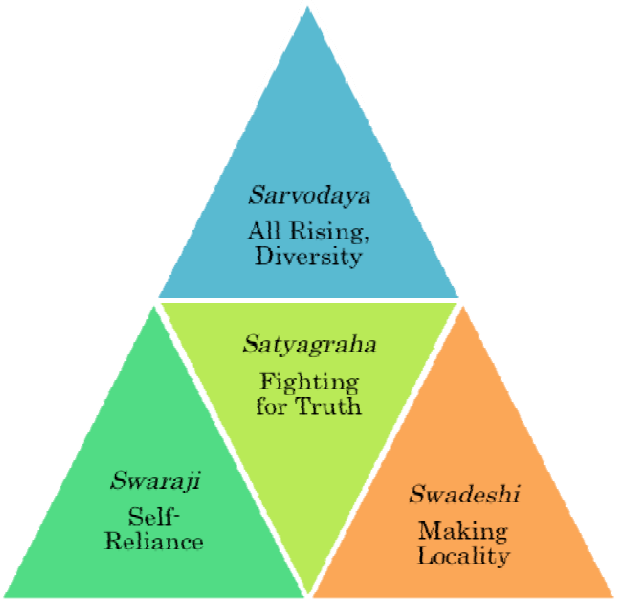


Chart 2: Gandhi's Philosophy Supporting Navdanya[2]

The nucleus and foundation is *Satyagraha* (Fighting for Truth), which expresses the needed spiritual condition. This solid spirituality is held in order to resist the powerful wave of mainstream capitalism and globalization. Shiva explains the importance of forging and maintaining a heart and spirituality that is not defeated by great force.

Next is *Sarvodaya*, which expresses the social condition in which plants,

[2] Taken from notes made during the 'Ghandi and Globalization Course' at Navdanya's educational institution Earth University, 11/24-12/4/2010.

animals, soil, water and all the things living on earth have rights and the various things co-exist in diversity. This way of thinking asks that the individual turn his or her eye to look at all of the various possibilities s/he has.

Third is *Swadeshi*, which represents 'locality' and mainly focuses on the economic aspect. With the present trend to look towards the cities and globalization, this way of thinking aims to revive the special products and culture of one's home area and to create vibrant local economies.

Lastly, *Swaraji* demonstrates the political aspect. It represents a condition in which one does not depend on the mainstream and cultivates one's own power to make judgments and one's own autonomy.

All of these elements apply at the individual, community and national level. The four each prioritize small things and the local culture. These four sides need to develop in harmony, and when *Satyagraha*, which expresses spirituality, serves as a foundation and the other three facets are grouped together, the pyramid in Chart 4 is formed. One can think of the content of the pyramid as being the happiness and health of individuals, the society, and the country. If any of these facets is lacking, the balance among the three sides will be destroyed and the contents inside will be broken. In this case, a society feels emptiness, uncertainty, dissatisfaction, discomfort, etc.

As an outgrowth of starting the seed banks, Navdanya is now engaged in a variety of activities. The organisation is helping farmers engaged in small-scale agriculture to live healthy and stable lives by showing them the truth of the creative power of the earth and by promoting organic farming methods that preserve biological diversity. In the present society in which things like industrialization and urbanization have made the connection between human lives and the earth harder to see, Navdanya helps people to discover that they are living in the midst of a 'Whole System' with connections with many different types of things. Put another way, one can say that Navdanya provides a transformational opportunity to alter attitudes, actions and lifestyles – the goal of ESD. The transformation from modern agriculture using things like machinery and chemical fertilizers to small-scale, organic agriculture through 'small things' has brought about a change in people's lifestyles, actions and attitudes.

One can say that Navdanya shows us the possibility of change from a two-dimensional worldview to a holistic worldview. It seems that this worldview is also the key for understanding Navdanya's sustainability. Further, the success of this transformation appears to be due to people's steadfast decision-making and strong spirituality rooted in the earth.

The Possibility of Technical Transfer from Navdanya

According to the International Implementation Scheme (IIS),[3] which provides indicators for the Decade of Education for Sustainable Development (DESD), the four elements that comprise sustainable development are society, environment, the economy, and culture. As stated, they are mutually connected. Nonetheless, because many ESD projects lack harmony and have one element that stands out, it is often difficult to discern the balance and mutual relationship among the four elements.

In the case of Navdanya, we were able to see a concrete example of this balance and mutual relationship. As stated earlier, because Navdanya has a solid spiritual foundation for its activities, even if the activities develop in a variety of ways, we can discern the cohesion among the activities. This cohesion is clear in Dr. Shiva's phrasing 'Earth Democracy',[4] which refers to building a society in which it is understood that all things on earth have rights and co-exist, and that no one violates or dominates the others. Navdanya aims to create a society that is in harmony through organic connections among the four elements of environment, society, the economy, and culture.

It is true that Navdanya's activities center on the preservation of seeds and organic agriculture, and that can be viewed as having a strong emphasis on the environmental element. However, one can view the activities that support people's decision-making, economic independence, and autonomy as organically connecting the environmental, economic, social, political and cultural aspects. Thus, Navdanya is a best practice in showing a way to promote sustainable development that maintains balance among the four elements. One can highlight Navdanya's philosophy as the factor that supports these activities.

Mahatma Gandhi's philosophy of seeing the whole from a small part is the foundation supporting Navdanya. Gandhi's four elements (refer to Chart 4) that are mutually connected support Navdanya's activities and give them direction. A special characteristic of this philosophy is that it represents sustainable development not from the prevalent analysis using the individual elements of society, the economy, and the environment, but through the relationship of the four elements via the conditions and characteristics of diversity and spirituality, locality, and autonomy. In other words, it examines sustainable development based on how each of the elements is connected within the system as a whole.

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[3] UNESCO. *UNDESD International Implementation Scheme*. Paris: UNESCO, 2005.

[4] Shiva, Vandana. *Earth Democracy: Justice, Sustainability and Peace*. Cambridge, MA: South End Press, 2005.

Because the special features of each locality are used in Navdanya's activities, it is difficult to transfer techniques and skills directly to other places. However, Navdanya's philosophy is a good reference for how we think about sustainability. In particular, one should note that the environment is not given any special note in the '4 elements'. This is probably because it is considered just a matter of course that if one lives upon the earth, one lives together with nature and this may be thought of as a premise for the activities. One can also say that the four elements of *Satyagraha, Sarvodaya*, *Swadeshi*, and *Swaraji* are not bound by the spheres of the economy, society and environment, but organically connected within the harmony of the whole and its connectedness.

Whether at the individual, societal, or national level, the Navdanya example additionally shows that spirituality is essential for activities connected with sustainability. This is not only because spirituality forms a foundation to support activities and people, but because it is deeply connected with the earth's infinite powers and humanity's search for universal values, and because it can serve as a compass guiding the way so that one is not swallowed by powerful currents like globalization.

We believe that when we implement sustainable development and ESD, we need to do more than provide skills, knowledge and methods to alleviate or solve various problems the world faces such as environmental destruction, the violation of human rights, and war. We need to question what is at the essence of the foundation of these problems. This is difficult to discuss through separate spheres such as the environment, economy, or society. The answer for commanding a broader view appears to be in a more horizontal and dynamic place beyond this framework. The Navdanya example shows the limitations of the IIS four spheres – especially the three of environment, economy and society – in discussing sustainable development. One needs to think about development and ESD within the connectivity that exists, based on a holistic worldview.

Compass Schools

A Global Network Supporting Schools on the Journey towards Sustainability

A Draft Concept and Working Document incorporating

Concept Paper BETA Version 5.0

Compass Education: Joel Bacha and Robert Steele

Compass Schools Network: School Sustainability Self Assessment

Contributions and drafting from Lister Hannah (1.11.10)

Introduction

The Central Role of Schools in Sustainable Development

We stand at a critical moment in Earth's history,
a time when humanity must choose its future.
As the world becomes increasingly interdependent and fragile,
the future at once holds great peril and great promise.

— The Earth Charter—

Schools, both as centres of learning and as central institutions in their communities, are essential to the process of humanity choosing its future. If there is one place where the "great promise" cited in the Earth Charter – the promise of sustainable development – is most likely to be found, it is in the world's schools.

Sustainable development is a dynamic process that enables people to realize their potential and improve their quality of life in ways that simultaneously protect and enhance the Earth's life-support systems. The vision of sustainable development is now well described by a number of agreements and declarations that have been widely adopted the world over, including the Universal Declaration on Human Rights, Agenda 21, the Global Compact, the Millennium Development Goals, and of course the Earth Charter itself, recognized as a foundational reference document for the United Nations Decade for Education for Sustainable Development.

If we are to meet the challenge to human development mapped out by these documents and agreements, the implications for schools are substantial. Schools, as learning communities, need to model the vitsion of a sustainable world, in their educational practice as well as in their management, and governance.

However, most schools, are still searching for, or they have no understanding of the roles and appropriate structures that will help them to realize that vision. They need to move more definitively away from the prevailing traditional, transmission-styled model of education to an education that is transformational in its focus. This represents a significant paradigm shift to a model that mobilises the active participation of everyone in the school community: governing board, management, teaching and support staff, students and parents, neighbours and local government.

For the sustainability vision to be achievable, a spirit of inclusivity, compassion, and mutual respect needs to pervade all aspects of a school's operations, engaging, enabling and empowering all to learn,

to create common goals, and to work together to achieve them. The students thus become an integral part of a whole-school learning community, not only learning about sustainability in the classroom but seeing and experiencing it being modelled and practiced in all that happens in the school and beyond. Schools working towards this vision thus integrate sustainability into school planning, curricula, teaching and learning, and try to embed it in the school infrastructure and maintenanace.

School leaders have a special responsibility to guide their institutions toward this holistic and participatory approach to the planning and practice of school sustainability. Their aim clearly needs to be to lead a whole-school approach that ensures that sustainability practices are embedded in all aspects of its mission, governance, operations, and teaching and learning.

Sustainable schools offer dynamic and vibrant learning environments because they address real-life challenges in real places with real people. Good practices are built through a cycle of strategic goal setting, action and assessment. Not only are students being helped to understand our impact on the planet, but they contribute to decision-making and can experience in the everyday life and operations of the school community sustainable practices being implemented.

The values and attitudes advocated in the classroom become habituated in the daily living of all. Schools ensure that they practice what they teach. Values are reinforced in policy and daily actions, and consequently are “caught and not just taught”.

The approach of School leaders must be:

- well-founded, practical, and relevant to immediate as well as future needs
- adequately resourced with existing and developing expertise and with long-term planning and financing
- well-suited to monitoring and evaluation to facilitate reflective processes
- responsive, open-minded, and appropriate flexible
- and a determination to be truly transformative, with the capacity to generate creative new thinking and practice.

The pedagogy at the heart of education for sustainable development reflects what is increasingly accepted globally as current best practice:

- Student-centred, acknowledging the multiple-intelligences we all possess
- Inquiry-based and constructivist, drawing on what we understand from neuroscience about whole-brain experiential learning, embedding the learning of content in context, integrating subject matter where possible, and thereby promoting:

    - integrated-interdisciplinary instruction that reaches across traditional boundaries between disciplines;
    - community-based investigations as learning experiences that offer both minds-on and hands-on experiences through service-learning opportunities;
    - "place-based education' whereby the local natural and community surroundings act as a "venue" for connecting together these proven pedagogies to improve teaching and learning.
- Encouraging creativity and the skills of systemic, critical, and holistic thinking, with a foundation in the habit of reflection
- Combining independent and cooperative learning, ensuring collaboration wherever appropriate, allowing learners to develop the capacity to communicate, to share and to discover together.
- Focusing on developing compassionate individuals and caring, cohesive communities whose humanity is expanded by differences in gender, race, language, or other life circumstance
- Framing the teachers as guide-by-the-side rather than sage-on-the-stage, a co-learner and a facilitator in empowering the student to take ownership of his/her learning.

In summary, a whole-school approach to sustainability emerges from the school vision and is articulated in all facets of school life:

- how the school is organised, governed and operates.
- school design (within the limitations of existing structures)
- development and management of the school grounds
- efficient use of resources by the school (water, energy, products and materials)
- enhanced communications within the school community and connections beyond with the local community and other institutions
- conservation and protection of the natural environment and heritage values in the school and its grounds
- assimilation into the teaching and learning of sustainability and sustainable development

The school that embraces sustainability should also focus on the following:

- the social and emotional needs of the whole school community (students, teaching and non-teaching staff, parents)

- value and respect diversity
- promote healthy living
- protect the local and global environment, act locally and think globally
- foster the confidence not only in the students, but in the staff and the broader community, that they can all make a difference.

Compass Schools

The Compass Schools Network embraces this philosophy as the foundation for a program of international collaboration and discovery, using the Compass of Sustainability as a common framework for helping primary and secondary schools orient and direct themselves in their engagement with the great challenges of our times.

The Compass School process is holistic and consistent with the characteristics of transformative education, as expressed in the 1996 report to UNESCO from the International Commission on Education for the Twenty-first Century, *Learning: The Treasure Within.* This report introduced four pillars for sustainability education that go beyond the school experience itself and extend throughout one's life. These four pillars are: 1) Learning to know; 2) Learning to do; 3) Learning to live together; and 4) Learning to be.

A Compass School puts these four pillars into practice by involving the whole school community – students, teachers and other staff, members of the local community, parents, local authorities, local media and businesses. It encourages teamwork and helps to create a shared understanding of what it takes to manage and run a school in a way that contributes to sustainable development at every level – global, local, and personal.

Finally, the concept of a Compass School includes the proposition that there is a fifth pillar: ***Learning to transform.*** A Compass School practices a transformative type of education that permeates the entirety of the school community reaches out through a school's network connections to the local community, and beyond.

The big picture

When we think about all of the global challenges that lie before us today, they are immense: climate change, natural disasters, poverty, illiteracy, food security, poor health and sanitation, etc. The list can go on and on. What's important to remember about global challenges, however, is that almost all are not isolated issues, but are connected to a myriad of invisible and often unrecognized linkages. When looking at an issue from different perspectives, most are connected through cause and effect

relationships. For example, natural resources can influence jobs, jobs can influence income, income can influence what we eat, what we eat can influence nutrition, nutrition can influence health, health can influence how we learn, and so on.

A key step towards addressing sustainability is learning to understand these connections and the systems they belong to – the climate system, the financial system, the school system, the teaching system, the respiratory system, etc. Each system is made up of a series of cause and effect relationships, such as the relationships of the climate system which can influence, for instance, the local water cycle, agricultural production, species migrations, and outbreaks of disease epidemics. When the relationships within the climate system are balanced, global weather patterns are fairly predictable. When these relationships change, however, weather patterns can shift causing unexpected natural disasters including floods, typhoons and even landslides. Connections between global issues and the systems they create can be found almost anywhere. They are local and global, economic and social, cultural and environmental and link generations. Understanding how systems work can help students and schools make better decisions to minimize harmful changes and promote well-being in their communities.

What is a Compass School?

A Compass School is thus a school that strives towards being a Sustainable School and that uses, as its whole-school framework or lens, the Sustainability Compass, developed by Alan AtKissson and others as a simple holistic way to engage the key stakeholders and issues at a gathering point, to chart a consensus direction to their sustainability vision. The starting point for a Compass School is the metaphor of the Compass itself: a tool for assessing the present situation and setting the direction towards learning and living more sustainably

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

- **N = Nature**
  The natural systems on which all life depends

  Sustainability in this dimension refers to living within the Earth's physical and biological limits (its life-support systems), and contributing to the healthy functioning of its ecosystems.

- **E = Economy**
  The economic systems that provide humanity with goods, services, and meaningful work

Sustainability for this dimension refers to maintaining economic viability, vitality and prosperity.

- **S = Society**
  The social and cultural systems e.g. school communities that provide cohesion, identity, security and freedom**.**

  Sustainability for this dimension refers to supporting social stability, inclusiveness and equity, and social cohesion..

- **W = Wellbeing**
  The health, happiness, and quality of life for individual people and their families

  Sustainability for this dimension refers to making individual health, opportunity, fulfilment and happiness possible through the exercise of wise choices.

These "Four Compass Points," provide a simple, clear, integrated, and comprehensive structure for sustainability learning, as well a platform for the sustainable management of schools as institutions that actively model the behaviour that they seek to develop. The Compass can be used

- as a frame and guide for setting school policy in line with sustainability principles, help manage school operations for more effective embodiment of the sustainability ideal and help develop measurable indicators of progress.
- as a holistic lens or mental model in classroom lessons, or used to help frame the entire curricula for alignment with education for sustainable development (ESD).
- as a common symbol, a metaphorical "centre of gravity," around which everyone in the school community can gather and feel part of this great civilisational journey toward a sustainable society.

Starting the Journey: implementing the Sustainability Compass

The ***Compass Schools*** approach and methodology translates these general dimensions of the Sustainability Compass into the more specific working areas of school life, which we call ***Compass School Portals.*** The Portals encompass areas of school management, governance, finances and fundraising, resource management and consumption, working and learning environment, personal health, environmental awareness and action, networking and participation, and curriculum design and pedagogical development.

There are five key access or entry points (Portals) into such operations in order to start implementing the Compass and the journey to becoming a Compass School. These are operational areas where the Compass and the ISIS (Indicators, Systems, Innovations and Strategies) approach can be applied, new ideas developed and action taken both within the school and outside of the school, and how a Sustainability Culture can be cultivated. These areas encompass the following:

1) *School Governance and Management*
2) *Teaching and Learning*;
3) *Administration, Operations and Support*;
4) *Buildings and Grounds*; and
5) *Networking and Partnerships*.

With the Portals identified, the obvious question arises: after attending a Compass Schools workshop where do we start? Do we try to do everything at once, or do we start where we think we have the most leverage for change right now? The answer of course depends on the conditions present in the school, especially with regards to school leadership both at the administrative level and also within the teaching teams (i.e. Head of Departments).Ultimately there are two strategically critical Portals that bear the most potential for commencing the process: Governance and Management, and Teaching and Learning.

1. Governance and Management.

Early in this paper, in the introductory paragraphs, we emphasised the importance of school leadership, and if the conditions are right the Governance and Management Portal is the critical one to activate, in order to drive the Visioning of what the school wants to look like as a sustainable school, to incorporate sustainability into the Mission statement; and, through this process, engage, enable, and empower the stakeholders so that together the support for the developments in other Portals and across the school can also be efficiently and effectively activated. The Board and the Management, given the authority vested in them, can assume the responsibility for realising the Vision and modelling education for a sustainable future.

Good governance occurs where decision-making is distributed across the school community and involves students, parents and others in appropriate ways. In doing so, the school begins to maximise the use of its physical and human resources in a manner, which is economically, ecologically and socially sound

In practice, this might start in this way. First, the Head of School, his/her executives, and key thought leaders from among the Board, parents, teaching and support staff, and student leadership should become familiar with the Compass, and able to convey its meaning and usefulness to other

members of the school community. This group can serve as a steering committee or "sustainability leadership group" for the Compass School process.

To start, this group could, for example, take at least a half-day to orient themselves to the Compass, either on their own or with the help of a skilled facilitator. They could start with an inventory of their assets and concerns within each Compass Point, and use this as the basis for the creation of a future Vision of their school, balancing the four Compass directions.

This process sets the stage for the establishment of clear goals and longer-term outcomes expected to result from the Compass School journey, as well as milestone destinations along the way. It will lead to the strategizing of how to address and facilitate the accessing of the other Portal

The group may also go a step further and identify sustainability management indicators for the school. The use of regular meetings or special project teams can advance the process and add value to school life, without feeling like an extra burden. (Note that the tools and manuals available to Compass School Network members will help guide this process.)

Once this framework is established – or even while it is being established – this leadership group can explore critical linkages among the Compass Points and their respective indicators. They can begin to build up a more comprehensive and systemic picture of school operations, from classroom to community. And they can begin a search for innovative new projects, initiatives, policies and programs that will help guide the school toward sustainability. As a leadership group, they can also plan and strategize for the successful implementation of these initiatives.

2. Teaching and Learning

However, the reality is that the Board and Management are often not ready to actively lead in taking the first steps to becoming a Compass School. In such instances the best approach, according to innovation diffusion theory, is the simple and small approach first… meaning that starting at the place that seems most optimal for using the Compass concept, tools, frame with observable results and perceived advantage easily evident.

Most often this has been found to happen within one's classroom to frame a lesson. This does not in any way mean rewriting or in any way subverting the curriculum. However, by looking at the area to be taught simply using the Compass as a lens through which to engage student in systemic thinking and by so doing enriching their understanding of the subject matter. It provides for a value-added learning experience.

A successful education programme will effectively integrate curriculum, teaching and learning processes and pedagogies. An important part of learning process is the 'where' that learning takes place. There are many diverse and interesting learning environments and opportunities, both within

schools and the broader outside communities. Moreover, sustainability education values practical hands-on, experiential and inquiry-based learning that also involves a collaborative process of inquiry, action and reflection on our knowledge, values and action in order to continuously improve sustainable behaviours.

Once the idea is introduced to others on the teaching team, then it can be scaled up to possibly be used in framing curriculum or in planning, and discussion can be initiated with the school leadership and the potential to impact on school governance and policy making.. It may also "spill over" into the other Portals and become reflected in aspects of the school such as buildings, operations, landscaping and the relationship with the outside community The adage, "from small acorns do large oak trees grow", has been shown to happen in schools.(See Appendix...)..

Sometimes the circumstances may be such that one of the other Portals can be most easily accessed to start with, but the limited experience has shown that the above two portals are the ones that seem to be the most appropriate places to begin. A brief introduction to the three other portals follows.

3. School Administration, Operations & Support

Schools can move towards becoming sustainable organisations by committing to identifying, conserving and improving the environmental values of their school site, and by reducing their ecological footprint. As a starting point schools can reduce waste, minimise energy, transport and water usage, increase recycling, encourage biodiversity in the school grounds, use sound purchasing practices and ensure the cafeteria products are environmentally appropriate and healthy. Moving towards sustainability needs to become an important feature of how the school organises its daily operations. The savings made can be used for other sustainability initiatives.

4. Buildings and Physical Surroundings

Schools are often judged by the physical appearance and presentation of the grounds and buildings. Increasing the diversity and extent of vegetation cover in school grounds not only enhances the image of the school but also maximises the potential of these spaces to provide educational and environmental experiences to the students. Students, staff and parents can be actively involved in the sustainable management of the grounds through activities such as habitat creation, mulching, vegetable gardening, landscaping, productive enterprises (if appropriate) and litter reduction. The opportunities are limited only by the imagination and enthusiasm of the school community. Although schools may be limited in what they can do about the design of their existing buildings, the refurbishing of older buildings should incorporate energy-efficient elements. For most schools it is how they use the buildings and grounds that will have the most impact. New buildings should be

designed with energy conservation as a priority.

5. Networks and Partnerships

Sustainable development is best achieved through collaborative action with the local and broader community. This might include partnerships with other educational institutions, local councils, businesses, industry, and community groups and networks. This links student learning to the workplace and to local environmental and social issues, and allows students to become active and involved participants. Schools that have fostered partnerships have sometimes gained access to resources not otherwise available to the school.

A strong engagement with parents, through their stakeholder involvement within the school community, can reap a rich dividend in terms of their connections within the larger community beyond the school to which they also belong. They can be significant catalysts in helping the establishment of the networks and partnerships mentioned above.

Conclusions: Developing a School Culture of Sustainability

The activating of the Portals contributes to evolving an increasingly embedded school culture of sustainability throughout the school. It leads not only to the promotion and practice of sustainability principles, attitudes, values and perspectives, but in doing so sees the implementation of sustainability tools, methods, frameworks, symbols and language integrated into daily life. It also ensures the monitoring of the school's levels of sustainability in all four dimensions, facilitated by measureable indicators, and it promotes a holistic environmental accountability.

Moreover, the Compass School process, by bringing people in the school community together from all quarters, will create innumerable positive spin-off effects as well, as people get to know each other in a new, meaningful way. They will find new ways to collaborate, new ways to help each other, new common goals and interests. Building school sustainability will also build school social capital and in so doing act as a transformative agent.

The Benefits of Participating in the Compass Schools Network

Consistent with the transformative emphasis on learning, the benefits for schools participating in this Compass Schools program include:

- An increase in participatory learning approaches that engender students skills and competencies for critical thinking, intercultural perspective, participation and citizenship

- Integration of Environmental Education and Education for Sustainable Development across all key learning areas in the curriculum
- More participatory and democratic decision making mechanisms which have engaged the whole-school community (i.e. from governing board and school management/principals to include teachers, caretakers, parents and students)
- Reductions in a school's "ecological footprint" (its burden on natural systems and resources) and increases in its "handprint" (its contribution to the restoration and sustainability of our world)
- Regular monitoring, reflection and evaluation procedures which inform future actions (which recognize the school not just as a center of learning but as a learning organisation itself
- Development of reciprocal community, family and stakeholder partnerships.

The Resources Available to Compass Schools

Compass Schools are, first and foremost, their own best resource. By participating in a network, they gain access to the inspiration, ideas, and experiences of other schools like them, around the world, seeking to realize the sustainability vision.

Compass Schools also have access to a specially adapted version of the *ISIS Accelerator* toolkit for sustainability. These tools provide teachers, administrators, and students with practical support for many of the key tasks involved in moving an institution toward sustainability, including meeting and stakeholder facilitation, indicator development, teambuilding, planning, and change management. This toolkit uses the internationally adopted ISIS Method, which guides organizations through a four-stage process (Indicators > Systems > Innovation > Strategy).

Compass Schools are also supported by the Compass Schools Website, which highlights case studies and practical examples of progress achieved by participating schools. It also provides a web-based forum and database for sharing experiences, asking questions, getting advice, and finding helpful resources and information – including many other tools and methods for sustainability learning and management. The ISIS Method makes it easy to integrate and adapt any method into an overall sustainability program.

Members of the Compass Schools Network get priority access to a highly skilled global team of sustainability educators and facilitators, who can provide professional support if needed. The Compass School Facilitators can work on-site or virtually (via internet and telephone) to provide additional guidance and advice on planning and implementation.

Finally, Compass Schools can also network beyond the boundaries of the education sector, and make connections with businesses, international agencies, and NGOs that can support the practical implementation of sustainability programming and further inspire students, teachers, and administrators.

Becoming a Compass School

Joining the Compass Schools Network involves a simple registration process at the Compass Schools Website, and the payment of an annual membership fee of US$ [PRICE STILL TO BE DETERMINED].

For this fee, the School receives:

- Full membership privileges at the Compass Schools Website
- An academic license for unlimited use of the *ISIS Accelerator* tools, in the classroom and in school management (this license continues even if the school chooses not to continue its membership in the Compass Schools Network)
- Priority access to support from certified Compass School Facilitators, sustainability professionals who can help with planning, implementation, meetings, and more (support costs extra, but network members receive member prices as well as priority attention)
- A focused channel for linking up with other schools around the world who share the vision of sustainability, and who have adopted the Compass as their symbol and frame of reference for making the journey
- Links to many other useful and inspiring resources

To join, visit [WEBSITE URL TO BE DETERMINED], or send an email to <compass.schools@atkisson.com>.

We look forward to welcoming you into the community of Compass Schools worldwide.

Concept paper developed with contributions by:

Lister Hannah, Senior Associate, AtKisson Group, and President Emeritus, Prem Center, Thailand

Robert Steele, Senior Associate, AtKisson Group and Founder, Systainability Asia

Joel Bacha, Compass Schools Steering Committee,

Isak Stoddard, Researcher, Uppsala University, Sweden

Ben Roche, Senior Associate, AtKisson Group

Kristina AtKisson, Senior Associate, AtKisson Group

Alan AtKisson, President, AtKisson Group, Editor

APPENDIX ONE

The Origin of the Sustainability Compass and Compass Education

The Sustainability Compass was first developed in the late 1990s by Alan AtKisson, founder of the AtKisson Group, as a contribution to an international research program on sustainability indicators (AtKisson, 2008). The framework then grew from a platform for indicator development for communities, into a general sustainability framework with several different applications, including Corporate Sustainability/CSR assessment and management, integrated water resources management, general stakeholder dialogue management, and eventually, Compass Schools and Compass Education. The directions "North, East, South, West" of the Compass are renamed Nature, Economy, Society, and Wellbeing, drawing on the pioneering theoretical work of ecological economist Herman Daly (Daly, 1973; AtKisson and Hatcher, 20O1

The Compass Education concept began initially under the name 'Compass Schools' which grew out a conversation following an AtKisson Sustainability workshop targeted at community development practitioners. The workshop was attended by a number of teachers, administrators from several international schools as well as from WWF-Thailand and the Ministry of Education in Lao PDR. With so many educators present, an intuitive link was made between the cross-over implications of the Sustainability Compass, methods and tools for Education for Sustainable Development and transformative education.

The Sustainability Compass began to make its way into Schools in Asia in late 2008. Not long thereafter the Compass Schools concept was formally articulated by AtKission Group Senior Associates, Alan AtKisson, Robert Steele, Lister Hannah and Ben Roche. Compass Schools were officially launched in January 2009 as part of AtKisson Group's contribution to the UN Decade of Education for Sustainable Development (DESD).

Compass Education then emerged in August 2010 to encapsulate AtKisson's work with Compass Schools (K-12 educational institutions); Compass Universities (higher education), and ongoing support to Ministries and development practitioners. Compass Education provides a formal platform for: 1) sharing among schools and universities already using the Sustainability Compass to promote holistic thinking about sustainability; and 2) supporting new education institutions and development practitioners who wish to engage with the Compass.

APPENDIX TWO

Charting a Course toward School Sustainability

At the heart of the Compass School process are the four interdependent Compass Points of Sustainability. Just as a map is incomplete if it is missing one "direction," all four Compass Points are equally important to the realization of school sustainability.

N is for Nature

All human systems are dependent on our natural environment and our ecological heritage. The Earth's natural systems are the source of all life and all the resources we need and, as we have learned in recent decades, the sink of all our wastes. As sinks fill up and resources become depleted, the functioning of these natural systems is seriously threatened.

Sustainability in this dimension refers to living within the Earth's physical and biological limits, and contributing to the healthy functioning of its ecosystems.

Determining how all aspects of the school's operation (administrative, managerial, educational, social) impact on this dimension of the school's sustainability involves deriving measurable indicators of sustainability from such factors as:

- The quality of the natural resources under a school's stewardship, including the air, the water, the soil, the landscaping and biodiversity
- The materials used in the buildings and landscaping
- The nature and the environmental impact of the equipment and machinery used.
- Resource consumption and the management of waste
- The use of energy and the harnessing of natural energy resources
- The cleanliness of the school campus and the sanitary measures used to support its healthiness
- How much the school as a community engages itself in environmental issues (such as global warming, deforestation and loss of biodiversity, air, water and soil pollution) beyond the school: locally, regionally, globally
- The learning, both formal and informal, that happens in all the school educational programs both formal and informal

E is for Economy

This Compass Point represents the infrastructure that supports human systems by processing natural resources and human ingenuity into food, goods, and services. If Nature provides us with the raw necessities of life, the Economy provides us with the means to convert them into things that we find

useful, satisfying, and beautiful. We are dependent on both Nature and the Economy for our very survival.

Sustainability for this dimension refers to maintaining economic viability, vitality, and prosperity.

Determining how all aspects of the school operations impact on this dimension of the school's sustainability involves deriving measurable indicators of sustainability from such factors as

- Budgets: the balances of revenue against expenditure, capital investment, reserves
- Sources and levels of income such as school fees and fund-raising
- Employment packages and benefits
- Working conditions and work loads
- Investment in facilities, equipment, instructional materials and resources
- Investment in public relations and marketing
- Provision of career advisement and counseling/financial services
- How much the school impacts and is impacted upon by the economic dimension of life in the local surrounding areas, regionally and beyond, including levels of employment, affordable housing and food, accessing supplies and fair trade practices, poverty and support services, quality of life and the addressing of other issues such as production and productivity , business and industry, urbanization, technology, transportation and consumerism
- The learning, both formal and informal, that happens in all the school educational programs

S is for Society

This Compass Point represents the organization of human life into social groups, systems, and institutions. It reflects our capacity for working collaboratively and creating cohesion and stability, while creating conditions that support advancement in the apportionment of basic human rights such as freedom from discrimination and the opportunity to live in peace. Without functioning societies, both we ourselves, and the other systems on which we depend for survival, are threatened.

Sustainability for this dimension refers to supporting social stability, equity, development and social cohesion.

Determining how all aspects of the school operations impact on this dimension of the school's sustainability involves deriving measurable indicators from such factors as

- Social cohesion as a school community

- Inclusivity and transparency in power, policy and decision-making
- Appropriate, supportive, efficient organizational structures and systems
- Recognition of and respect for the dignity of the individual and individual rights, gender equity, and social justice
- Recognition of and respect for cross-cultural and interfaith understanding, and the celebration of diversity and difference
- Provision for conflict resolution, reconciliation and peaceful co-existence
- The state of health and safety in the work place
- The safety and security of individuals from physical and psychological harassment
- The working and learning environment and organizational morale
- The acknowledgement and celebration of individual and group achievement and success
- Opportunities for career and professional development and fulfillment
- How much the school impacts and is impacted upon this social dimension of life locally, regionally, globally (addressing issues such as politics and government, public safety and physical security, health, social security and other infrastructure services, poverty and visibility of cultures)
- The quality of learning, both formal and informal, in this dimension that occurs in all the school programs

W is for Wellbeing

This Compass Point represents individual health, happiness, development, fulfillment, and overall quality of life, however we define it and experience it, in all our human and cultural diversity. Without happy, healthy, well-balanced people and families, good decisions cannot be made. Societies cannot be maintained. Economies cannot be well managed. Natural systems cannot be well cared for. Wellbeing is both a goal for human striving, and a necessity for healthy stewardship of our world.

Sustainability for this dimension refers to making individual health, opportunity, fulfillment and happiness possible through the exercise of wise choices.

Determining how all aspects of the school operations impact on this dimension of the school's sustainability means deriving measurable indicators from such factors as:

- Work load and equity issues

- Personal health, fitness and nutrition and tackling issues such as eating disorders, disease, stress
- Reflective, positive outlook, the development of emotional resilience, and the tackling issues such as depression, self-centredness, and inferiority
- Intellectual challenge and creativity opportunities
- Professional and career development opportunities
- Ethical actions and the promoting of an affirmative sense of meaning, purpose, and happiness
- How much the school impacts and is impacted upon the well-being dimension of life locally, regionally, globally, including such issues as quality of life for individuals in everyday life, physical and mental health, family structure and relationships, sense of security working conditions, education level, housing conditions, nourishment
- The quality of the learning, both formal and informal, in this dimension that occurs in all the school programs
- General sense of personal happiness and enjoyment within the context of environment

APPENDIX THREE

Case Study – The P.T.I.S. International School, Thailand

"The Compass is simple. I can go in depth into discussions with students and it's really easy to manage." - 5th Grade teacher

Teachers at the P.T.I.S international school have shared an overly positive experience using the Compass. They comment that it has increased thinking about *well-being* and, in general, has created higher levels of critical thinking among both students and teachers. The following are a few of the ways in which the Compass has been used to encourage learning for sustainability in the greater school community:

Curriculum planning. Teachers have used the Compass to guide lesson plans for reading, writing, math, science, history and other subjects. Teachers have found it gives them the opportunity to be more creative with their lessons by thinking "outside the box."

Strategic planning. Teachers, faculty, parents and student representatives used the compass to look at sustainability within their whole school community. The initial process took the form of a whole-day school workshop and provided practical discussion around sustainability in their school context. One positive result of the planning was that energy use was cut which ended up saving the school money.

School lunch. The 4th year studentsk used the Compass as a lens to look at the school lunch menu. As a result, the menu is more healthy and the school now buys more fruits and vegetables from the local community, which has reduced school cafeteria costs.

Science fair. Students used the Compass in small groups to design projects for the school science fair.

Community projects. Secondary school students used the Compass to develop the "Adopt a Dog" project to help a population of stray dogs at a local temple. Prior to the project, the dogs were running loose in the community, howling and barking, and posing health problems – the situation affected the happiness of the community local businesses. The students used the Compass to design and carry out the project through community donations and a partnership with a local NGO. The dogs they have helped are now healthy, well fed and many neutered.

APPENDIX FOUR

The Compass as a Learning Tool

First, for the Sustainability Compass to be considered by schools it must benefit learning –this is exactly what the Compass aims to do. For one, the Compass helps students, teachers and school administrators think systemically on many levels, from lesson planning to classroom discussions about current events, to student-directed projects and school planning.

Take for example the issue of CO2 emissions and climate change. By understanding the "climate system," we know that releasing CO2 into the atmosphere can have an effect on a number of global issues – floods, typhoons, rising sea levels, loss of biodiversity, etc. Then, by thinking about the system as a whole, we can ask certain types of questions to find out more about the issue: *What causes CO2 emissions? Where do CO2 emissions from? Who is releasing CO2 into the atmosphere?* Finally, by looking at the different component of the "system," we can begin to find answers to these questions and inquire more to understand how the components of the system are linked. For instance:

- CO2 can be emitted from a number of sources, such as the burning of fossil fuels – so where do fossil fuels come from?
- The burning of fossil fuels can be a direct result of electricity consumption, among other influences – so what influences electricity consumption?
- One could say electricity consumption is cause by the ubiquitous use of electrical appliances, turning on lights, air conditioners, etc. – so why are electrical appliances used?

In the end, we can identify specific parts of the system that we can influence to promote change. In the case of climate change in this particular example, promoting change really comes down to influencing an individual's decisions – what appliances to use, when to use them and how long to use them for (see Figure 1).

By examining the entire system, from our decisions on energy use to climate change and other global issues and back around to individual actions again, students can learn that their decisions and individual actions can have impact on the entire feedback loop and also affect people in other parts of the world. Once students grasp such understanding, they will be better equipped to make better choices and act in more sustainable ways. Using the Sustainability Compass as a lens to analyze this system feedback can provide students and the school community as a whole with a different perspective that can build understanding about how individual choices can affect different systems and, potentially, other people.

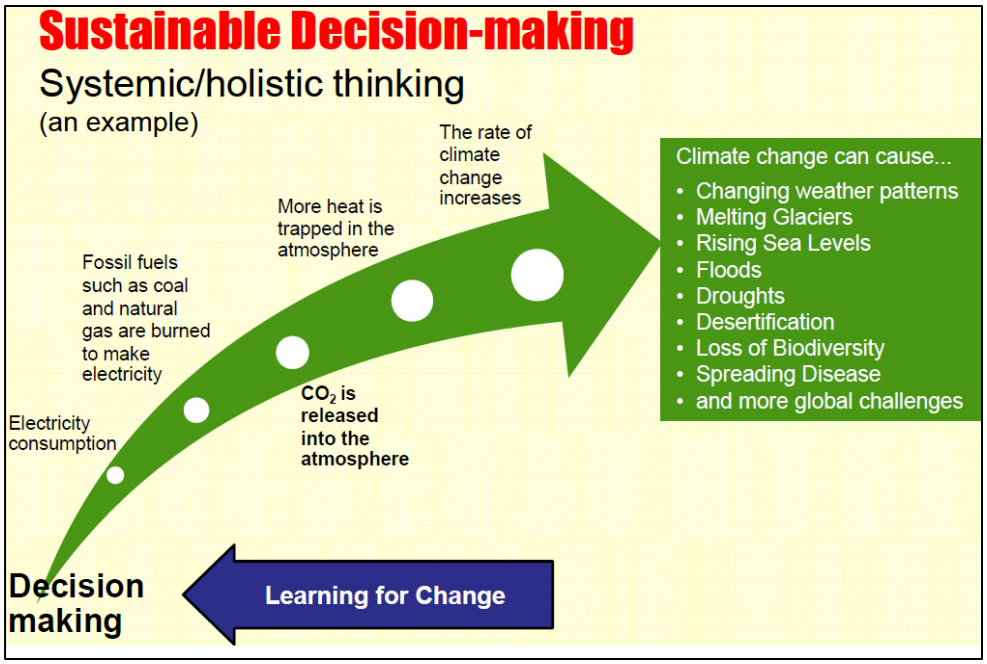

Figure 1. One example of the cause and effect relationships of decision making within the climate system

However, before learning to think in sustainable ways, people often only see what lies on the surface of an issue. This phenomenon is where an ice berg can tell a good story. It is commonly known that only a very small percentage of an iceberg (approximately 10%) sits above the surface of the water. If one uses an iceberg as a metaphor for an issue or event (such as climate change), the part floating above the surface relates only to the portion of climate change that people can see – the typhoons, the floods, increasing temperatures and droughts. However, to truly understand how large the climate change issue is, one needs to consider the entire the iceberg, especially the part underneath the surface which keeps the issue afloat. Below the surface lies entire system, including the way people think, what they value, how they behave, in addition to culture, history, relationships and much much more.

As a learning tool, the Sustainability Compass helps learners look underneath the surface and better understand how the different components of a system influence each other and the world around us. Being able to look under the surface and see understand how systems work is a skill. It is a skill that can be learned; it is a skill that can change the way people think and view the world; and it is a skill that can influence how people make decisions and act towards sustainability.

How does the Compass Work?

But how does the Sustainability Compass work in practical terms? How can teachers and students use it? Let's look at an example scenario of how it might be used by a teacher in 3rd grade classroom in Indonesia:

Let's say that you are a 3rd grade teacher in Indonesia working with your students on a lesson to raise awareness about what to do after a natural disaster. Currently, this is a relatively small topic in the national curriculum which could be given more classroom time, especially since your province experiences many floods, earthquakes, landslides and other natural disasters every year. So you approach the topic with the Sustainability Compass.

Let's say you choose to begin using the Compass by having a class discussion about what the effects of an earthquake could be on your community. You and your students begin by brainstorming around the Compass point, "Well-being." If you focus on well-being, you would start by brainstorming ideas about the effects of an earthquake on students' lives. Some answers at the 3rd grade level might be, for example: "getting hungry and thirsty," "sad and scared," "can no longer go to school," "worried about family and friends." Then you do similar brainstorming on the effects related to the other three compass points, Nature, Economy and Society. The result of the class discussion could be similar to the points found in Figure 2.

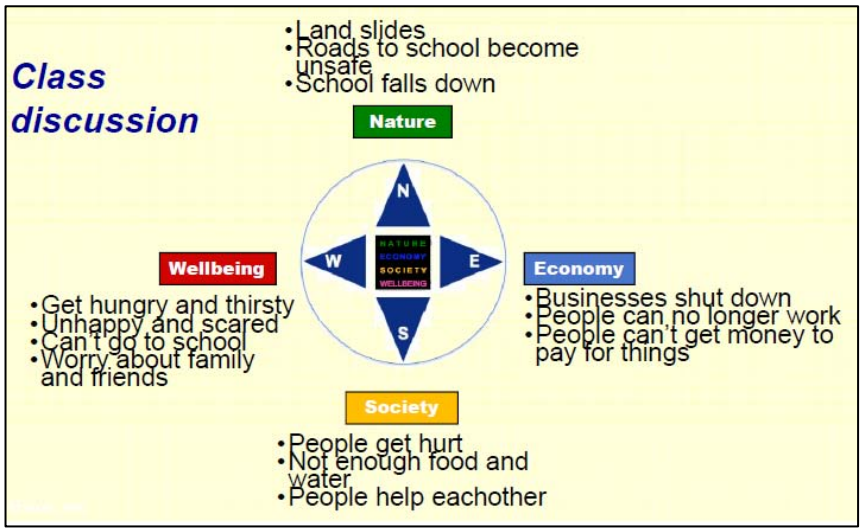

Figure 2. Possible result of using the Compass for of a class discussion on the potential effects of an earthquake in the community

An exercise such as this can be made very simple, yet what it does is use the Compass as a framework to expand thinking on a topic around the dimensions of sustainable development in a very simplistic manner. To continue the scenario:

Let's say as the teacher you now want to continue your lesson on earthquakes. So you ask the students to choose one topic from their brainstorm that they want to work on to make better in case there is an earthquake where you live. In this case, the students could choose, for example, "getting hungry and thirsty."

Now you use the Compass to plan the next lesson. You take the topic "Getting Hungry and Thirsty" and draw up questions for the students around each Compass point, similar to the questions in Figure 3.

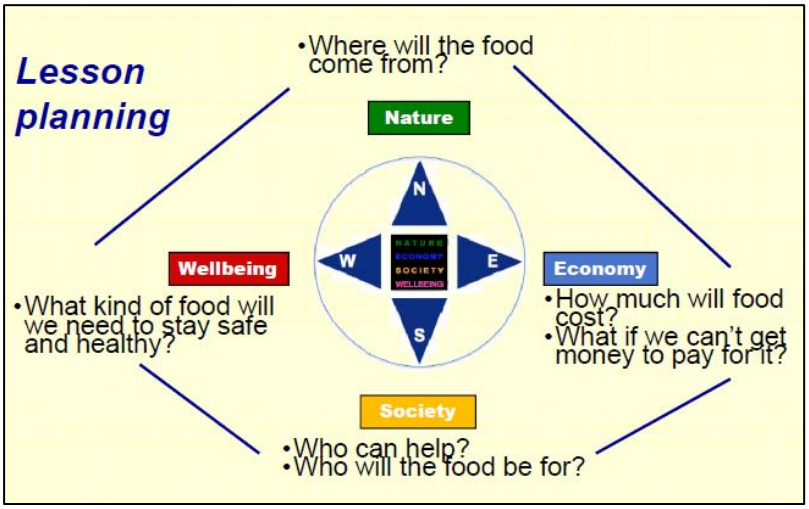

Figure 3. Possible result of using the Compass for lesson planning to develop student questions

The students could then answer these questions in groups, they could go out into the local community to ask other children and adults what they think, they could undertake a number of activities to find the answers. After answers are received, you could then work with the students to see how the different compass points are linked, and this could form the basis of for an even bigger project on minimizing food shortages in the community when a disaster strikes.

By using the Compass, the teacher in this scenario could create a locally-relevant project to minimize the effect of disasters, just by viewing sustainability from different perspectives. Such an assignment could also be linked to the national curriculum by serving as a basis for writing assignments, math problems, science experiments and school work in other subjects.

Authors of Each Chapter

Foreword	Heiji Teranaka
Preface	Yoshiyuki Nagata
1. Implementation Country Overview	Yumiko Shimozato
2. Overview of Project Implementation Area	Yumiko Shimozato
3. Overview of Laos Survey	M. Saito, S. Soga, Y. Nagata
4. Analysis of Survey Results	M. Saito, S. Soga, Y. Nagata
Afterword	Yoshiyuki Nagata

Appendix

1. Surveys and Study Tour for Technical Transfer to Xieng Khouang Province	
2. Report on Thailand Survey	Miki Saito
3. Report on India Survey	Sachiyo Soga
4. 'Compass School'	Joel Bacha and Robert Steel

English Translator — Elissa Leif

Collaborators of this report and attached leaflet of 'Ecology of Learning'

Sombath Somphone, Naoko Yoshida, Ayako Tasaka