



**National Institute of Development Administration (NIDA)**



**CaseStudies**  
on Development Administration

**NIDA International Conference for Case Studies  
on Development Administration 2018 (ICCS 2018)**

**June 29, 2018**

At Chira Boonmark Hall, 3<sup>rd</sup> floor, Sayamboromrajakumari Building,  
National Institute of Development Administration (NIDA),  
Serithai Road, Bangkok, THAILAND

**Organized by**

National Institute of Development Administration (NIDA)  
Bangkok, THAILAND



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**Editors**

**Associate Professor Dr. Wisakha Phoochiada**

**Organized by**

**National Institute of Development Administration  
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## Preface

The Eighth NIDA International Conference for Case Studies (NIDA-ICCS) will be held in Bangkok Thailand, June 29, 2018, at NIDA's Bangkok campus. The conference brings together scholars and experts from a wide range of development administration fields to discuss practical and research issues related to teaching case studies.

NIDA proudly invites scholars and experts to send their teaching case studies in various fields of development administration.

The keynote speaker will be Dr.Evan M. Berman, Professor of Public Management, School of Government, Victoria University of Wellington, New Zealand

|                                 |
|---------------------------------|
| Conference Theme and Sub-themes |
|---------------------------------|

Main Theme: Teaching Case Studies on Development Administration

Sub-themes in various fields of development administration include:

- Public Administration
- Economics
- Business Administration
- Social Development
- Environmental Management
- Law, Legal Studies
- Human Resource Development
- Language and Communication
- Applied Statistics
- Decision Technology
- Actuarial Science and Risk Management
- Population and Development,
- Information System Management and Computer Science
- Tourism Management
- Sustainability
- Corporate Social Responsibility and Ethics

### About NIDA

National Institute of Development Administration (NIDA), is established in 1966, is a unique higher education institute in Thailand that offer exclusively graduate degree programs. NIDA was originally established to support national development in Thailand; this objective has now been expanded to encompass regional development in countries outside of Thailand, with the aim of producing advanced degree graduates who can serve in the public, business, and nonprofit sectors. NIDA holds its academic conferences and publish at least two journals regularly—NIDA Development Journal (in both English and Thai) quarterly, and NIDA Case Research Journal (in English) annually. For more information please visit our website: <http://www.nida.ac.th>.

## **Foreword**

It is our great pleasure to present the proceedings of the 8<sup>th</sup> NIDA Case Studies on Development Administration 2018 (NIDA-ICCS 2018). We have compiled the latest quality teaching case studies from scholars in the region and around the world.

After blind review process, a total of 24 case studies were accepted for presentation in several parallel sessions of the conference to be held at National Institute of Development Administration Bangkok, Thailand between June 29, 2018.

The case studies are resourceful and contribute a great deal to the academicians and practitioners in the field relating to development administration. The organizing committee wishes to express our special thanks to the authors of the cases, the reviewers, and all those who have contributed to the conference. We would like to express our gratitude to all those individuals and institutions who had supported this conference professionally and enthusiastically in order to make this conference happen.

Research Center  
National Institute of Development Administration

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Friday, June 29, 2018

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## **A Practical Demonstration of: The Decision Making Foundation of Microeconomics in a Student-Centered Context, Using Efficiency Wage Theory as a Case Study and Utilizing Student Input**

*Felix Francois Erasmus*<sup>1</sup>

### **Abstract**

This case study uses existing theory on efficiency wage, or the study of why people decide to shirk on the job or not, and applies it to students using their own in-class input. The objective of the case is to demonstrate to students, with no background in economics; how microeconomics can be applied to their own lives, situations they will see in a classroom, and among their peers more generally. The case requires students to be introduced to the basic concept of efficiency wage/shirking theory, with the teacher using an appropriate level of mathematics for the students being taught. The teacher then works with students to adjust the theory to how they, the students, are motivated. The objectives are: firstly for the students to begin to think about their own behaviour and that of their classmates through the eyes of an economist; secondly it can also give the teacher some helpful insight into what the students see as their own motivation in learning in general, which can improve subsequent teaching of the same set of students. Thus the case is both a demonstration and an application of microeconomics in the classroom.

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The objective of this case is to help students who are new to economics to gain an intuitive understanding for what microeconomics is about<sup>2</sup>. A typical high school or introductory level student may have very little existing knowledge of economics, and could perhaps give an answer somewhere along the lines of “it’s about money?” when asked to define economics. Microeconomics focuses on the behaviour of individuals and firms, and through this lens it is able to answer larger questions about the economy and ultimately about money. It may be difficult therefore, for students to intuitively understand the method behind the madness, so to speak, in economics. Most of the basic theories that are taught to students that are new to economics can seem abstract and distant; economics can seem to be a subject composed entirely of graphs and calculus, with no bearing on reality whatsoever. What then is the purpose of economics in the eyes of a new student? Is it just to learn how to make money? How does any of what is typically covered in a microeconomic course fit into this preconceived notion of economics?

This case is aimed at students starting their learning of micro-economics. It is intended to give an intuitive understanding of microeconomics, and develop student’s ability to think like an economist through the application of the case to understand and formalize their own thinking processes. This case can be used for students in any kind of classroom that allows for some level of discussion or student feedback. It is thus well suited to most traditional classrooms, and interactive online learning environments, but not well suited to recorded lecture style classrooms.

Microeconomic theory is at times difficult to understand, relying on a level of understanding and existing knowledge of the field that may not be present for some students. Developing a complete context and overview of the entire field is often the goal of introductory microeconomic courses, but is stymied by the fact that traditional teaching methods try to teach the entirety of economics with not existing context, not building up on the schema of students in a reliable way, instead depending on students to be well read in the general nature of economies from news or from other courses. Economics thus struggles to make itself understood to many learners who have not taken on the necessary background courses or independent reading prior to starting. It is unfortunate that the vast majority of people have little understanding of economics or any interest in it, and often feel that economics is a field that has no relation to their lives or to their professions. The truth couldn’t be farther away from this assumption, economics is in everything. The job of the educator for introductory economics therefore should not be to have students attempt to memorise an assortment of arbitrary theories and graphs, but to have students begin to understand what economics is about in the first place.

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<sup>2</sup> See the companion article written for this conference by the author of this paper, for more on this theme “A practical demonstration of diminishing marginal returns; through the physical classroom learning environment.”

The importance of context is significant. If students enter into a course of economics mistakenly believing that they are studying something else entirely, they will struggle to make sense of the array of theories presented to them in class. Instead of igniting a spark of interest, and creating a new generation of economists; most introductory economics courses will leave students bewildered and turned off the field altogether. We need to therefore as educators give students the right kind of introduction into economics, and help them understand quickly and in simple terms what it is they will be studying. As importantly: how it is directly relevant to their daily lives, not only to business leaders & government policy-makers.

This case study aims to bring microeconomics specifically, and economics in general, away from abstract and distant concepts such as markets and firm behaviour, down to something that is easily understood by students: the students themselves. The aim of the exercise below will be to have students work through a theory on motivation, and begin to unpack it, step by step, and assess to what extent it can describe their own behaviour and that of their peers.

This case was originally developed to teach economics to high school students in Thailand, following the national Thai curriculum. Some of the challenges in teaching high school students are that they typically enter with very little background knowledge on what economics is, and may be taking the course as part of a mandatory section within a larger social studies curriculum. Therefore, the students haven't self-selected the course, and there will be a mix of interest levels in the subject, with the majority being there essentially against their will. It is thus of more importance in such a setting to try and bring economics down to a relatable level where students can understand the immediate impact and begin to see the subject as more than something to be memorised and spat back out again during the next exam, but a genuine study of the world around them. A further issue, specifically with the English language delivery of economics, is the lack of any important external examination, which as we will explore later can reduce student's motivation to study the subject at all.

Ideally, the long term goal of this case and others like it would be to introduce students to the basic principles needed to start seeing the world as an economist, and to start to analyse the every-day situations in their life through this lens, thinking like an economist.

In order to introduce students to this way of thinking, they can be asked to help brainstorm and, if feasible, formalise an economic explanation for what drives their own behaviour and motivation. One of the most applicable theories in this field is efficiency wage, which can be easily adapted to fit the shirking decision parameters of a typical student.

Efficiency wage is a hypothesis that has been around for some time, in the seminal paper “Equilibrium Unemployment as a Worker Discipline Device” (Shapiro & Stiglitz, 1984) it was proposed that individuals will try and determine whether or not to shirk by comparing the effort required to do the job, and the chance of finding a similar job if they were to shirk; with the likelihood of getting caught and losing their job as a result. In situations where jobs are easy to come by workers are more likely to shirk, and this gave rise to a theory of unemployment where firms would pay higher than the equilibrium wage in order to persuade workers to work harder, as workers would not easily be able to find another job that paid as much if they shirked, and possibly due to some nutritional reasons where more pay allowed workers to eat better and thus work harder.

This theory at first glance is difficult to apply to students, especially in the Thai high school context where most schools employ a no-fail policy; so at first glance there may seem to be very little chance of getting caught shirking, as in-school grades would have little relation to effort. Students are generally smart enough to figure out that they can’t fail, so there is very little institutional pressure to encourage students to not shirk as there would be in an employment context.

In the basic model, adapted from Shapiro & Stiglitz (1984) workers evaluate the reward that they receive from working  $w$  with the effort required to do it  $e$  (not to be confused here with the universal constant  $e$ ) When the utility lost from effort outweighs the utility gained from wages, the worker is more likely to shirk. Other factors that are added to this involve the likelihood of getting caught shirking, and the likelihood of finding another job that pays as much if fired. In the original theory the employee is considered as rational, and makes a comparison of the present value for both keeping the job, and being employed, but having to work harder; versus shirking from the job, potentially losing the job, factoring in the lifetime effects of being unemployed if they cannot find work.

$$U = w - e$$

The assumption is that workers will not want negative utility, so if the work is more effort than the wage is worth, workers will not put in the effort. A worker that does not shirk receives his wage, and presumably gets to keep his job. A worker who shirks gets the same wage, but also has to take into account the probability of getting caught at any given period of time. Here is where the standard theory for workers can vary from that for students, if students are receiving different benefits,  $w$ , for achieving grades or being punished for not achieving certain grades by the school or by parents, or for not meeting expected in-class behaviour. In this case the  $w$  reward could also be the absence of a negative reward or punishment. This is where the probability of getting caught or failing to meet a grade comes in.

If students feel that they will pass regardless of effort though, and the reward for passing is the same as the reward for getting an A then they are likely to shirk if they are rational. In the worker model, a worker compares two lifetime utility calculations (see Shapiro & Stiglitz for a formal model of this), comparing the lifetime utility of working hard and earning a wage, with the chance of getting fired for some exogenous reason and the chance of then getting hired again quickly; on the other hand the lifetime value of being a shirker and getting the same reward without the effort, but including the chance of getting caught along with the chance of being arbitrarily fired due to exogenous reasons. In the Shapiro and Stiglitz model a worker who believes that there is a high chance of getting fired despite their effort is more likely to shirk, a worker who believes that there is very little chance of getting caught shirking is more likely to do so, and a worker who believes they could make as much money or more in another job if they were fired is also more likely to shirk. On the other hand if a worker believes there will be severe consequences for shirking, such as not being able to find another job, or loss of potential income then they will not shirk; additionally a worker who is being paid a high enough wage to outweigh the effort and provide a positive utility is also less likely to shirk.

The relationship between reward and effort is a non-linear one. While relatively simple to explain mathematically, care needs to be taken in a lower level student setting to not overwhelm students with mathematics, as being experts in behaviour now we should realise that if the perceived difficulty is too high then the likelihood of students putting in effort goes down. A non-linear relationship can be demonstrated by asking students to consider how much money they would need to be given to achieve a certain grade. For example if they said that they would work hard to get a 100% for 1000 Baht<sup>3</sup>, would they only work half as hard, and try to get 50% if they were only offered 500 as an incentive? Would they work twice as hard if they were to be given twice the amount of money? In reality the case is that most people will only work a little bit harder for larger and larger incentives simply due to physical constraints such as time or ability to give any more effort<sup>4</sup>. This is an advanced case though, as it becomes not a simple decision to work or not to work, but rather an increasing scale where students theoretically continue to put in ever decreasing amounts of marginal effort, for example as expressed by Stiglitz (1976).

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<sup>3</sup> Insert appropriate currency and amount here

<sup>4</sup> This could be linked into a discussion on diminishing returns as in the companion case in this conference; or see: Walberg, H. J., & Tsai, S.-I. (1984). Reading achievement and diminishing returns to time. (E. Steve Graham, Ed.) *Journal of Educational Psychology*, 76(3), 442-451.

If the students have been lead through the companion case in this series already they can consider the effects of adding in additional reward, considering that there are actual physical limitations on their ability to perform such as time, concentration, interest level, ability, and other commitments. This is something that students could work on in small groups, to list what the constraints are that would prevent them from increasing their effort on any given subject. For the purposes of the exercise this does not need to be economics as a subject, the students can be asked about any particular subject, maybe even grouped by subjects that they are doing poorly in.

In the case of students, what drives them is a combination of similar factors to what drives employees. There is a chance of getting expelled, and having to go to another school; some students may be thinking far enough ahead to consider what their future will look like if they do not graduate with the best grades and get the best jobs, some may simply be motivated by a carrot and stick approach provided through the educational institution or through their parents.

This calculation may still be somewhat abstract for your students to understand, so it is necessary to break it down into smaller pieces. Ask the students at each step what they feel their motivators are.

It is important to do this with some sense of humour, this is not intended to be a reprimand of student behaviour up to that point; emphasis should be made that nobody is being singled out for their in-class performance, but that this is a real application of economics, and the students should all help and evaluate each variable. With the help of the students the equation should be changed to something that resembles reality for the students, with the teacher's guidance. External rewards such as pay can be substituted for rewards or punishments that parents have told students they will receive should they achieve or fail to achieve certain goals. External rewards or punishments can also include those created by the school such as certificates of achievement or the risk of being expelled; these can be critically evaluated by students and teacher together e.g. "if I told you I would give you a certificate if you get an A on the exam, would you be more motivated?". The answers don't have to be the same for all students, what matters is that students can understand the variables of external reward, and come up with a rough idea in their own minds of the weight that variable would have in their case.

Firstly, introduce the concept of effort, i.e. is this course we are taking right now a lot of effort? How much misery do you think it will take to get an A in this course?<sup>5</sup> A lot of misery, a normal amount of misery, only a little misery, etc. The exact measurements don't matter at this point, only that the students practice specifying it themselves; this is really the first step in making any kind of objective calculation.<sup>6</sup>

Next, what is the reward that students will get for achieving an A? Many of your students are likely not thinking about long term rewards, although some might, some may simply be doing it in order to keep their parents happy (see discussion above regarding absence of negative rewards), some may be motivated by awards given by the school such as certificates or honour roll status. As a teacher, your role here will be to guide students to considering different kinds of rewards, but to ultimately let students decide for themselves what the reward is. If the student is to determine, for example: that they have no reason to study hard for this subject; that would be a valid answer. In fact, such honest self-reflection should be encouraged here, as it will help build the student's intrinsic motivation to learn more about economics later on as it becomes a field of inquiry that does not make a value judgement about them but rather tries to give them an objective platform with which to explore and understand the world.<sup>7</sup>

The likelihood of getting caught is an important factor, especially when combined with the penalty of being caught. What do your students think is the likelihood that they will be caught as having slacked off? Are the tests difficult enough to motivate them; are they afraid of their parents' wrath, or being placed on academic probation? In an academic setting, students can be caught as slacking off in class if they are asked questions and are unable to answer or directly observed either falling asleep or not taking notes. They are also indirectly assessed through periodic quizzes, homework assignments, and exams. Do your students consider these to be serious threats, or do students believe they are able to pass through all these checks without getting noticed as slacking off?

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<sup>5</sup> Assume that students hate your course. Ask them to assume they hate it too. This can be done in an entertaining way to help encourage students to share views they might otherwise decide not to. The students that do genuinely hate the course may even become temporarily more engaged, though the author makes no such guarantee.

<sup>6</sup> Remember, the goal here is not necessarily to have students learn about and memorise this theory; it is rather to get them practicing the thinking process that goes into building or applying a theory like an economist does.

<sup>7</sup> The goals of educators should always be long term, not merely to drag reluctant students through the next test, but to instil a life-long desire to learn and explore. A student who may show little interest in school today could well become a great economist later in life, if they can be taught to start thinking like an economist now, regardless of what they apply that toolset to in the short term.



Another important aspect that can be added on is aggregating, if students have had some preparation in surveying or statistics either in class or in other courses they could be asked to do a survey of their class or other peers and help construct an appropriate reward/punishment system that would motivate. The teacher should determine whether this would be appropriate for the given students, based on their familiarity with the concepts and likelihood of actually doing the survey independently.

This case study does not require independent learning, and can be done entirely in one or two classes through discussion sessions. It may be useful to divide students into small groups, to encourage all students to take part in the discussion. Group size can be determined by the teacher's discretion, but should be small enough to ensure that every member in a group has a chance to participate, but not too small that some groups could be completely left behind due to one student not being willing to participate.

Another potential objective may be for the educator to get a better understanding of their own student's motivation, from the students themselves. There is an obvious pedagogical goal to having students put effort into their learning, and it is not something that a teacher can directly cause, but it may be something that the teacher may be able to influence through a better understanding of which factors are more likely to effect the students.

Another aspect of this is that as an educator it is always useful to understand the motivations of your students. This exercise is just as much a tool for a teacher of economics to think like an economist, and start to measure aspects of their student's behaviour and thought process, in the future this can be used to better inform the appropriate level of challenge and reward for future activities for the specific group of students, or if this exercise has been done with several groups of students to begin to develop a reliable motivation system to be used more generally in the specific educational and cultural context in which the educator is conducting this class. It is worth noting here that observations on one group of students do not automatically translate to represent students at other levels or even students at the same level in other institutions and countries. It is the job of the educator to make an educated decision about the significance of any findings they take from this exercise.



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## **A Practical Demonstration of Diminishing Marginal Returns; Through the Physical Classroom Learning Environment**

*Felix Francois Erasmus<sup>1</sup>*

### **Abstract**

This case study is based on a core concept in microeconomics, the diminishing marginal returns to labour/capital. It is one of the fundamental rules in economics that applies in a wide variety of situations where one factor input is fixed and others vary. It is often a difficult and somewhat abstract concept for students to understand without any prior knowledge of economics, or business. In order to teach the concept, it is therefore useful to bring it into the physical environment of the classroom. In this case the students are moved to whichever classroom is the worst that can be found in the school building, ideally with too few desks and chairs, too few computers (if applicable, depending on the teaching delivery style being used) and other limitations such as a lack of projectors/ air conditioning. The students are then asked to share desks, or sit on the ground, and are not allowed to bring in desks or chairs from other classrooms. The theory is then explained, with emphasis by the teacher to ask the students to consider how their own ability to take notes or concentrate has been negatively affected due to the relative increase in the number of students to other fixed factors. If possible this can be expanded upon by progressively removing the tools needed for students to successfully take notes and learn in the classroom. A reverse situation can also be simulated by bringing in extra desks, or providing students with unnecessary extra pens and notepads, and asking students to consider by how much their productivity has increased. The students can then be moved back to their original classroom for discussion. The objectives of the case are firstly to give students the chance to see, touch, and experience what is otherwise a somewhat distant theoretical concept; secondly it can allow the teacher to observe to what extent the students participation or learning was affected by the physical environment, which can help the teacher effectively use the physical teaching environment in the future. It is thus: both a demonstration and practical learning experience in economics, as well as an application of economics to the classroom.

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## **Introduction and Objectives**

Economics is often at a disadvantage to other subjects taught in a typical school curriculum; it is hard to intuitively grasp what economics is about and what some of the topics being discussed are about at a basic level. For a comparison, consider a simple physics problem of a ball rolling down a hill, nearly every child in the world is familiar with what a ball is, and has probably seen a hill. The job if the physics teacher is simply then to add a level of scientific understanding on top of a phenomenon that is already intuitively understood by most students. Likewise the fields of biology and chemistry are too helped by the relatively wide understanding of what is being discussed at a basic level such as plants and animals, or common elements found in the world like iron & oxygen. The job of the introductory level economics teacher is therefore not only to give students a set of common theories they will need to understand to pursue further education in the field but to establish a kind of basic intuitive understanding and reference point for what the field is even about.

Like the companion article in this series “A Practical demonstration of: the decision making foundation of microeconomics in a student-centered context, using efficiency wage theory as a case study and utilizing student input.”, this paper aims to help students get a practical and intuitive understanding of economics, by bringing some of the more abstract concepts in economics into a more relatable context where students can see it and interact with it directly.

The idea is to show students one of the core axioms in economics, which is: the decreasing marginal returns on labour/capital. This axiom has been shown again and again to apply to a wide variety of scenarios, making it a key observation. Through the application of the classroom experiment below students will be able to explore this axiom in a hands-on fashion.

In order to help students understand this concept, it is important to bring it out of the abstract, away from graphs and equations, into something physical that students can observe, touch, manipulate. The objective of this case is to help students learn to think like an economist about everyday problems, and start to see how economics applies to every aspect of their lives.

This case was originally developed and tested in a Thai high school setting, so some of the observations and recommendations may need to be tweaked by an educator when presenting the case to more advanced students or students in other countries.

Some of the drawbacks of teaching in a high school setting are that students have often not freely selected to take a course in economics, and may have no actual interest in it; students will also have very little background in economics and you may get a response something along the lines of “it is about money” when quizzing students about what it is they will be studying.

In the particular case where this was developed both of these were true, and the entire field of economics had to be boiled down to one semester, two hours a week, for grade 11 only. During this time we had to cover both macro and micro economics. This meant there was very little time available, even without the typical amount of class cancellations, public holidays, and absenteeism that can be expected in the setting. This presents a challenge to the educator, to give students a brief introduction to the wide field of economics, while not skimming over it too much. The challenge was to help students develop an intuitive understanding of economics in everyday life, and not to merely have them attempt to memorise an endless parade of graphs and theories without understanding what is being discussed.

This case approach was devised not intentionally, but as a somewhat spur of the moment decision after seeing that students were simply trying to memorise the theory being taught, declining marginal returns, and had not really grasped intuitively what it was about.

The theory of diminishing marginal returns is widely accepted in economics and an essential concept in managerial science due to its implications for output decisions. It is however, if we're honest, somewhat of a distant and un-relatable concept for the typical high school student in Thailand<sup>2</sup>. The student in this case is likely not familiar with managerial theory, capacity planning, and probably has never even had an actual job; without a background in theory or a learned context through work, diminishing returns will be yet another graph to be jotted down and memorised<sup>3</sup>. Some students with family businesses may be at an advantage, but even then may have difficulty doing more than memorising the theory to repeat back during a test<sup>4</sup>. The aim is to get students practically involved in economics, and allow them to see it as an essential tool for understanding their world; we must raise economics to the level of practical sciences in the way that physics and chemistry already are in the eyes of students.

In order to achieve this lofty goal, what is needed is a practical and experimental approach; A case study in which the case being studied is not one that is written on a piece of paper, but the physical environment of the students. Even if all other aspects of implementation fall flat, this case may still have the benefits of helping students understand that economics is not only in the world of abstract figures, but is something tangible and relatable to the world that they interact with every day. The students can also be included in the set-up of this case, if appropriate<sup>5</sup>.

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<sup>2</sup> This is likely the same for most countries, at this kind of introductory level.

<sup>3</sup> The result is often students attempting to simply remember what every graph looked like and repeat the shape with varying degrees of precision back at the examiner. Without understanding the meaning behind a graph, most graphs are going to look the same and the student will be depending on random luck to match graphs with answers.

<sup>4</sup> Let me reiterate, this should not be the goal of any class. As an educator our goal should always be to develop a real understanding, and maybe even an appreciation for the field.

<sup>5</sup> As with most things in a classroom, it is up to the educator to make a judgement in the case of the particular students, and institution, to what extent to involve students in the setting up of the classroom for this case study.

## The Case

Note, this is a demonstration case, where students will practice applying economic thinking, and reflecting on things that they see and experience during the demonstration/experiment. As such, the sections below are designed to help the instructor build the physical case in a way that will provide students with the material to analyse and reflect on; it is not intended as a reading assignment for students to take home. As a demonstration case, the demonstration aspect of the case is not optional, but can be altered to fit the needs of the teaching environment or the ability of the students. Below you will find sample questions and reflection topics that could be of use to pose to students at different stages in the demonstration.

Before delivering the physical classroom case below, it may be useful for the educator to introduce the concept of diminishing marginal returns in a traditional manner, such as through a PowerPoint or a whiteboard. It is important however, that for introductory students we need to consider that they are likely not fluent in the kind of mathematics that is often used to simplify an explanation of economic theory. In order to build an intuitive understanding of economic theory, it is necessary to sometimes go the long way around, and explain things without the aid of simplification in calculus, and through descriptive or even numeric terms.<sup>6</sup> The theory of diminishing returns itself can be pretty straightforwardly explained in one lecture, but understanding intuitively why it works in this way will require some demonstration.

Numerically, we can describe the law of diminishing returns as an example where each additional unit of input X results in a half of the increase that the previous unit had brought. You may choose to use other numbers, but half is one of the simplest for students to understand without needing to use a calculator. The goal here as always is not to bog down the students in the mathematical details but to focus on the core concepts.

The table below is all the reading that students will need to do at a basic level for this case; students can be given some time to try to understand it without prompts before moving forward with discussions, and the demonstration of how the case works.

|                             |   |     |      |       |
|-----------------------------|---|-----|------|-------|
| Number of additional inputs | 1 | 2   | 3    | 4     |
| Additional output           | 1 | 0.5 | 0.25 | 0.125 |
| Total output                | 1 | 1.5 | 1.75 | 1.875 |

After being introduced the concept as above, have students consider the problem independently or in groups:

- Why does it diminish? What is going on?
- Does it always diminish? What could be some examples?
- What is the implication of continuous diminishment?

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<sup>6</sup> See for example: *Economics for the IB Diploma*, by Ellie Tragakes (Tragakes, 2012); or any other appropriate high school economics textbook, for ideas on how to introduce economics without the reliance on calculus.

The students will be getting more practice with the concepts as the experiment progresses, at this stage get the students to start thinking about the problem. With a theoretical framework, however shaky or incomplete, we can now start to practically demonstrate this in the classroom.

In order to simulate the diminishing returns effect, the educator needs to find a way to move their students to the smallest and most uncomfortable classroom available in the school building. It is important that there not be enough desks or chairs for everyone, so that students have to share some kind of limited physical resources. This can be added upon by having less of other required resources in the classroom such as working air conditioners, lack of pens, etc. it is up to the educator's imagination here. The more uncomfortable and poorly equipped the classroom is, the better it will be for this case<sup>7</sup>. If you are in a typical school building in Thailand, finding at least one room like this should not be too difficult.

After being placed in a room with not enough physical capital, have students brainstorm some ideas about how the experience is different

- What is different?
- Does this difference affect our ability to work? Why/why not?
- If we increased the effect, i.e. used an even smaller classroom, what would happen?
- Does what we are experiencing in the classroom reflect the theory we learned before?

If you are in the unfortunate position of already being in the worst possible classroom in the entire building, or you are not permitted to move your students to any other space due to some unbendable school rule; the same result can be achieved by having students bring in additional chairs and tables, above what is needed, or having your students remove half of the tables and chairs in the room.

Whether you are adding or removing these factor inputs, does not matter, what matters is that you draw attention to it. One way to approach this would be to continue to lecture on the topic at hand, or an entirely different topic, and then at the end of the lecture to ask students to assess how they performed in the class with the additional tables, or with less tables than needed. If you had previously explained the same topic to students you may have them compare the experience of learning in the different classroom environments.

For example if you decided to double the number of tables, to give each student two chairs and two desks to work with, ask students whether their ability to focus and take notes in class has improved. Consider giving them some of the following as a hint:

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<sup>7</sup> If you are in the enviable position of having a small class size: this can be done by moving your students into a broom closet, or equivalent utility space, ill-suited for teaching

- How much space do I need to work effectively?
- Do I need to be in contact with other people to work effectively?
- Do other people cause me distraction?
- What kind of tools do I need at a minimum to do what I need to do in the classroom?
- What happened when I had less or too much of something?

There will likely be some amount of improvement, due to having a bit more space to work on, or not being too close to other students who caused a distraction before. However, it is unlikely that any student produced double the amount of notes in the same time due to simply having doubled the amount of physical space available to work in. Likewise if you decided to remove tables and chairs and had students share tables, or sit on the floor, there should be a noticeable reduction in ability to take notes and in attentiveness. What is important to draw distinction to here is that the number of students has not changed, each student is still in the class, and is likely in the same state of mind as they were before in the previous classroom. What has changed is the physical environment. You can have students reflect on why this is, have them write down reasons individually, or brainstorm in groups. Once some ideas have been brainstormed and collected from the class, bring back the theory of diminishing returns and ask students if they feel that this theory has described at least some of what they experienced. The key to understanding diminishing returns is that it doesn't have to be an explaining theory, or a predictive theory, at least not in every case. Diminishing returns can simply serve to help describe, formally, the effect that the students have just experienced.

In the particular school where this was developed: at the end of the lecture I took a moment to go to the back of the class where a group of young lads had decided to sit on the ground behind everyone else and asked them how much they understood. What I found was that they had taken hardly any notes and had become quite distracted during the class due to being squished in closer with their friends and not being at a desk.

While in this case it was likely more of a psychological effect, it is important that the marginal returns effect is a combination of these. There are psychological aspects to the effect, that people work less effectively in crowded situations, and then there are more obvious physical limitations to how many people can be effective per a piece of machinery. This can be expanded into a class or group discussion as appropriate, to what extent are psychological and social factors affecting our ability to be productive in a given context, and to what extent is it the physical environment. Are the two intertwined? In a certain sense there is a definite influence that the physical environment will have on how likely students are to be socialising or distracted by other students, due to crowding or spacing out effects.



Students can be taken back to their original classroom or the classroom can be restored to its original state for further discussion. Try and elicit from students an explanation of the logic behind the exercise. In other words, see if students are able to come up with an explanation for why giving each student two desks did not double their ability to take notes; or why students crowded in to a small space together became distracted. The solution should be quite obvious, but may take some guidance by the teacher for the students to find the right way to express it: that there is still only one student taking notes, even if given two desks, or that there is not enough space for everyone to work in the opposite case.

As a final reflection for students after understanding the core concepts of the experiment that they just took part in, here are some wider questions that can lead them into other core ideas in economics:

- The concept of scarcity and abundance
- Productivity
- Utility
- Capacity constraints
- The concept of supply
- The concept of demand

If time, have students look into some of these concepts and try to draw a parallel between what they witnessed in the case demonstration, and what they are starting to understand of the core axioms in economics and areas of study that the field delves into.

A final point to make here, for the educator, is this exercise can serve as a useful time to reflect on what makes an effective classroom in terms of physical attributes. Through the experimentation with the adding or removing of physical factors from a classroom, an observant educator may also be able to determine what an optimal level of physical factors truly are, and if possible implement it. It is important that as educators of economics that we are not merely parroting theory from a textbook, but are also applying the principles of economic thinking to optimize our classrooms in a deliberate and scientific manner. If we want our students to move beyond parroting back graphs and tables, and thinking as economists, we must surely lead by example and demonstrate the application of economic thinking in the classroom.



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## Socioeconomic and Sociocultural Logic behind Remittance Flow: A Case Study of Two Migrant-Sending Villages in Cambodia

Veng Seang Hai<sup>1</sup>

### Abstract

Since migration from Cambodia to Thailand has become a phenomenon, emerging studies have mainly discussed the development impacts of remittances on Cambodia. In particular, Cambodian government bodies, working to establish policies on labor migration, prefer to look from a macro perspective to understand how international remittances influence the development in Cambodia. However, lacking transnationalism conceptuality, the existing studies have underplayed broader explanations behind the flow of remittances into Cambodia which could be viewed from a micro perspective at the community level. Being conceptualized by transnationalism, the study is to fill the gap.

Drawing upon empirical data from two migrant-sending villages in Banteay Meanchey province, Cambodia, the study finds that there is socioeconomic and sociocultural logic in explaining a multidimensional flow of remittances into migrant-sending households and community. On one hand, remittance flow is determined by various forms of socioeconomic structures within households and community such as house modernization, asset accumulation, agricultural intensification, children's education, shadow banking, housing installment, loan and borrowings, and informal real estate intermediary. On the other hand, sociocultural logic lies on various cultural and religious determinants such as marriage norms, family narratives, and Buddhist norms and practices. The study has wider implications on the policy level that it is necessary to utilize some anthropological notions like transnationalism in understanding connectivity in local context because at large extent there are transnational relations which go beyond nation-state containment, and which influence the effectiveness of a policy in migration and remittance control.

**Keywords:** Migration, Policy, Development, Anthropology, Cambodia

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## **The Learning Objectives of the Case Study**

The objectives of this research are as the following: (1) to introduce a case that empirical evidence from anthropological approach could “complement” macro-structured disciplines (i.e. economics) in explaining the flow of remittance from Thailand to Cambodia, (2) to study non-state mechanisms at household and community levels for sustaining transnational linkage with migrants in Thailand, and for managing and attracting remittances to Cambodia, (3) to call for closer attention from Cambodian policy makers to objectively understand the existing non-state mechanisms of remittance flow in order to produce consistent policies for governing international remittances and Cambodian population.

## **The Synopsis of the Focal Situation**

Following series of conflicts, Cambodia has experienced gradual growth and arrived at a new point of high connectivity due to its accession to regional initiatives such as the Association of South East Asian Nations (ASEAN). Such the rise in connectivity triggers the question on the reconfiguration of its populations because post-conflict Cambodia still faces challenges including unemployment, poverty, and population growth (National Institute of Statistics, 2010). As a result, Cambodian people seek alternative livelihood strategies, one of which is the international migration to provide greater accesses to resources and capital in more advanced countries (Lee, 2005).

From 2000 to 2015, the number of overseas Cambodian migrants has increased from 3.7 % out of 12 million total populations to 7.6 % out of 15.5 million total populations. One of the top destination countries is Thailand, which receives 68 % of total Cambodian migrants (OECD/CDRI, 2017). The massive outflow of migrant workers is boosted by bilateral agreements between Cambodia and Thailand. For an instance, in 2014 the two countries signed a Memorandum of Understanding (MoU) in Employment of Workers to foster legal recruitment of Cambodian workers in Thailand. Then, over 700,000 Cambodian workers were registered (Mekong Migration Network, 2014). Today, migrant workers are acknowledged as agents of innovation and development since Cambodian government and international development institutions are preparing effective and comprehensive frameworks and policies for sustainable development based on Cambodian oversea workers according to the Ministry of Labour and Vocational Training (2014).

Not only government and NGOs but also scholars became fascinated in studying migration from Cambodia to Thailand. Several instances include: migration patterns (Acharya, 2003), legal status and vulnerable well-beings of Cambodian immigrants (Walsh and Ty, 2011), and general consequences of international migration on various aspects such as family roles (Lawreniuk and Parsons, 2017), poverty alleviation (Roth and Tiberti, 2016), livelihood choices (Bylander, 2013), and financial settings (Bylander, 2014).

To complement these bodies of literature, this research delves into “transnational relations” that are forged and sustained by migrant-sending households and community in Cambodia on a purpose of conditioning the remittance flow from Thailand. Drawing upon empirical data from the two study villages in Cambodia, the study highlights the occurrences of socioeconomic and sociocultural logic in the multidimensional flow of remittances into the households and the whole community. The finding urges government policymakers be alerted that there exist multidimensional relations and networks in local context which interlock and circumvent the state control; therefore, it requires migration policies to be consistent with this local context. The study also recommends academics in macro disciplines like economics to pay an attention to community-based evidence from other disciplines like anthropology in order to create an integrated knowledge about remittance flow.

The paper has three sections. The first section briefly explains the key concept of transnationalism which gives a broader understanding of cross-border relations between non-migrants in Cambodia and migrants in Thailand, and on remittance flow. Building on the reviewed literature, I pinpoint a conceptual limitation that underplays the roles of migrant-sending households and community in catalyzing the flow of remittances. The second section describes methodology with focuses on research sites, the context of migration, and data collection methods. The third section proceeds to the body of the case by giving empirical evidence on socioeconomic and sociocultural logic that households and community in Cambodia formulate to condition the flow of remittance from Thailand, and by providing policy and academic recommendations.

### **Transnationalism: Transnational Social Fields as Linkages for Remittance Flow**

In the wake of immigration of workers from poor countries to rich countries, scholars have been long interested in immigrant assimilations. They have discussed whether immigrants directly cause the informal economy in the receiving countries. For instance, the rise of the informal economy in America does not reside in the influx of immigrants but is the result of structural transformations of the larger urban economy (Sassen, 1991). Immigrants are just the ones who grab the opportunities which allow them to be part of the informal economy, but they are not the direct cause of it (Sassen, 2000). Likewise, in Germany, the increase of immigrant participation in the informal labour market is the result of post-war deregulation policies on foreigners while in the Netherlands the rise of informal entrepreneurs actually depends on high demand of cheaper labour and marginalization of immigrants (Wilpert, 1998; Kloosterman, van der Leun and Rath, 1998). Also, non-economic impacts of immigrants were also discussed with emphasis on the emerging citizenships, race differentials, uncertainty in immigrant legality, and social mobility of immigrants within different ethnics and different generations (Negroni, 2011; Fox and Guglielmo, 2012; Menjívar, 2006; Platt, 2005; Catron, 2016).

In addition to discussions on immigrant assimilation, other scholars have taken a different glimpse into a conceptual framework that calls for interconnectedness between immigrants and home. The conceptual framework is called “transnationalism” which prefers a term “*trans*-migrant” in lieu of “emigrant” or “immigrant” on the ground that *trans*-migrants not only assimilate and make changes in the host countries but also forge multidimensional relations and networks with those in their home countries, beyond the containment of state-defined boundaries (Glick Schiller, Basch, and Blanc-Szanton, 1992). With regard of the decline in nation-state containment, scholars have proposed for re-defining societies because contemporary societies have changed not only their outer relations between and beyond nation-states but also their “internal quality” especially in the emerging context of advanced technology and modernization. What matters the most is the ambivalence in what and who constitutes the society or field which people are living in and crossing on (Beck, 2000).

In line with the proposal to rethink the meaning of societies, transnationalism scholars contend that human society is rather transnational and implicit cross national boundaries. They found that immigrants actually do not just leave but carry their homelands with them across national boundaries by first building cultural assimilations and later invisible but sturdy bridges of networks and family ties with non-migrants in home countries. In this essence, though *trans*-migrants are visibly limited by national boundaries, they are invisibly limitless because their sense of nation appears to be quite mobile and transnational (Basch, Glick Schiller and Szanton Blanc, 1994). It, therefore, provokes a reconsideration of society and social membership. Later scholarship reviewed the meaning of society and social membership based on a notion of “transnational social fields” (Levitt and Glick Schiller, 2004). The field is a set of multiple interlocked networks of social relationships through which ideas, practices, and resources are exchanged, organized, and transformed. Transnational social fields distinguish the ways of being and the ways of belonging amongst transnational individuals. Levitt and Glick Schiller explain:

If individuals engage in social relations and practices that cross borders as a regular feature of everyday life, then they exhibit a transnational way of being. When people explicitly recognize this and highlight the transnational elements of who they are, then they are also expressing a transnational way of belonging (2004: 1011)

Catholic religion exemplifies a platform of transnational social field in which Cuban immigrants in Miami, by conducting their Catholic rituals and shrines in places they are settling, can symbolically move back-and-forth the two societies (home and host), and sustain their past memories when they were in Cuba and future when they will return (2004: 1028).

The ways of being and ways of belonging not only maintain symbolic transnationality but also serve as a platform for capital circulation as indicated by following instances, one of which takes place in Haiti. Through the language of blood and descend, Haitian immigrants in the United States and Haitians in Haiti maintain relative networks and ties with their kinfolks and non-kinfolks living in Haiti. To elaborate, the immigrants can access and enhance the social capital just by sharing a common sense of nationalism in the language of blood and descend. The acquired social networks, to large extent, have economic benefits for the immigrants because they could facilitate the immigrants with the economic possibilities and investments in Haiti (Glick Schiller and Fouron, 1999). The other instance situates in a transnational society lived by Shan immigrants in Chiang Mai and Shan elites in Myanmar. The society is forged by “cross-border ethnonationalism” which is shared and practiced by both groups on both sides. It is a kind of structure that Shan immigrants are entitled to pay tributes to their home nation via economic, social, and political cross-border activities. What Shan immigrants in Chiang Mai receive in return is symbolic capital in forms of social and political recognition by Shan elites in Myanmar. Therefore, they become emancipated to remain their lives and social membership in both Chiang Mai and Shan state, as argued to be forever transnational (Amporn, 2017).

The aforementioned cases in Haiti and Chiang Mai shed light on transnational linkages only from immigrants’ perspective—how immigrants forge social networks and ties to secure gains from sending communities. However, we know almost nothing from perceptive of non-migrants in the sending community, while evidence from functional theorists suggests that people, to maintain stable social systems or fields, conform to the norm of reciprocity as the universal obligation (Mauss, 1950; Gouldner, 1960). To elaborate, the existing studies only reveal the ways in which immigrants maintain the ways of being and the ways of belonging to the home in order to secure their future. Yet, it does not mean that the non-migrants at home do nothing in reciprocity. In fact, they too have potentials to build ways of being and ways of belonging to the immigrants who are obligated to send remittances necessary for livelihoods of a wide range of people at home.

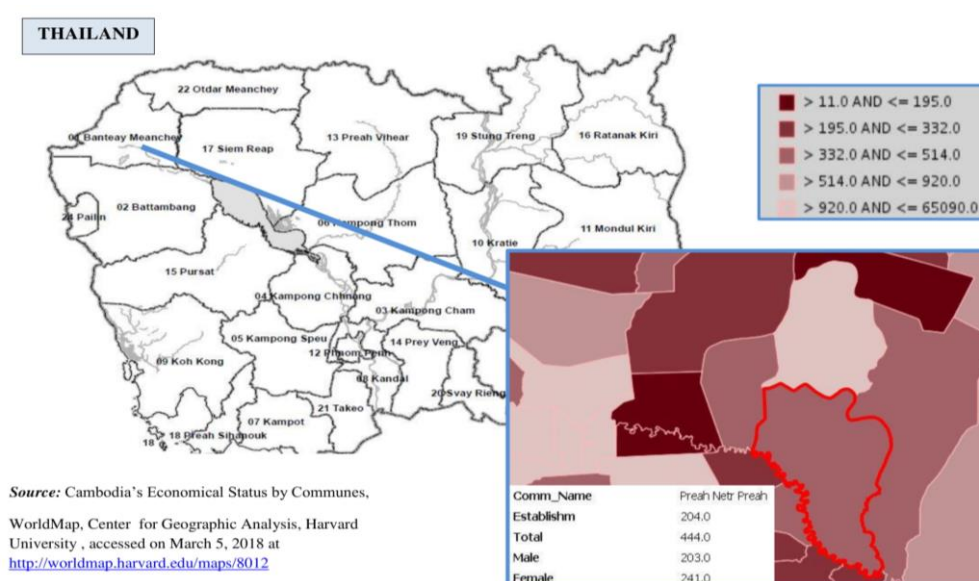
Finally, I claim that the concept of transnational social field is a powerful instrument for conceptualizing the potential linkages connecting those who stay behind and those who leave. Without moving physically by themselves, the left-behind in Cambodia can maintain cross-border social relations with the immigrants in Thailand through various forms of communications, and at large extent, the communication serves as a potential platform that attracts certain quality and frequency of remittances (i.e. capital) into the sending households and community.



## Methodology

The field research was conducted in two villages named Kandal and Poy Samrong in Preah Netr Preah commune (*khum*), Banteay Meanchey province, northwest Cambodia. The commune's economic status ranks lower than its neighbors, so economic migration is unavoidable for economic relief (Figure 1).

The site was chosen for three reasons of geographical proximity to Thailand, long experience of migration, and dynamics of groups with different socioeconomic profiles. Since the villages are close to border checkpoints, and transportation is getting easier, people now reach Bangkok in between 5 and 6 hours by local taxi networks. Villagers have long experience of migrating to Thailand for at least two generations. The first generation started in parents' generation in the late 1980s or early 1990s and ended in mid-2000s. The second generation, on the other hand, began consecutively in children's generation up until today. The main reasons for migration include the damages and devaluation of agricultural products and land confiscation motivated by the local military and economic land concessions. In the villages, there is a dynamic of social groups with different socioeconomic profiles—between those who survive on receiving remittances from migrants in Thailand and those who survive on running businesses and trades in the villages



**Figure 1:** Banteay Meanchey province and Preah Netre Preah's Economical Status

I use both qualitative and quantitative methods for data collection. I conducted 33 semi-structured interviews with migrants' relatives, non-migrants, return migrants and village chiefs, and I observed households' lifestyles and communication with migrants in Thailand. With the qualitative method, I expect to understand how the left-behinds maintain relations with the migrants so that they could receive remittances as their common income. Also, I conduct a household survey (N=64) to seek general information about remittance flow and usages. I visited the villages twice. The first time was in April 2017 during which I observed

the villages and migrants visiting on occasions like Khmer New Year<sup>2</sup>. The second time was between December 2017 and March 2018 when I spent the rest of my fieldwork on the survey, interviews, and observation.

## Socioeconomic Logic of Remittance Flow

In order to sustain the flow of remittances, both sending households and community play a key role in creating socioeconomic contracts that determine how migrants maintain their ways of being and ways of belonging with home; hence, the migrants are obliged to send remittances to the sending households and community accordingly.

At the household level, there are various socioeconomic contracts that support sending households to forge invisible but sturdy relations with migrants in Thailand, upon which the migrants are obliged to send remittance regularly. The contracts appear in forms of housing modernization, assets accumulation (i.e. land, gold), agricultural intensification, and education and childcare. First, amongst extremely poor households, what parents need to do first is to modernize their house from a broken wooden structure to a concrete structure. Since the parents cannot afford to build the house, they ask their migrant children to send money for the house construction. Second, other households need money to enlarge their economic income by investing the remitted capital into their domestic businesses (i.e. growing rice and buying lands). It is found that households, when their migrant children are still single, receive remittance to buy plots of land and buy new farming machines. These assets, though bought with migrant remittance, are registered to the parents' ownership. Third, emigrants have an economic obligation to send money to their parents to look after the little children; otherwise, they cannot have time and space to work in Thailand. That is considered to be a source for aging parents who cannot earn any income but monthly remittance for childcare. Children's education takes much attention from migrant parents because the amount of remitted money depends on the children's school performance at school. They send more money for children to go to school and buy new motorbikes for them if they get a good grade at school.

At the community level, the other locals who do not have any migrant family members but have remittance-related businesses also formulate socioeconomic determinants that regulate the importation of remittances into their revenue. These determinants include (1) informal banking system, (2) installment system, (3) loan and borrowings, and (4) informal real estate intermediary.

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<sup>2</sup> In fact, migrants visit home on other celebrations like *Pchum Ben* and *Kak-Then*. "*Pchum Ben*" is an annual cultural celebration that lasts for 15 days in total during which people go to the temple for making offerings to indicate respect for the dead ancestors. Amongst these 15 days, the last three days are the biggest occasions that attract the most majority of people. "*Kak-Then*" is an annual religious celebration when Buddhist followers contribute all kinds of offerings especially money to make merits and good deeds.



First, the local folks connect themselves to remittances through a traditional game that functions as a “shadow bank” which is joined by migrants’ parents who secure monthly remittances. It provides informal savings, financings, and investment vehicles to a dynamic of people without being regulated by the government (Tsai, 2015). The game is called in Khmer “*tong-tin*”, working in a complex process. Initially, it needs a trustee who has a stable income and permanent residence, and who gathers a group of players. Because there are 42 players in total, the game will last 42 months accordingly. In the first month, all players, “excluding” the trustee, contribute an agreed amount of money (i.e. 3000 THB) into a common pool that secures communal accesses to the raised money, so in total it accounts for 123,000 THB ( $3000 \times 41$ ). Then, the trustee is the first to withdraw the raised money for any uses upon his wills, but he has to replay in monthly installments over consecutive 40 months. Technically, he pays 3000 THB per month. For the next consecutive 40 months, there are serial auctions in which all players, excluding the trustee, compete for the right to withdraw the money from the pool. In every auction, the winner can withdraw the raised money, plus the repaid installment from the trustee. However, the losing players contribute a different amount of money, minus the amount of winning offer in the auction. For example, if a player wins the auction with 200 THB offer, he gets only 115,000 THB in total [formula:  $(3000 - 200) \times 40 + 3000$ ] because each losing players pay only 2800 THB. The next auctions are carried out in the same way till the last 42nd month. To note, the winner in the prior auction cannot join in the next auctions; he only has to return the withdrawn money back to the team in installment system as the trustee does.

The game has an implication that players in urgent need of investment capital will win the auctions, while a villager in less urgent need just waits for the “final deal”. The final deal means he can accumulate all fully repaid credit from previous players. He would finally get 123,000 THB. He gains money because he has paid for the monthly auctions in this formula [ $3000 - \text{winner offers}$ ]. Supposed that the offers rank 200 THB equally, the final player would gain 8200 THB [formula:  $200 \times 41$ ]. Mostly, the migrants’ parents prefer not to win the auction but to accumulate the final deal since they can gain. The migrants’ parents compete to win the auctions only when they need the money for building houses or investing in daily life. Instead, non-migrants in the community are more likely to win the auctions because they can access to investment capital without going the formal bank which has higher interest rate and risks of foreclosures. Therefore, non-migrants in the community prefer to play the game with migrant households because their income from remittance is considered stable to reserve securitization. There are at least 4 or 5 groups of *tong-tin* game in Kandal and Poy Samrong, joined by migrants’ parents.

Second, in the wake of housing modernization amongst migrants’ households, the local businessmen of construction supplies allocate a “predatory” payment method that incentivizes the households to buy their products with easier financing alternatives. The method is “installment sales” in which the households are allowed for partial deferral of payments. It requires the buyers to make regular payments or “installments” on monthly basis, plus a certain interest rate of at least 20 %. The households mostly take this method because they trust in the regularity of remittance from their children in Thailand. Likewise,

the businesses can maximize their income even in long-term. Therefore, I argue that not only migrants' parents but also local businessmen pave the ways for attracting remittances into his revenue by offering easier financial system such as installments.

Third, regularity of remittance also encourages the non-migrants to allocate loan and borrowings more easily and in “predatory” manner. The non-migrants concentrate giving a loan to remittance-receiving households, for a reason that remittance is stable and obligatory. To some extent, non-migrants who give loan and borrowings to migrants' parents absorb more fruition of remittances if compared to the parents themselves because they collectively accumulate remittance-based interest rates from multiple migrant households. In addition, when migrant households have reached a certain level of material modernization as seen in modern houses and luxuries, their rich neighbors will recognize their prestigious status. Therefore, the mutual interactions between these two groups become more so active and vibrant that borrowings and loaning are more possible to grant.

Fourth, the role of the village headman has been extended into a real estate intermediary who facilitates cross-border purchases of assets such as land and gold. His facilitation can be in various forms including investment consultancy and paperwork process. The headman looks for plots of land and then informs either the migrants in Thailand or the parents at home about the purchasable land. Several households follow the village headman's consultancy to buy land. Sokha, for instance, used the remitted money from her children in Thailand to buy a plot of land (38×40 meters width) which cost only 350,000 THB. The land now is estimated to cost at least 450,000 THB because the headman had proposed to the district government to build a country road that connects Sokha's land to farmland areas and to the main road. Additionally, when some households need money from the bank to buy land, the headman also helps to issue certificate letter to get loan approval from the bank. Then, he helps the loan takers deal with loan every month by making sure that the remittance is sent regularly.

Finally, according to these four determinants, it makes sense to say that the flow of remittance from Thailand to Cambodia is embedded not only to migrants' households but also to a wider range of social entities who formulate conditions to gain handsome shares of remittance. In other word, the amount of flown remittance is determined by the extent to which non-migrant entities formulate relations with migrants in Thailand.

## **Sociocultural Logic of Remittance Flow**

As important as socioeconomic logic, sociocultural logic plays a crucial role in determining the regular flow of remittances to the sending households and community. At the household level, the amount and frequency of received remittances depend on various cultural norms and narratives that circulate from households to migrants. For instance, because of patriarchy in marriage norm, migrant-son households enjoy less benefit of remittance if compared to migrant-daughter households. The reason is that the norm expects sons to relocate to live in the daughters' family, meaning that the migrant-daughter households will receive more labor forces after marriage. Also, when they have children, they tend to keep

their children in wife's family, so they have to send more remittance for childcare. In the meantime, migrant-son households complain that they receive less or no benefit because they have to keep the remitted money for bride price when their sons marry. Some households make uses of remittance for buying land only when the sons are still single. If they get married, they will no longer send money to the parents since having their own family to take care.

Besides marriage norm, households create various remittance-induced narratives based on the fact that parents have dedicated themselves to bringing up children. Parents and siblings at home maintain and circulate those narratives in order to alert the migrants to take care of the family in reciprocity. The migrants, therefore, have to be thrifty to save and send money to support the aging parents. If migrants fail to send remittance, they will receive moral sanction from family and society with an image of bad children. For an instance, in Sina's family, there are 4 children working in Thailand. When getting informed that her brothers bought a new smartphone, the oldest sister called to preach her brothers in Bangkok. She told them to resist their impulse towards modern materials. Sina repeats his daughter's preaching: *"Do not be so obsessed with buying new smartphones. Do not just think of getting fun. Please think of mom and dad. They have no one to count on. They have only you... You have to work hard. Do not loosen your string..."*<sup>1</sup> (Interview on December 01, 2017).

Sina also teaches his migrant children about Buddhist principles in gratitude: (1) *katannu* and (2) *katavedi*, which catalyze moral obligation of migrants to remit money whenever parents need. The first principle, *katannu*, means that children need to be "aware" that they owe great gratitude to their parents for giving them births and for bringing them up. The second principle, *katavedi*, means that children have to "payback" for parents' dedication to children's well-being. Interestingly, he combines the two principles together on a purpose that he expects his children not only be aware but also to pay back parents' dedication, so sending remittance is considered a mechanism of paying for parents' dedication. He preaches his children on big occasions like New Year, Pchum Ben, and other blessing rituals when migrants visit home.

At the community level, the local religious institution also plays a crucial role in developing the ways of being and ways of belonging between home and migrants, in pursuit of possible importation of remittance. Its role is to make it possible for what I call "transnational merit-making" in which migrants in Thailand donate money to the local temple in various ways. Firstly, the local monks sustain the faith in Buddhism amongst transnational migrants so that they carry on donating merit-making money to the local temple. When asked how to keep migrants spiritually connected to home villages, the local abbot highlighted three Buddhist teachings in Pali. They include (1) gratitude or obligation [*kataññu*], (2) patience or forbearance [*khanti*], and (3) trust or faith [*saddha*].

The first means that children, no matter where they are under any circumstances, have to bear in mind that they will always owe gratitude to their parents who have brought them up. Also, they have to give offerings to parents when they need. The second has an implication that migrants have to work hard with patience and forbearance in order to save money; otherwise, they will not find jobs or save money back home. The third has specific implication on husbands and wives who live in distance because of migration. The husbands or wives have to sustain truth and faith in each other so that their long-distance relationship remains solid, regardless spatial disconnection. The local monks always preach with these three teachings either on occasion that migrants and parents go to the temple on Khmer New Year and Pchum Ben, or on occasion that they invite the monks to do blessing ceremony at home.

Secondly, the local temple committee<sup>3</sup> calls for merit-making donations by spreading copies of invitation letter to villagers. When migrants' parents receive the invitation letter, they inform their children in Thailand whether they want to make merit. Sometimes, the informed migrants gather their peers in the same worksite and raise donations for making merit. For instance, Phat informed her son in Thailand about *Kak-Then* ritual in the village. Her son spread the information to other migrants and collected about 1000 THB later sent for the merit-making to the local temple.

The raised money is used for general development both in the temple and in the village. The development in the temple can be entrance gates, crematorium, restrooms, and common houses for monks, while development in the village can be road as well as supports to needy villagers. According to the local abbot, it is necessary to translate merit-making donations into development because doing so ensures accountability and philanthropy of the local temple which sustains the faith of people especially oversea migrants in Buddhism. Even though villagers experienced in crop crisis, the amount of merit-making donation did not see any decrease because migrants and their parents continue to make merit with remittances. Their names appear in the public in order to recognize their contributions development in the temple and community.

Thirdly, transnational merit-making appears to be more collective and in larger scale, involving local government and local religious institution. An instance is found in Poy Samrong. There has emerged an association called Poy Samrong Union which has hybrid functions both as an association of senior citizens and a donation center. Its history began in 2000 when a local NGO named International Age International sponsored to construct a wooden structure serving as a center of senior citizens in Poy Samrong; it is well known by the villagers as "resting house" or "*sala-chor-tien*". The house serves as a public space where the senior citizens gather on religious occasions such as Sila Day because the local temple locates a bit far. Since it was getting old, the village committee and temple committee ran a

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<sup>3</sup> Temple committee here means something more than the physical structure of temple lived by monks, but it refers mainly to an institutional organization of Buddhists which aims to deal with a merit-making donation and the general development in the village.

fundraising campaign to raise money to build a new structure. As the result, in 2004 the old wooden structure was demolished and replaced with a new concrete structure. Then, the local governor named it “the Poy Samrong Union”.

Its functions deal with not only senior citizens but also with fundraising campaigns for infrastructure development in Poy Samrong. The funding source largely relates to remittance from Thailand, according to the headman’s estimation. There are two success stories that depict the fundraising campaigns by Poy Samrong Union for local development. The first story was a project which constructed a small road linking Poy Samrong to the main road. At that time, the temple committee and village committee created fundraising activities. Then, migrant parents contacted to their children in Thailand in order to encourage them to contribute to the project. The migrants donated to the project by remitting money to their parents. Also, the headman sent the announcement of the campaign to migrants in Thailand so that they can raise more fund from other migrants. In total, the raised fund reached 3 million KHR, but it did not fully compensate the whole expense which cost up to 4 million KHR in total. To fulfill the unfilled fund, the Poy Samrong Union hosted another campaign which raised extra 1 million KHR. According to record from the headman, about 50 % of the fund came from remittance while the rest was from the non-migrants.

The second success story occurred in 2011 when there was a restoration of a pond. The pond was getting shallow by landslides, having negative impacts on water resource for farmlands in the village. At this time, the fundraising campaign was done in a way that villagers were expected to buy the removed soil after the restoration finished. They could use the land for any purposes. It means that the more people bought the removed soil, the deeper the restoration could go. Finally, the budget from soil purchases reached 693,000 THB, and the pond was well restored. Based upon the two cases, it is possible to say that economic aspect alone cannot explain the regular flow of remittance because what does matter is something about cultural and religious rationality embedded to individual migrants who are morally obliged to send remittances.

Finally, while economists could estimate how much money is remitted, they could not estimate how much influence the religious and cultural norms and practices have on conditioning the remittance. Therefore, if Cambodian policymakers would like to make migrants remit more capital, they could play attention to cultural entities in the home community like Buddhist temples and people’s practices that shape people’s decision to remit capital.

## **Conclusion**

In conclusion, based on the empirical analysis above, I would like provide two-folded recommendations for both policymakers in migration management and academics in macro domains like economists. For the policy recommendations, I will use *the Labour Migration Policy for Cambodia 2015-2018* issued in 2014 by the Royal Government of Cambodia as a sample to support my claim for the necessity to understand transnational migration and remittance flow in the local context which well explains the characteristics of

migrant networks and relations. For the academic recommendations, it recommends for a new analytical framework which integrate different disciplines and approach regardless their expertise dominance in order to better understand a subject matter. Even though this case is not prominent,

## Policy Recommendations

In 2014, the Royal Government of Cambodia and the Ministry of Labour and Vocational Training of Cambodia, in collaboration with International Labour Organization (ILO), launched with three main objectives, one of which is to “harness labour migration and mobility in order to enhance social and economic development in Cambodia by recognizing that migrant workers are agents of innovation and development”. To realize this objective, the Government established three policy areas which focus on coherence inter-sectorial planning, remittance-based investment, and social and economic reintegration (MLVT, 2014: 50-55). Based on empirical evidence of socioeconomic and sociocultural logic in remittance flow, this study firstly identifies some limitations of two policy areas, and secondly provides certain recommendations with regard to the identified limitations.

**Policy 14:** *“Labour migration continues to be (A) included in the national development and sectorial plans to (B) recognize and (C) maximize the development potential of migration for Cambodia, and (D) ensure coherent development planning”* (MLVT, 2014).

**Transnationalism theory helps policymakers see what migration is made of:** If focusing on these four verbs listed from A to D in Policy 14, we can see a fundamental problem that the policy underestimates the “component of migration”, but instead jumps right into integrating (A), recognizing (B), maximizing (C) and (D) ensuring the development planning. My recommendation resonates with a suggestion by Rittel and Webber (1973, pp. 156-157) that planners are prompted to formulate goals of policy systems that they deal with the “syntax of verbs” rather than nouns—to ask “What do the systems do?” rather than “What are they made of?”

In fact, before jumping to the matter of integrating migration into development agenda, there are more important questions that Cambodian policy makers should ask—for an instance, what are the characteristics of transnational relations between migrants and their families and the community? What are these relations made of? Policymakers should reconsider using the notion of transnationalism because it provides a clearer view of multi-stranded relations between migrants in Thailand and their families in Cambodia.

For various instances, in the sub-notion of ways of being and ways of belonging, policymakers could possibly understand why some migrant choose not to send money back home or to their community. Based on transnationalism, probable explanation is that in their home village, there are no Buddhist committee and village committee initiating development projects like road constructing, or that the migrants do not trust in Buddhism anymore because the local monks are rumored to violate Buddhist rules. From socioeconomic logic,



migrants do not send money home maybe because there are no financial mechanisms imposed by the local businessmen like having installments or having informal banking group.

Therefore, it is recommended that policymakers pay close attention to transnationalism perspective of migration because it will help identify the transnational connection between non-migrants and migrants in the local context which serves as a channel to determine the flow of remittance from Thailand to Cambodia.

**Policy 16:** *“Productive return and reintegration of women and men migrant workers are enabled through evidence-based policy, and strengthened service provision for social and economic reintegration, including employment services, skills development and recognition, enterprise development training, and investment programs.”*

**Policymakers should reconsider migrant investments and reintegration in development:**

The policy area is good but still limited to “return and reintegration” of migrants, meaning that migrants could contribute to Cambodia’ development only when they come back home and re-enter the society. Nonetheless, migrants could invest in home without return or repatriation. The notion of transnational social field suggests that migration society is broader than return and repatriation, but extended into a flexible and transnational society that migrants could communicate and transfer capital back and forth to their home. For an instance, migrants in Thailand are able to invest in purchasing land and putting money into village saving group by the assistance of their families. Therefore, based on this point of view, Cambodian policymakers are encouraged to create a modern investment and development platform that allow migrants to invest transnationally without waiting for them to return or repatriate. They should bear in mind that to engage migrant remittance in social and economic development in Cambodia requires a strong understanding on local knowledge of how they are interconnected with their families and the community because the knowledge would lead policymakers to initiate alternatives to keep migrants ways of belonging and ways of being with the community so that they send more money to invest without return or repatriation.

## **Academic Recommendations**

Knowledge is produced differently according analytical frameworks of different disciplines. For an instance, economists who are fascinated in using numbers and other econometric methods to explain phenomena like migration are more likely to view migration as a process of gaining some sorts of economic values like income. Their methodologies are more related to graphs and number explanation. On the other hand, academics in other disciplines like sociologists and anthropologists have different epistemological points of view and prefer a different tool to study migration. Rather than seeing migration as a process of gaining or losing any economic values, some anthropologists prefer to examine what migration is made of and what are the in-deep characteristics of migration. They also prefer to use qualitative methods like participatory observation, interviews, informal talks, and other methods which are flexible to everyday routines and local context.

Particularly in this case, even though remittance sorely share economic aspect because it has a lot to do with remitted money, study about remittance does not limit to economic lens. Using sociological and anthropological approaches, this study identifies hidden sociological structures behind remittance flow. Therefore, it recommends academics of different disciplines to open their expertise boundaries and look beyond their own expertise in order to see things clearly from a different corner. There is always more than one answer to a question.

For teachers who aimed to teach interdisciplinary lesson, it is recommended to use this case study as a sample through which their students could see how remittance which used to be over studied amongst economic scholars could be examined by anthropologists and sociologists. Students could also learn that economists could only explain quantitative properties of remittance, but they could dive deeper into qualitative properties of remittance. Only academics in different disciplines like anthropologists and sociologists manage to go deeper into qualitative properties. Also, those who teach policy management are recommended to use this case as an example to encourage their students to look things beyond macro perspectives by linking issues to micro perspective too, before designing a plan. Before jumping into how to draw a policy for a migration problem, policy students should take a glimpse into what are the components of migration—what is it made of?

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## Tan Hiep Phat: Recovering from an Ethical Crisis Field: Business Ethics

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### CASE READING

#### **Võ Văn Minh**

Minh Vo is a 36- year- old single father. He lives with his old parents, a sister and his son in a small poor house in Tien Giang province; He and the sister operate a small food & drink shop at An Cu T-section, Cai Be district, Tiền Giang. The shop is his only business and the source of his family income. His earnings of about 50,000 VND per day (2.2 USD/day) is not enough to pay for the cost of living. He and the son often need supports from the father and sister. Like many other poor people in the country side, he has just passed a primary education, which becomes a serious barrier to his finding of a suitable job in the province.

Like many other low- income people in Tien Giang province, Minh is always in short of money. He said if he won a ticket lottery of VND 1.5 billion, he could dramatically change his life. He could use the money to upgrade his house which is currently in poor conditions, widen the business shop as well as provide his son with some better learning facilities. In addition, he could, together with the family, fully enjoy the national TET holidays.

Minh's shop buys food materials from local small markets and drinks from corporate agencies in the district. Various corporate brands have their agencies in the area, such as Coca- Cola, Pepsi, Heineken, Tiger, Tan Hiep Phat Co., Sabeco, etc. Daily contact between the shop and the agencies is maintained to ensure that the drinks are always available to consumers and all the corporate promotion campaigns are well implemented. Records of the shop's daily sales of drinks serve as inputs sent to the relevant companies. Drinking products are packaged mainly in two container forms: drinking bottle and canned drinks. Local buyers prefer the plastic bottles to the canned drinks due to its lower prices. The plastic bottle has its cap which can be lifted by a bottle opener.

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## **Tan Hiep Phat Corporation**

Tan Hiep Phat Co. was established in 1994 from its original Ben Thanh Beverage Factory in Vietnam. In the early years of operation, the company focused on producing brewing yeast and sugar to serve customers in the local markets. Currently, the company has a staff of more than 4,000 employees, offers about 20 drinking and other food product categories sold in Vietnam and exported to 16 foreign countries all over the world. Its main products are canned and bottled herbal teas, green tea, energy drink, winter melon tea, soya milk, and purified water. The company is now one of the leading drinking corporations who can compete with the leading international competitors operating in the country. Tan Hiep Phat possesses three granted national-level product brands: “Dr. Thanh” Herbal Tea, “Zero-Degree” (O°) Green Tea and “Number One (No1)” Energy Drink. It now becomes the biggest fast-moving consumer goods business in Vietnam.

Up to 2014, Tan Hiep Phat has achieved an impressive growth and gained good image of a reputation of a Vietnamese successful business model. The company achieved the second largest position in the drinking product industry in terms of the market share with 22.65%.

Tan Hiep Phat’s production system uses modernized sterilely-technological process called “Aseptic” imported from GEA, an industrial leader of innovative solutions for smart food processing in Germany. The GEA with German technology ensures absolute sterilization for their drinking products which are free of food preservatives and industrial coloring admixture. It is the fourth time, the company has been granted “the National Brand” (2010, 2012, 2014 and 2016). The company has also received international certificates such as ISO 14001-2004, ISO 9001-2008, met HACCP Standards for Product Hygiene and Safety Control System.

### **A Fly in a Drinking Plastic Bottle**

On December 03, 2014, while opening a drinking bottle nationally branded “Number One- No1”, a product made by Tan Hiep Phat, for a consumer, Võ Văn Minh has found a fly in it. He thought it was an opportunity to extort the producer - Tan Hiep Phat Co. On December 05, 2014, he called the company, informed the problem and asked a pay of one billion VND (45,000 USD) to buy his silence. He said that if the company did not give him the full amount of money, he would send his claim to the Consumer Protection Bureau of Binh Duong province where Tan Hiep Phat’s headquarter was located. In addition he would inform the case to communication broadcastings, arrange, print and spread out 5,000 leaflets to inform the buyers about the fly found in the bottle.

## **Tan Hiep Phap's Responses**

As a matter of fact, it is easy for someone to open a cap of a drinking bottle and put something in and carefully recap it. The producer really can not control this after the products have been distributed in the market.

After receiving Minh's call, Tan Hiep Phat Co. has three times sent its representatives to Tien Giang province to meet and negotiate with Minh. All the meetings were recorded by the company. The company has reached an agreement with Minh to reduce the amount from one billion VND down to 500 million VND (22,500 USD).

On January 27, 2015, Phung Tieu Long, Tan Hiep Phat's representative, met Minh Vo at a coffee shop in Tien Giang and gave him money and ask him sign a transaction bill. While Minh Vo was receiving the money, he was spotted and arrested by the police. It was recorded that this was not the first time Tan Hiep Phat worked with the police to deal with the similar cases in the past.

Because of exaction act, the court ruled that Minh Vo was guilty and passed a sentence of 7 year's imprisonment on him.

## **Risk Management and Business Ethical Crisis**

After the court passed a sentence of 7 years' imprisonment to Minh for his exaction, there has been a consumer large boycott wave on Tan Hiep Phat's products, which negatively affected the company's image and performance. The boycott campaign took place via social networks, forums, word of mouth in all over the country. Many people were angry and indignant when talking about the way the company processed. Consumers thought that Tan Hiep Phat has informed the police to spot and arrest Minh when giving money to him and turned the case into the criminal one although Tan Hiep Phat said they did not do that. Many individual buyers, shops, restaurants, etc. have shifted to use products of other brands and refused to buy and stock Tan Hiep Phat's products for their inputs. Some restaurants and food stands have hung their notice boards with the words: "we don't sell Tan Hiep Phat's products" at their front doors.

Majority of the customers blamed on the company for cheating. They thought the company has agreed to pay Minh Vo to get his silence while, at the same time, informed the police to arrest him.

## **Consequences**

According to Ms. Tran Ngoc Bich, director of Tan Hiep Phat, Minh Vo case has caused a loss of more than 1,000 billion VND to the company after the event. However the company would not ask Minh Vo to compensate it. A manager of the company said: "Not only we suffered from the legal and financial costs, did we also experience a destroying of the company's reputation, an erosion of our stakeholder's confidence including the consumers, our employees, the society and the government as well".

## **Recovering from the Ethical Crisis**

After the scandal, Tan Hiep Phat's CEO has developed an Ethical Crisis Management Plan to respond to and recover from the ethical disaster. The company has spent several times listening to the customers' opinions via focus groups with direct interviews. All the customers' response feedbacks were recorded and carefully analyzed. The company needs the customers' opinions, expectations and their advice on how to recover their customer trust.

On a press conference hold after the court on February 19, 2015, Ms. Tran Uyen Phuong – Deputy General Director of Tan Hiep Phat- has announced its responsibility and accountability. The company has apologized its stakeholders and Minh Vo's family for its actions because of inexperience in handling such a big dilemma problem. The company insisted that it has never encouraged Minh Vo's exaction plan nor wanted the police's involvement. Tan Hiep Phat has its Code of Ethics and always sticks to it.

The company persistently pursued its popular corporate social responsibility programs. Especially for the philanthropic programs, Tan Hiep Phat has sponsored a lot of events including: Annual "Golden Globe" programs: granting financial prizes to 10 youth talents who won in the contest of Science and Technology research projects; Annual "Lighting Dreams" programs: giving 1,000 gifts to those pupils who live in difficult conditions in the country; Monthly "Back to Love" programs: giving food donors to the poor, ethnic people, and those who live in remote areas; Monthly "Golden Tintinnabulum" program: sponsoring start-up projects and production to the poor and those who live in remote areas; Giving machines that turn sea water into drinking one to those who live in the islands; building 24 concrete bridges in the remote areas; giving financial assistance to victims of natural disasters in the country, and many other annual philanthropic programs.

Tan Hiep Phat business strategies have also been changed to gain intensive growth. The company has shifted its production to Number One Ha Nam (2015) - a newly established subsidiary in Ha Nam, a province in the Northern part of Vietnam. This project aims to expand its business to the Northern new markets and create about 1,000 new jobs for people in Ha Nam province and surroundings. The sales in new Northern markets have successfully compensated the sales reduction in the Southern of Vietnam in 2017. Up to 2017, the company has had their products sold in 21 countries.

In 2014, before the crisis, Tan Hiep Phat's sales reached nearly VND 7,000 billion. Earning before tax was VND 930 billion and profit after tax was VND 730 billion. This has made Tan Hiep Phat one of the most profitable private companies in Vietnam and a leader in the non-alcohol drinking industry. During the periods 2015-2016, after the crisis, its sales have reduced down to VND 5,300 billion. However in 2017, the company's sales have increased dramatically back to more than VND 7,000 billion. Profit before tax has doubled to VND billion1,840 as compared to sales in 2014, the period before the crisis. In addition, Tan Hiep Phat has been granted "The Brand of Community" in 2015

Tan Hiep Phat 's strategic plan of diversification growth has gone further when the company announced it has entered into the Real Estate market in Vietnam in 2016. The company estimated the rising up of this sector in future.

## **Case Questions**

1. Discuss possible factors that may lead to Minh Vo's decision to ask payment from Tan Hiep Phat. Which factor is the most important? Explain.
2. Tan Hiep Phat was said to have agreed to pay Minh VND 0.5 billion for his keeping silence, and at the same time, informed the police to spot and arrest him. If this was true, do you agree with Tan Hiep Phat action? If you were Tan Hiep Phat's CEO, how would you handle the case?
3. Is Minh's action an extortion or just a transaction with the company to sell his silence? Explain.
4. Discuss what Tan Hiep Phat has done to recover from the ethical crisis. Could you suggest more strategic actions to help it deal with the crisis? Explain.

## **FOR INSTRUCTORS**

### **Case Synopsis**

This case focuses on a consumer trust crisis that has happened at Tan Hiep Phat Co., Vietnam in 2014. Tan Hiep Phat is one of the most popular brands of the Food and Beverage manufacturing industry in the country. It is a true story analyzing those factors that may affect individual's ethical/ unethical decisions and the stakeholders' responses to the corporation's ways of dealing with the crisis. The case discusses causes, consequences and implications of Tan Hiep Phat brand crisis.

An owner of a small vendor at Cai Be ward, Tien Giang province has discovered a fly in the company's product: drinking bottle "Number One". He has called the company and asked to be paid VND one billion in exchange for his silence keeping. If the company didn't pay or meet his requirement, he would disclose the hard situation to ruin Tan Hiep Phat brand and reputation in the market. However, the way that Tan Hiep Phat managers used to handle their brand crisis has faced dissent from the society.

Based on this true story, the case analyses possible factors that may affect an individual's ethical/ unethical decisions. It also identifies pros and cons of Tan Hiep Phat's responsive policies to deal with the crisis. In addition, the case also discusses measures that could be used to deal successfully with the brand crisis.

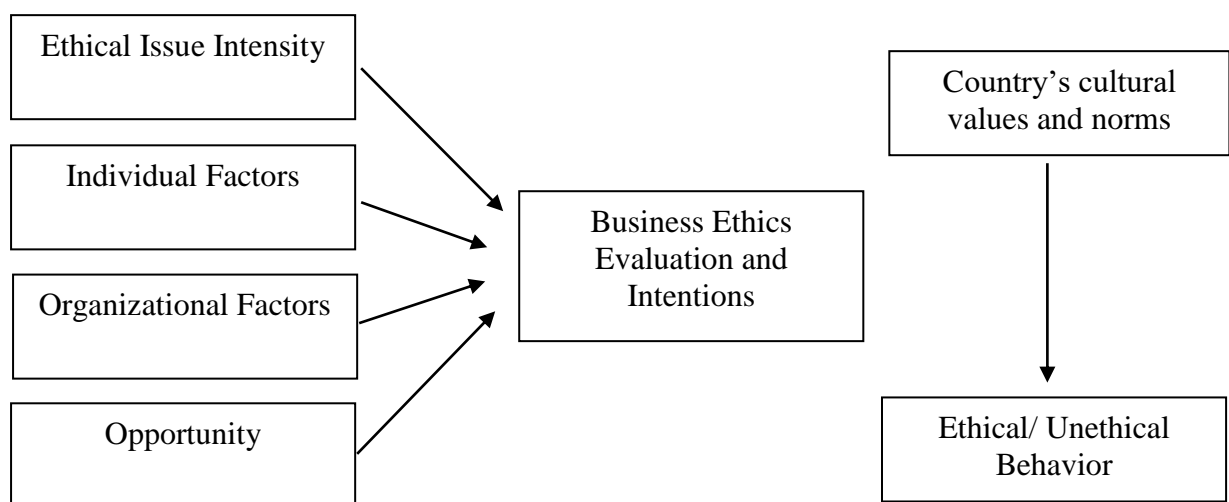


Managers are always required to make ethical decisions for the sake of sustainable development of their business as well as the company's contribution to their society. On the other hand, consumers should not forget their citizens' duties of integrity. They should hold their responsibilities to their families and the country's goodness.

This case study is a part of the research project funded by Vietnam National University Ho Chi Minh city (VNU-HCMC).

## Conceptual Framework for the Case Study

The theoretical review that supports this case is the conceptual framework adopted from Ferrell Fraedrich and Ferrell (Fraedrich & Ferrell, 2008):



**Figure 1:** Framework for Understanding Ethical Decision- Making in Business

## Learning Objectives

After reading and discussing the case, the students are expected to be able to:

- Understand the concepts of business ethics, its important roles in doing business today.
- Understand concepts that are related to business ethics such as: honesty, fairness, integrity, accountability, etc. and how they are important to building long-run strong business relationship.
- Identify possible factors that may affect the ethical or unethical decisions made by an individual or organization.
- Learn how individuals should ethically behave in response to similar situations like that of the case.
- Learn how organizations should ethically behave to recover from ethical crises.
- Learn the steps that an organization should do to recover from the similar ethical crisis in future.



## **Suggested Answer Hints to the Case Questions**

1. Discuss possible factors that may lead to Minh Vo's decision to ask payment from Tan Hiep Phat. Which factor is the most important? Explain.

**Answer hint:** At least four factors that may lead to Minh Vo's unethical decision: Ethical Issue Intensity; Individual factors; Organizational (family) factors; and the Opportunity. The Ethical Issue Intensity factor is most important.

2. Tan Hiep Phat was said to have agreed to pay Minh VND 0.5 billion for his keeping silence, and at the same time, informed the police to spot and arrest him. If this was true, do you agree with Tan Hiep Phat action? If you were Tan Hiep Phat's CEO, how would you handle the case?

**Answer hint:** If it were truth: Minh Vo's action is an exaction which violated the country laws. Tan Hiep Phat should not have agreed to pay Minh to buy his silence. Tan Hiep Phat should also not have informed the police to spot and arrested him at the same time as it was considered cheating. The student should not agree with Tan Hiep Phat's action. If a student were Tan Hiep Phat's CEO, he would suggest his alternative solutions. This is an open-end question.

3. Is Minh's action an extortion or just a transaction with the company to sell his silence? Explain.

**Answer hint:** Minh's action is an extortion which is unethical and illegal.

4. Discuss what Tan Hiep Phat has done to recover from the ethical crisis. Could you suggest more strategic actions to help it deal with the crisis? Explain.

**Answer hint:** Tan Hiep Phat has:

- Made customers the top priority in dealing with the crisis
- Assumed its responsibility and accountability
- Communicated openly and frequently with customers to get their feedback
- Handled the crisis honestly
- Stick to their Code of ethics and Corporate Social Responsibility.

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## Voluntary Turnover Management Challenge in Startup Social Enterprises: Case of Wedu Global

Dipendra K C<sup>1</sup>

### Abstract

The studies on voluntary turnover management challenges are not new to the field of management. Plethora of research explore the myriad aspects of the turnover management challenges in well-established and large organizations. However, little is known on how startups in the social sector manage this vital, yet, unexplored challenge. This case study sheds light on the voluntary turnover management challenges faced by a registered foundation in Thailand. It further explores the initiatives taken by the top management of the organization and their influence on the turnover.

This teaching case study helps its readers understand the context of a nonprofit organization that relies mostly on non-local staffs. It highlights the journey of the organization and its evolution on human resource management practices. The teachers and student adopting this case study in teaching should expect to answer questions like what are some of the problems associated with the human resource retention? What efforts has the organization taken to address the problems associated with human resource retention? Are the efforts taken by the organization sufficient to address the problem? Why or Why not?

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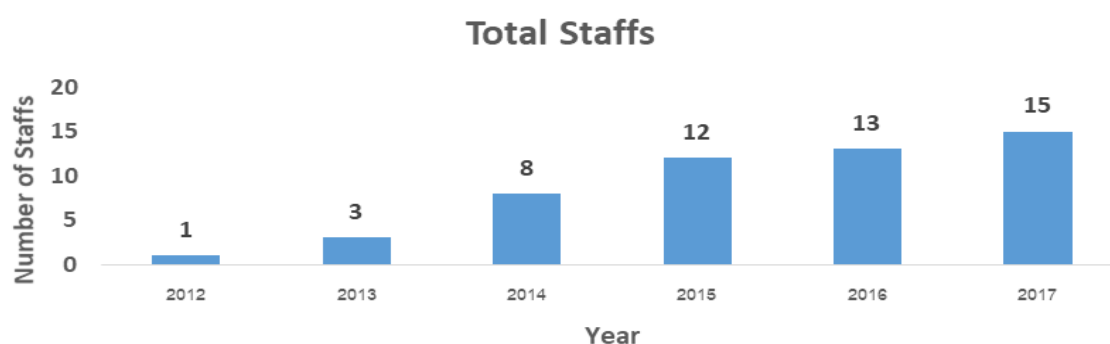
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*How do you feel when you look around and realize that more than half of your colleagues have been in the organization for less than 12 months?*

In August 2017, Mario Ferro, Co-Founder, and CEO of Wedu left the mid-year retreat with a mixed feeling. He was wondering about his organization's future. Wedu was the pioneer provider of mentoring and access to innovative financing options to its Rising Stars, or high potential young women from underprivileged Asian communities.

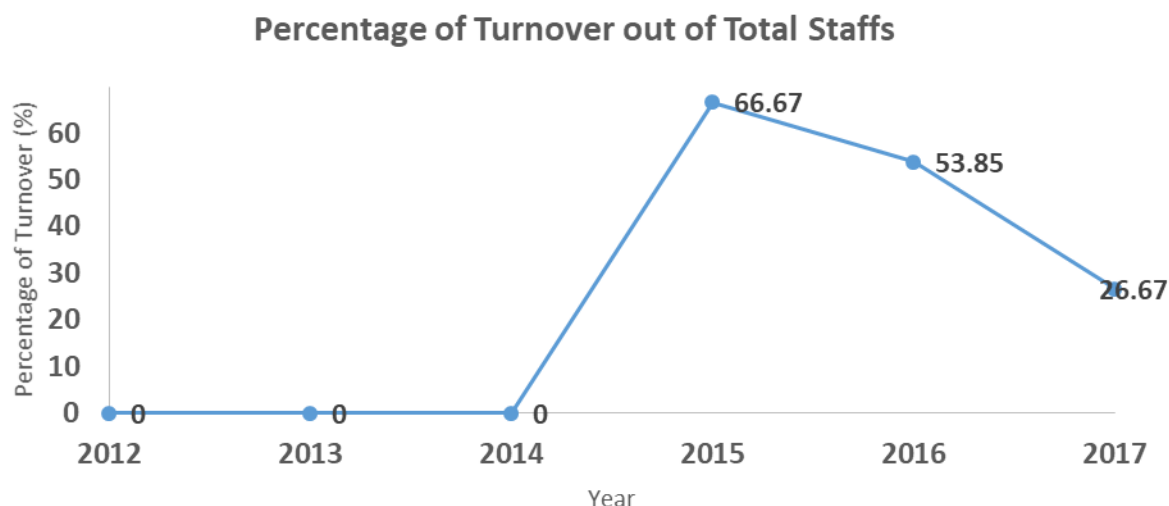
The top management of the organization had set a new and aggressive milestone for the organization. By 2020, the organization wanted to expand to 3 new countries in Asia and the was not possible to achieve until and unless Wedu attracted and retained the best minds to achieve this. It sounded reasonable enough to an outsider, but the senior management team knew better the inherent tensions of the costs associated with expansion and the investment that is required to keep the employees satisfied. In addition, Wedu was not like any other conventional businesses which were selling products and services solely with the aim of making profit.

As the team walked back from the retreat, they were reminded of the humble and difficult experience in 2012 that had made Wedu aware of the difficulties ahead as it transitioned from a tow-headed organization to a large organization with multiple in-country offices.



**Figure 1:** Growth of Staffs at Wedu

The past five years since Mario started Wedu in 2012 had been a vertical climb for Wedu. Wedu had grown from serving 5 Rising Stars in 2012 to 405 in August 2017 and its annual budget had increased from USD 25,000 to USD 1 million per year. In response to this growth, the company size in terms of its staff had increased from 2 staffs in 2012 to 15 staffs in 2017. Wedu had always recognized that its employees, or “Wedudes” – the term invented by the employees themselves, were at the heart of its bonafide achievements. It had a handful number of staffs who had worked with the organization since its inception. However, with the growth in the number of staffs also brought the problem of voluntary turnover in the organization. By the end of 2015, Wedu’s employee turnover rate was at record high.



**Figure 2:** Annual Turnover Rate (in %)

The team was very small until 2014, totaling to 8 and there was no turnover at all. However, in 2015 alone the company increased its staff size by 50% making it a total of 12 and that year saw the record high percentage of turnover. There was a turnover of 66.67% (Figure 2). Though the turnover rate was going down, still it wasn't sufficient for the organization if it wanted to achieve its ambitious goals.

In 2017, the CEO received resignation from four out of seven key department managers and 63% of the employees had worked in the organization for less than a year. As Wedu continued its heady growth and pursue the ambitious goal of serving 1,000 Rising Stars by 2018, it came as rude shock.

As Wedu continued its steady growth and achieve its ambitious goal, the Wedu leadership needed ways to prevent crises like this one from recurring. But there was no one stipulated path or a specific role model to follow.

## The Birth of Wedu

Mario was born in a middle class family in Italy. He was a son of a banker father and housewife mother. He had a very humble beginning and was never exposed to the difficulties that people of his age faced.

He had his first university degree in Italy and went to London School of Economics to pursue his Master's Degree in Development. This is when he says "started realizing" the magnitude of problems.

Mario had served as the senior advisor for Energy Investments for Greenpeace and was a former Senior Consultant for PricewaterhouseCoopers (PwC) Advisory. In addition, Mario was an Acumen fellow and he spent his one year in India. This experience led him to understand the poverty and new models of social change, in his words, "it enhanced my capabilities as leaders to take on some of society's greatest challenges".

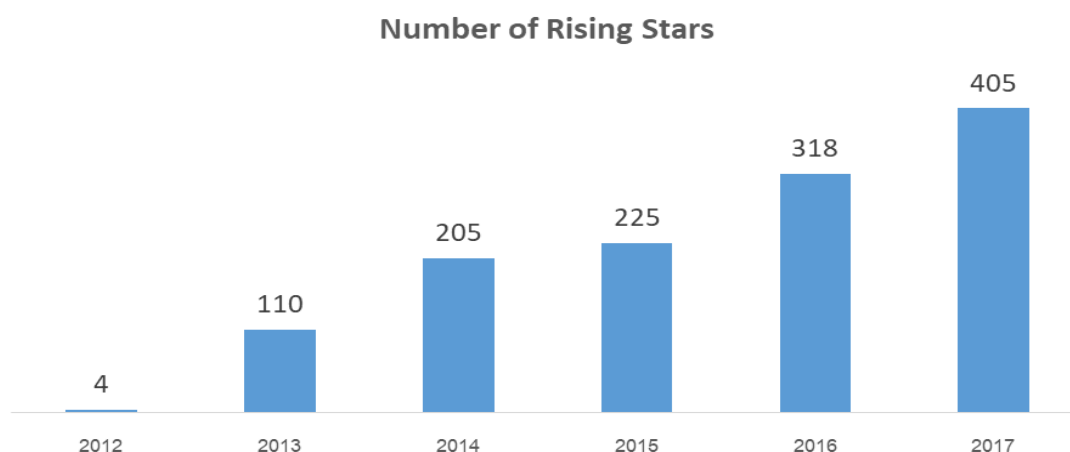
Mario not only worked in India but previously he worked on the post-disaster relief effort after the earthquake on January 2010 in Haiti and trade promotion from small medium enterprises working in China.

These experiences led him to, in his words, “identify the sustainable business model to solve the pressing issue in the developing and underdeveloped countries of Asia.” However, it wasn’t until 2009 when he met Mari Sawai, with whom he later married, the idea of Wedu emerged.

These two new graduates of 2009 class, founded Wedu (an acronym for women's education) in 2012 as their response to the lack of female leaders in Asia and competed for the student project in their university.

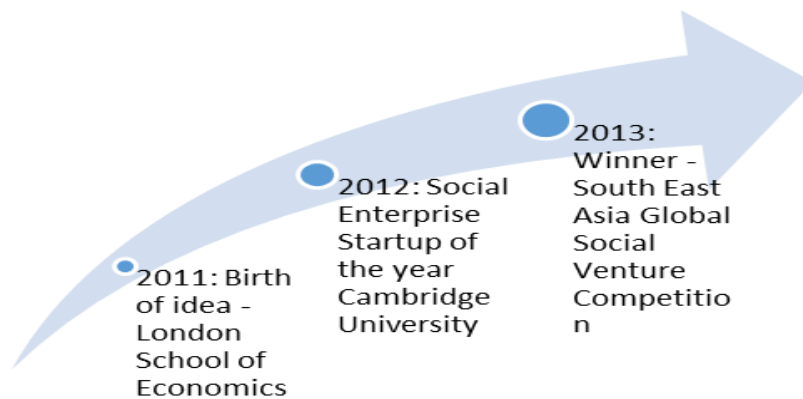
## **The early years of Wedu**

Mario and Mari began by identifying potential community leaders in Cambodia. They identified their first cohort of talented young women for the leadership program in 2012. The organization has since grown from 5 Rising Stars in its first cohort to 405 as of September 2017.



**Figure 3:** Number of Rising Stars

One of the first decision the couple had to make was the location of the organization. They had developed the idea of the organization to serve the Asian young women. However, they were conceived legally as a social enterprise in the United Kingdom. This kept them far from people they attempted to serve.



**Figure 4:** Early Years of Wedu

In 2012, Mario and Mari went to Thailand to see if the country could provide an ideal working environment for the organization. After spending their first few months in Bangkok and after intensive research, they decided to start the organization in Thailand. Mario termed Thailand's location as "strategic location" – primarily for two reasons: first, there were countries like Cambodia and Myanmar which had a huge chunk of population they wanted to serve. Second, the cost of operation for the organization was much more cheaper compared to the United Kingdom.

## Organizational Form

Incorporating an organization wasn't an easy thing for both of them. They looked into different regulations concerning different types of organizational form and decided to incorporate as Thai Foundation.

First, this form of organization allowed them to start an institution legally in a relatively lower cost. All they needed was a guarantee of THB 300,000 and three Thai nationals in the board of directors. For young college graduates with limited financial resources, this was the easiest form of organization they could start.

Second, this form of organization could easily bring-in foreign experts and employees unlike their for-profit counterparts which have much stiffer government regulations.

Third and most importantly, this form of organization best suited their mission of "unlocking the potential of young women in Asia".



## **People Philosophy**

From the time Wedu was founded in 2012, the founders had always tried to ensure that the organization was the best employer or employer of choice for the potential employees. We strived to build an organization focused on continuous improvement and excellence in their mission, their everyday work and their people. This meant that Wedu lived and breathed their organizational values with a results-driven mentality that fostered an environment for individual personal and professional development.

As a line in the organization's employee handbook read – “Be the change you want to see”. Wedu was an entrepreneurial organization that was open to new ideas. If employees had innovations to propose, they made their case, said it out loud and conquered the team - they had all the support required to implement their ideas. Reflecting on the culture of the organizations, “Leadership starts inside” – said Vivian Lee, the Chief Operations Officer of the organization.

With every passing year, Wedu had developed deeper understanding of the importance of employee relations. The COO of the organization explained, “There are ways in which we add value to the employee: emotional value-add through the work environment and financial value-add through compensation and benefits.”

## **The challenge of developing the “Wedudes”**

As an organization, it was very important for Wedu to ensure its employees felt the organization was committed for them. The leadership had clearly understood that employees would be committed to towards the organization if they sense the same commitment from their employer. The COO described their efforts:

First, since we are a small team, we maintain an open communication policy. Everyone in the organization can easily access the top management of the organization to express their concerns. Second, we provide safety net for our employees by providing access to health insurance, social security coverage and additional special package of healthcare for women. Third, we provide flexible workhours, and flexible leave policy as we understand majority of employees work away from their families.

Yet, employee discontent was on the rise. With the organization's employee's and expansion skyrocketing, the disparity of expectations across the employee hierarchy had become complex. With the growing number of staffs, the authority and tasks concentrated among a few people were being re-distributed.

In addition, the first generation of staffs were disappointed more because of the addition of new people in the team and at times these new people were asked to lead the employees who were there struggling in the early days to start the organization.

There were two other troubling factors with the organization's rapid growth: 1) Wedu had assigned responsibilities without showing clear career path for the existing staffs, 2) Employees thought the organization was becoming more impersonal and that some of the perks of the initial years were being repealed.

### **Creating Fun and Community Empathy at the Workplace**

Wedu had a very multicultural team with a very limited number of national staffs. One third of its staff was foreigners. The leaders of the organization attempted to address employee discontent by trying to make the workplace more fun and meaningful. The average employee age at Wedu was 26 years, and most of these professional had 3-5 years of work experience. Aware that they were still in a stage of transition from one culture to embracing a new culture, the organizational leaders focused on facilitating a good cultural and fun in the workplace like potlucks, international dress day and also provided local Thai language classes for the staffs. In addition, there were team night outs and dinners.

Wedu was aware of the challenges of cross cultural communications. Hence, all the team members had worked together to come up with community rules in the organization and to understand when some feels their personal space is encroached to name a few examples.

### **Managing Scale and the increasing costs**

Wedu was losing its people most when it was expanding its operation. It was painful blow to the organization as the organization was already having costs of expansions and on top of that the costs of increasing the recruitment efforts were added.

It wasn't only about the cost of expansion. Given the nature of the Wedu, it had to depend on funding from private donors. When it was expanding most, the philanthropic donations were decreasing for the organization because of the increased players seeking philanthropic donations. Wedu found itself caught in a very complex mix of internal and external challenges.

### **Immigration issues**

More than two-third of Wedu's employees were foreigners who required a proper work permit authorization to stay and work legally in Thailand. However, in the early days, the organization wasn't able to provide a proper Non immigration Business Visa to all its foreign employees. Employees had to visit immigration offices every three months and each year they were required to leave the country. Despite its repeated and continuous efforts, Wedu and other foundations employing foreigners were not able to solve this problem.

## **Preparing Wedu for Future Growth: Changes after 2016**

In 2016, Wedu was growing at a rapid rate, having doubled its service group compared to 2015, its management decided to institutionalize and improve productivity, cost-effectiveness, and efficiency by implementing a series of changes. The changes also deemed necessary because the organization was facing severe voluntary turnover management challenge. The changes were involved in introducing and reorienting the people on the way they were measured, promoted and rewarded.

### **Increased Role of managers in HRM Planning**

Wedu took a major step in redesigning how the human resources plans and recruitment needs are determined. Earlier, the CEO and COO jointly decided targeted number of recruits for the fiscal year based on their projection of work and budget. The department managers had no role in determining the personnel need.

However, in 2016, the top management of the organization had asked all the department managers to plan for the need of their department. The department planned for their need. Wedu moved from the centralized human resource planning to more decentralized one. In addition, they also adopted need based HRM planning rather than budget based outlook.

### **Formation of a dedicated Human Resource Team**

Wedu also added created a new human resource team which was absent earlier. The team became more strategic in recruitment and other human resource related affairs. One of the early improvement the team made was its orientation in recruitment.

The new HR team adopted the ‘local first’ strategy. According to one of the new HR team member, “it is a way to recruit highly skilled local talents”. The team hoped that this changed the legal and immigration complications that organization faced.

In addition, the new HR team started targeted efforts to look for candidates. Unlike earlier efforts which were dependent solely on the internet, the new team went out to universities and local job fairs in pursuit of recruiting local talents. The results of these efforts were vivid. Wedu was able to triple the size of its local employees within a year.

Furthermore, the new Human resource team also improved onboarding and training activities after the selection. The team created onboarding guides and initial training programs to help new recruits to better understand the organizational culture and their role.

## Emphasis in” On the job Selection”

Wedu added one very important step for the senior level recruitment. As shown in Table 1, the old selection process involved interviews and written test. The newly introduced selection process had added additional steps in the selection process. Apart from the interviews and written tests, the candidates for the managerial position had to come to Wedu and work in the position for a week before a final decision was made on the candidate. During this period of time the recruitment team also took feedback from other team members on the cultural fit and suitability of the candidate for the position.

| Stages  | Old Process                   | New Process                                   |
|---------|-------------------------------|---|
| Stage 1 | Application Review by the COO | Application Review by the COO and the HR Team |
| Stage 2 | Screening Interview with COO  | Screening Interview with Department Manager   |
| Stage 3 | Written Exercise              | Written Exercise                              |
| Stage 4 | Final Interview with CEO      | Screening Interview with COO                  |
| Stage 5 | -                             | Interview with CEO                            |
| Stage 6 | -                             | On the Job evaluation for a week              |

## Clearer Performance Management Framework

Wedu revamped its performance management strategy and frequency. Performance management at Wedu was designed to ensure organizational and individual goals are aligned. The system measured progress towards organizational, departmental and individual goals via projects that were critical to growth, respectively and holistically. Wedu hoped that this structure would build and refine project management skills in a way that motivates an output-driven mindset (i.e. focus on achievements) as we all work towards our common, collective goals.



**Figure 5:** Performance management framework

The Performance Management framework comprised of the following components: Wedu's Strategic Objectives – Based on Wedu's annual goals and strategic objectives, employees were asked to set their individual goals both professional and personal. The personal goals also asked for the vision for their life and long term personal goals and asked employees to ask for support they needed explicitly.

In addition, employees were encouraged and supported to brush-up their project management skills. They were asked to come up with the milestones for their projects as well as the key performance indicators. Department managers led the KPI formation task and were free to identify the KPIs that reflected their part of work.

## Performance Reviews

Unlike its ad hoc approach, Wedu implemented periodic check-ins and assessments as it geared up to achieve larger vision. The system was established to review the KPI report every month by the management committee of the organization. In addition, Wedu also formally established a management committee within the organization comprising all department managers, CEO and the COO. The monthly management committee meeting also served as a platform to review the monthly KPI report, review the progress of the projects and a place to discuss the further steps and areas of cross departmental collaboration.

In addition to that, the top management of the organization (CEO and COO) provided mid-year and year-end evaluation to all the employees. They provided both quantitative and qualitative feedback on professional goals, ongoing projects, contribution of the team member on other organizational contributions and on the department and organizational objectives.

### 360° Peer Review

In addition to the feedback on goals and projects, Wedu also introduced the system of 360° review for all its team members. Under this new system, apart from the review and feedback from the managers and the management of the organization, employees were also reviewed by their peers on select organizational values and skills.

### *Opportunities for growth*

Based on the 360 reviews, quantitative and qualitative assessments. The department managers and the COO of the organization then explored the opportunities for further growth of the employees in one-on-one conversations. These future looking conversations asked the employees to look at the competency framework of the organization and helped them identify the areas of improvement to reach the next stage on their career paths.

### *Increased conversation*

Realizing the fact that organization was getting more and more impersonal as it grew, the organization established a culture of periodic meetings. Each year, annual goal setting exercise was done with the team members. Monthly and quarterly project review meetings were started. Weekly Monday morning meetings (MMMs) were taken as the opportunity to updated on the weekly progress and plans. Each week COO and CEO had development meetings to all department managers to better build departments and workflow. In addition to that an optional 20 minute check-ins with the CEO was established. Any employee willing to have conversation with CEO could do so directly by selecting a timeframe on CEO's calendar.

### *Review Cycle*

Departing from its tradition of annual reviews, Wedu added additional review instance during the year. During, June/July: a deep review of projects and decisions on promotions and financial adjustment were done, if applicable. Results were communicated during the summer and implemented in September in order to allow time for internal management decision and board-level approval of the budget for salaries and benefits. September was used for goal setting review and first month of implementation of financial adjustments. January was the month for deep review of projects & KPIs and light review of projects & KPIs were carried out in April and October.

### *Competency Framework*

A brand new competency framework that outlined the description of competencies at each level of organization was introduced. Talking about the framework, Vivian, COO of Wedu said "This framework will be used to assess performance and progress at one's current level, as well as look ahead to competencies that require one to perform at the next level." See exhibit 1 in appendix for the detailed explanation.

## **Compensation, recognition and benefits for Human Resources**

Sweeping changes were also made around the compensation, recognition and employee benefits.

## Salary Bands

The organization not only introduced the competency framework, but also introduced the pay structure based on the competencies. Wedu used the following salary bands, which were based on Thai standards and for those based in Bangkok. This band was reviewed and adjusted annually to account for inflation, new benchmarks and general board-approved changes in their compensation structure.

| Position/Level          | Minimum Years of Relevant Work Experience | Gross Salary Range  |
|-------------------------|---|---------------------|
| Officer, Associate      | 1+  | XX,XXX - XX,XXX THB |
| Coordinator, Supervisor | 3+  | XX,XXX - XX,XXX THB |
| Manager, Specialist     | 7+  | XX,XXX - XX,XXX THB |
| Director, Executive     | 10+                                       | XX,XXX - XX,XXX THB |

In addition, the management communicated its stance that degrees and years of higher education were not a relevant measure of capability in the startup social enterprise space. They felt working in this sector required a very different type of skill set and character, especially in their current phase of growth. Thus, they placed emphasis on relevant work experience and an assessment of skills (via the interview process) towards one's ability to thrive and grow at Wedu.

Salary ranges were originally based on an ad hoc collection of data points from various sectors and industries, and was also recently been compared with Manpower Group's 2015 Salary Guide (see exhibit 2 in appendix). In order to remain competitive and attract top talent, Wedu aimed to fall in the top quartile of salaries benchmarked, according to the HR field, which was currently the most representative of what they did. They aimed to review benchmarks at least every two years.

In addition, Wedu aimed to model local for-profit sector models for compensation rather than international NGOs, which tend to be government-backed and tenure-based, as well as represent a logarithmic curve for income growth (i.e. a lower ceiling and decreasing marginal increases as you move up levels). Instead, Wedu followed market-based compensation models which exhibit a more exponential curve for income growth, based on merit and typical supply-demand job market forces.

## Promotions, Raises & Adjustments

### *Raises*

Movement within a salary band required years of experience in the role with consistent, reliable performance results. Generally, the movement was between the 3%-10% range



### *Promotions*

Moving up a salary band required some demonstration of skills and output based on what's expected in the next position/level. This was only considered for employees who had been employed for at least 1 year, unless agreed upon otherwise.

### *Bonus*

The company also introduced the concept of annual bonus instead of annual pay raise. The bonus was to be distributed to all employees based on the organization achievements during the year. In addition, the bonus was differentiated based on the individual performance and contribution.

### *Employee Benefits*

In addition to the flexi work hours and leave policy, Wedu offered health insurance and social security to all its staffs. Wedu also made massive changes on the immigration issues for its foreign staffs. Every foreign staff was offered a non-immigration business visa and work permit to stay and work legally in the country.

In addition to the health insurance, the organization also offered special women healthcare package for all its female workforce. Furthermore, every employee was entitled to a \$300 educational voucher to invest in any training or learning opportunity once they completed 18 months with the organization.

## **Rapid Retrenchment on Employee Satisfaction**

Realizing that something had gone wrong with their organization, Wedu's management scrambled to solve the mystery of the fall. The fall continued in 2016 despite major reforms. Though there was a slight improvement, yet, the turnover rate was above 50%. The organization had a hard time communicating all the changes it made. Employees were doubtful about the impact of the changes - for example, how the variable bonus mechanism or the promotion policy worked in practice. They were also unclear about the rationale behind all these changes. Mario and his team knew something needed to be done to recapture the hearts of Wedudes, but they were not sure where to begin.





## Appendix

### Exhibit 1 : Competency Framework of Wedu

| General Description of Attribute   | Competencies                           | Officer, Associate   | Coordinator, Supervisor  | Manager, Specialist   | Director, Executive   |
|--|--|--|--|---|---|
| <b>Output-driven</b> - reliable and accountable, bolstered by the propensity to use data-driven critical thinking in measuring everything we do, listening to the market and learning from both successes and failures | Reliability, Accountability, Integrity | <ul style="list-style-type: none"> <li>- delivers on expected responsibilities when provided proper guidance and structure</li> <li>- is trusted and honest</li> </ul>                                 | <ul style="list-style-type: none"> <li>- delivers on expected responsibilities with minimal supervision</li> <li>- able to address challenges and roadblocks in order to reach the objective</li> </ul>                        | <ul style="list-style-type: none"> <li>- able to manage multiple, existing streams of work for self and team</li> <li>- proactively anticipates and identifies challenges so that output is delivered on time, on budget, and of quality</li> <li>- doesn't misrepresent oneself for personal gain</li> </ul> | <ul style="list-style-type: none"> <li>- adept at designing and managing new streams of work or areas of need to help self and team work towards common objective</li> <li>- good at prioritizing in the face of competing resources</li> <li>- can present the unvarnished truth in an appropriate and helpful manner</li> </ul>       |
|  | Data-driven, Critical Thinking         | <ul style="list-style-type: none"> <li>- can work with basic sets of data/information to arrive at pre-defined metrics</li> <li>- able to draw basic observations from the data/information</li> </ul> | <ul style="list-style-type: none"> <li>- can build basic sets of data/information and analysis more independently</li> <li>- can begin to identify data/information needed in order to make meaningful observations</li> </ul> | <ul style="list-style-type: none"> <li>- can structure logical and replicable frameworks or datasets from scratch to conduct analysis and answer clear questions</li> <li>- can draw meaningful conclusions from the data/information to inform next steps</li> </ul>   | <ul style="list-style-type: none"> <li>- can design, build and manage complex sets of data/information, as well as identify linkages between seemingly disparate sets</li> <li>- takes initiative to use a customer-driven mindset to design, collect and analyze meaningful information to drive and manage growth + change</li> </ul> |

| General Description of Attribute  | Competencies            | Officer, Associate  | Coordinator, Supervisor  | Manager, Specialist   | Director, Executive  |
|---|-------------------------|---|--|---|--|
| <b>Entrepreneurial</b> - audacious and resourceful in identifying and acting upon opportunities to innovate; flexible and comfortable with ambiguity and change | Innovation, Creativity  | - contributes to brainstorming and the improvement (development) of existing ideas, systems, etc. | - contributes to brainstorming by adding new, original ideas<br>- can anticipate and think through downstream, future implications of new ideas                              | - takes initiative to lead creative and creation processes at Wedu<br>- has good judgment about which creative ideas and suggestions will work<br>- can design and lead basic experiments | - adept at identifying new initiatives/projects and can drive them forward + bring to market<br>- easily (helps others) makes connections between previously unrelated concepts, systems, etc. |
|   | Adaptability, Agility   | - gets things done with what we have<br>- open to receiving change with a positive, open attitude | - gets things done through both formal/existing and informal/non-existing processes or systems   | - is comfortable with risk and uncertainty, and can help others maneuver in this environment  | - can decide and act on behalf of the team without yet having the total picture<br>- thrives at creating processes and systems where they don't yet exist                                      |
| <b>Collaborative</b> - ability and accountability to use systems-level thinking to see beyond one's own work and balance individual and team goals              | Collaboration, Teamwork | - is seen as a team player and is cooperative<br>- easily gains trust and support of peers        | - can represent own interests and yet be fair to others while finding common ground<br>- effectively manages expectations in all directions, especially cross-departmentally | - understands and helps others to understand the interactions between Wedu's various systems<br>- can form and manage cross-departmental streams of work to achieve mutual objectives     | - anticipates and takes initiative to address opportunities and need for collaboration<br>- able to build new systems that others feel a part of and can contribute to                         |
| <b>Passionate</b> - willing to go above and beyond  | Passion, Purpose-       | - is optimistic and considers possibilities   | - is a go-getter and seizes opportunities that come  | - takes initiative to go above and beyond the   | - can inspire and motivate entire  |

| General Description of Attribute  | Competencies                     | Officer, Associate   | Coordinator, Supervisor   | Manager, Specialist   | Director, Executive   |
|---|----------------------------------|--|---|---|---|
| in pursuit of our common mission, with the understanding that joining Wedu is more than just a job  | Driven                           | - demonstrates genuine care for and interest in Wedu's Rising Stars  | one's way<br>- brings positive and constructive energy to new and challenging situations  | defined scope of one's role<br>- dedicated to meeting the expectations of Wedu's stakeholders, always thinking and acting with a customer first mindset   | departments and even cross-functional teams<br>- communicates a compelling and inspired vision or sense of core purpose that others can and want to follow  |
| <b>Drive to learn</b> - commitment to challenge oneself and be challenged, take up more responsibility and take ownership of one's own self-development as the organization grows | Self-Development, Self-Knowledge | - open to receiving feedback and trying things differently<br>- asks questions rather than take things at face value | - is personally committed to and actively works to continuously improve<br>- is aware of career or development goals and actively works on them                   | - analyzes both successes and failures for clues to improvement<br>- embraces unfamiliar tasks<br>- seeks feedback and admits mistakes  | - understands and balances strengths and weaknesses by effectively leveraging team and other resources to help the org grow   |
|   |                                  |  |   |   |   |
| General behavioral competencies (from existing Employee Manual)   |                                  | - Team player<br>- Diligent and respectful of deadlines<br>- Multi-tasking   | - Completion of tasks with minimal supervision<br>- Awareness and initiative to expand beyond delegated set of tasks<br>- Self-initiated professional development | - Initiative towards continuous improvement<br>- Basic team management (development, delegation, and management)<br>- Strong interpersonal skills (e.g. relationship management, conflict resolution) | - Advanced team management, with the ability to inspire new team members<br>- Advanced conflict resolution<br>- Advanced negotiation skills with external stakeholders<br>- Advanced communication skills |

| General Description of Attribute                               | Competencies | Officer, Associate  | Coordinator, Supervisor  | Manager, Specialist  | Director, Executive  |
|--|--------------|---|--|--|--|
| General technical competencies (from existing Employee Manual) |              | <ul style="list-style-type: none"> <li>- Basic data analysis</li> <li>- Problem solving support</li> <li>- Strong performance of role-specific policies &amp; procedures</li> </ul> | <ul style="list-style-type: none"> <li>- Basic process &amp; project design and implementation</li> <li>- Intermediate data analysis</li> <li>- Problem structuring and solving</li> </ul> | <ul style="list-style-type: none"> <li>- Intermediate process &amp; project design and implementation</li> <li>- Advanced data analysis</li> <li>- Problem identification and ability to develop creative solutions</li> <li>- Strategic thinking and support</li> </ul> | <ul style="list-style-type: none"> <li>- Advanced organizational design and management</li> <li>- Strategy development and implementation</li> <li>- Advanced process design and implementation</li> <li>- Advanced data analysis</li> </ul> |

**Exhibit 1: Thailand Salary Guide**

| Position   Job Scope   | Exp     | Min    | Max     | Percentile       |                  |                  |         |
|--|---------|--------|---------|------------------|------------------|------------------|---------|
|  |         |        |         | 25 <sup>th</sup> | 50 <sup>th</sup> | 75 <sup>th</sup> | Avg     |
| <b>HR Officer / HR Executive</b><br>Operate and support HR functions by recruiting, administering tests, scheduling appointments, conducting orientation, training, maintaining employee records and information.  | All     | 12,000 | 61,875  | 18,000           | 21,400           | 27,000           | 23,792  |
|  | 1 - 5   |        |         | 17,000           | 20,000           | 25,000           | 21,588  |
|  | 6 - 10  |        |         | 20,000           | 25,000           | 32,000           | 26,783  |
|  | > 10    |        |         | 24,250           | 30,000           | 39,250           | 32,287  |
| <b>Senior HR / HR Supervisor</b><br>Provide hands-on support for the HR Department which involves employee selection, employee relations and communication, benefits and welfare, payroll, training and development and supervision of HR staff members.   | All     | 20,000 | 89,000  | 27,000           | 33,500           | 41,600           | 36,239  |
|  | 1 - 5   |        |         | 24,250           | 28,000           | 31,922           | 29,528  |
|  | 6 - 10  |        |         | 27,000           | 32,747           | 40,000           | 34,735  |
|  | > 10    |        |         | 33,000           | 40,000           | 46,500           | 41,681  |
| <b>HR Manager / Senior HR Manager</b><br>Lead the organization's Human Resource department by planning and implementing Human Resource policies, programs and practices and providing counseling to employees. Responsible for the recruitment of employees which includes selection, training and development, benefits structure, employee relations, appraisals and legal compliance. Manage the HR department. | All     | 38,000 | 170,000 | 58,000           | 73,281           | 94,750           | 79,014  |
|  | 6 - 10  |        |         | 47,250           | 58,500           | 70,000           | 67,205  |
|  | 11 - 15 |        |         | 51,500           | 67,930           | 83,850           | 72,242  |
|  | > 15    |        |         | 74,495           | 90,000           | 112,022          | 93,698  |
| <b>Head of HR/ HR Director</b><br>Promote, enhance, and implement Human Resource values for the organization. Guide and manage staff members by providing Human Resource advice, counseling and decision-making. Develop and implement HR strategies and operations in line with organizational objectives. Manage Human Resource programs and special projects.   | All     | 80,000 | 325,000 | 120,000          | 143,898          | 192,500          | 167,455 |
|  | 10 - 15 |        |         | 115,000          | 121,000          | 145,000          | 137,846 |
|  | > 15    |        |         | 125,000          | 160,000          | 222,000          | 179,956 |

**Questions to discuss after reading the case:**

1. What are some of the problems associated with the human resource retention?
2. Why do you think Wedu has a high turnover rate?
3. What efforts has the organization taken to address the problems associated with human resource retention?
4. Are the efforts taken by the organization sufficient to address the problem? Why? Why not?
5. What would be your advice to the CEO to achieve the organization goal while reducing the turnover problem?

## **Another Jigsaw Piece for Making Possible the Sustainably Environmental Society: A Case Study of ASEAN Legal Framework for Equal Access to and Fair Benefit Sharing of Plant Genetic Resources in Southeast Asia**

Worapoj Suebprasertkul<sup>1</sup>

### **Abstract**

As a consequence of the convention-protocol approach under the present international environmental regulatory regimes, a permutation of the overlapping subject matters in the multilateral environmental treaties (“METs”) and their protocols brings about legal inconsistency. Supposed to be solved by Vienna Convention on the Law of Treaties (“VCLT”), this issue of inconsistency instead causes several problematic legal issues. Principally, conflict of obligations, imposed on states being parties to the overlapping METs where no conflict clauses exist, is left without the applicable provision. Norms and doctrines enshrined in those METs are thus sought for in order to determine which obligation – as called an integral obligation – overrules which. Unfortunately, there is no existence of hierarchy of such norms, giving rise to necessity in paving the way for solving the problems, that is, approaches of treaty interpretation – as interpreted both within and without VCLT despite is ambiguity – and reliance on other principles with soft-law connotations and general international law. As such, the problematic issues – potentially a ground for a breach and repudiation of the treaty – are not dispelled as long as there is no applicability of concrete laws relevant.

Precisely, due to the aforementioned problems, ineffective enforcement under the international environmental regulatory regimes precipitates states’ incompletion of and inability to implement the METs, inevitably leaving an adverse impact on our environment. Bearing in mind that biodiversity is crucial for environmental sustainability, this study – based on the Pluralist Constitutionalism theory as its inspiring philosophy and Immanuel Kant’s Deontological Liberalism as its approach – is intended to be a case study to solve the abovementioned problems – influenced by Monist Constitutionalism, and to make a contribution to development of international environmental law. It proposes an international legal framework for equal access to and fair benefit sharing of plant genetic resources (“PGRs”) in particular under ASEAN in a treaty form.

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In conjunction with Game Theory, Kant's conception is not only in agreement with certain principles – legal and environmental – but also directs us to the economic formulae applied for design of the legal framework by a self-enforcing treaty approach with trade restrictions together with compliance mechanisms. Within the bound of ASEAN region, the legal framework particularly aims to deter free riding – a main factor for lack of states' participation in METs, pinpointing ineffectiveness of the environmental legal field. Accordingly, the proposed mechanisms make workable this legal framework by means of, firstly, regional exchange of PGRs – regardless of whether or not they are instrumentally valued; secondly, the gene bank with its quota and trading regulations based on the equilibrium where the marginal compliance costs equate with the gains of PGRs and biodiversity, and lastly, the administrative bodies.

Through its legal framework, this study, humbly yet ultimately, aims to make a contribution to our regional cooperation according to sustainable development and international environmental law to, hopefully, the extent that the ASEAN states and we all can act with appreciation of intrinsic value of PGRs and the environment at large.

**Keywords:** International Environmental Law, Overlapping Subject Matters under Environmental Treaties, Conflict of Obligations under Multilateral Environmental Treaties, Legal Framework for Plant Genetic Resource Diversity, Biodiversity, ASEAN

## Motivation and Background

This is a case study on international environmental law. Legally in content and approach, this study, with the meager effort as it would allow, is to study in order to posit the author's arguments and conclusion not only for sake of international law but also that of the environmental sphere where the whole humanity subsists in. Realising the crucial role plants play in sustaining the environment, this study is intended to legally ensure sustainable genetic biodiversity in the Southeast Asian region through conservation of plant genetic resources ("PGRs"). Indeed, plants themselves are useful in several ways; for instance, they can be a source of substances used for production of drugs or other chemicals, food and agriculture. Their variety and quantity moreover give rise to both plant consumption and industries for humankind. To support a variety of plants, it is required to ensure that there is sufficient distribution and existence of PGRs since genes are a micro pattern of organisms, essential for growing and reproduction of plants. Existence of several PGRs in several areas of the world accordingly helps protect plant biodiversity within the ecosystem as a whole, ultimately leading to environmental sustainability. In turn, biodiversity of PGRs not only ensures a variety of plants to be instrumentally used for humanity, but also illustrates our manifestation of appreciated respect for intrinsic value of the environment itself. Abundance of PGRs in many regions of the earth is therefore crucial for the global biodiversity; indeed, PGRs present in one particular country may be extinct or in danger in the other country. If the latter country is provided with access to and fair benefit sharing of certain PGRs, such PGRs would exist in such country, supporting the ecosystem of the region, thus resulting in biodiversity in the region being maintained. If this widespread existence of the PGRs can be legally ensured in a Southeast Asian region, we are at least assured that the region will play its part in a larger protection of the global biodiversity, like a jigsaw piece making possible the whole picture of the jigsaw – our global sustainable environment. Such jigsaw piece is represented here as a case study for an ASEAN legal framework for a regional treaty to be established as an alternative regulatory regime to the existing international ones to ensure that future generations are to survive by conserving the diversity of natural resource bases<sup>2</sup> through focusing on biodiversity in PGRs. The study does not cover the realm of intellectual property law. Rather, it is environmental orientation; its merit, if any, will be the legal contributions for the purpose of making possible a legal framework with workable mechanisms under the self-enforcing treaty-making approach.

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<sup>2</sup> According to the principle of Conservation of Options explicated by Edith Brown Weiss in "Intergenerational Equity: A Legal Framework for Global Environmental Change" in International Environmental Law in Richard L. Revesz, *Foundations of Environmental Law and Policy*, Foundation Press, New York, 1997, pp. 346 – 349.

## **Introduction**

### **1. Preservation of Genetic Biodiversity**

Biodiversity has 4 types – functional, ecological, genetic, and species. As to the environment academics, biodiversity is deemed as an element of environmental sustainability.<sup>3</sup> Lack of biodiversity inevitably points to 2 areas of concern; the first one is that we are threatened by food insecurity and, secondly, that our natural capital – vital for maintenance of our environmental domain – is also weakened. Lack of biodiversity can be most likely caused by lack of variety or extinction of the genetic and species biodiversity. Biodiversity is asymmetry in the global span, meaning that not every part of the earth is rich in biodiversity. It is known that only some certain parts, such as Amazon, Indonesia and Congo, demonstrate the rich of the main species;<sup>4</sup> indicating that biodiversity prevails in tropical forest areas. Loss of biodiversity is due to several factors. One of them is land use which people within states deploy the land to agriculture. Superficially, agriculture may seem to benefit biodiversity, but in reality, it does not always mean that biodiversity can be sustained through it. Crops and plants that are grown in the agricultural industry can be the same ones repetitive in being planted. Due to that the earth has lost 4 per cent of the forested areas for agriculture for over 200 hundred years<sup>5</sup>, land use for agriculture results in the low-quality soils, more unstable and less resilient in the area which eventually lacks diversity especially in the kind of plants grown.

To start considering preservation of genetic biodiversity, it is necessary to regard genes as the most nucleus step into the existence of all organisms. Species containing genes are fundamental in studying biology and biodiversity; moreover, the way we approach them points to how we comprehend biodiversity.<sup>6</sup> Importantly, each gene contains many variants of characters or traits of organisms;<sup>7</sup> and it is under the power of these genes that are responsible for giving birth to all organisms with a unique character inherent in their being, crucially providing particular functions to the ecosystem; we have scientifically known some of which, yet, have not some, and that unknown function must not be taken as a ground for overlooking any certain organisms or PGRs.

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<sup>3</sup> Environmental sustainability consists of 4 scientific principles, namely, reliance on solar energy, population control, nutrient cycling and biodiversity. See G. Tyler Miller, Jr. and Scott Spoolman, *Environmental Science, Problems, Concepts, and Solutions*, Thomson, Canada, 2008, pp. 19 – 58.

<sup>4</sup> Tim Swanson and Ben Groom, *Regulating global biodiversity: what is the problem?*, p. 114.

<sup>5</sup> Ibid, p. 115.

<sup>6</sup> John Spicer, *Biodiversity*, Oneworld Publications, England, 2012, p. 13.

<sup>7</sup> Jonathan Slack, “Genes, A Very Short Introduction,” Oxford University Press, UK, 2014.

## 2. Why Equal Access to and Fair Benefit Sharing of Plant Genetic Resources for the Purpose of Biodiversity under ASEAN?

Despite richness of the region, the benefits that arise from PGRs have neither been equitably shared nor accessed to between resource providers and users. Ensuring that Southeast Asian countries, farmers and agricultural traders of which in particular, have equal access to and fair benefit sharing (“ABS”) of PGRs in Southeast Asia helps the region preserve biodiversity in terms of a variety of genes, making the genetic element of biodiversity abided by in the region. No or unequal access to or unfair benefit sharing of PGRs can be regarded as the threat to biodiversity. Such limited access and unfair sharing in turn precipitate extinction of plants, especially medicinal plants that depend on wild collection.<sup>8</sup> And extinction of such plants means extinction of the genes those plants contain either. This is why there must have been the international legal instruments establishing the regulatory regimes to regulate the issue of ABS of PGRs; whilst, the effectiveness of which is another point.

The assessment of Southeast Asia indicates the downward trends in abundance and distribution of selected species and coverage of protected areas;<sup>9</sup> over the period of years 2000 – 2005, for instance, fragmentation and loss of forests have continued in several South and Southeast Asian countries.<sup>10</sup> Such loss of forests definitely reduces PGRs subsisting on their forest habitats. These epidemic outbreaks thus affect the number of PGRs that can be accessed to and shared among people in Southeast Asian countries as well. It can be claimed that biodiversity has also been being destroyed this way.<sup>11</sup> The loss of genes contained in many plant species is moreover confirmed by the fact that over the years 2002 – 2009, nearly 2,500 species in Asia and the Pacific have been enlisted onto the ‘critically endangered,’ ‘endangered’ or ‘vulnerable’ list of the International Union for Conservation of Nature and Natural Resources (IUCN).<sup>12</sup> As can be seen in the past, despite “87% of the parties to the Convention on Biological Diversity (“CBD”),<sup>13</sup> whose rather soft mechanisms<sup>14</sup> help develop “national biodiversity strategies and action plans,”<sup>15</sup> the world, let alone ASEAN, still perceives the challenges in the field<sup>16</sup> as demonstrated by United Nations Environmental Programme (“UNEP”).<sup>17</sup> According to UNEP, fewer than a quarter of environmental multiple compliance procedures make any provision for the imposition of sanctions<sup>18</sup> since most tend

<sup>8</sup> Interchange News & Reports, *Executive Summary of “Global Biodiversity Outlook-3,”* July 2010.

<sup>9</sup> Convention on Biological Diversity’s Framework for Assessment by 2010

<sup>10</sup> Interchange News & Reports, 2010.

<sup>11</sup> Andrew Balmford, *The Convention on Biological Diversity’s 2010 Target*, Himalayan Journal of Sciences, Vol 3, Issue 5, Jan-June 2005, p. 44.

<sup>12</sup> Interchange News & Reports, 2010.

<sup>13</sup> Ibid.

<sup>14</sup> CBD’s mechanisms are arbitration and conciliation as provided in its Annex II.

<sup>15</sup> Interchange News & Reports, 2010.

<sup>16</sup> Such challenges are shown by some scholars in assessing CBD’s 2010 target under the assessment of CBD to which is established by the parties.

<sup>17</sup> Andrew Balmford, 2005, p. 43.

<sup>18</sup> UNEP, *Compliance Mechanisms*, 117-118.

to depend on incentives for compliance<sup>19</sup> which are not necessarily ineffective. However, such challenges may indicate more or less ineffectiveness at a global level in order to tackle threats to biodiversity. Although the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to CBD (“Nagoya Protocol”) is adopted to help facilitate the required capacities as identified in the regional project baseline study and in Article 22 on Capacity, the Nagoya Protocol can solve the problem in a general sense<sup>20</sup> but the question is whether it is really effective in Southeast Asian countries. The further expectation put on the Nagoya Protocol under the Convention-Protocol approach with the recently adopted Nagoya-Kuala Lumpur Supplementary Protocol indicates a need to enhance or to solve the existing problem.

Southeast Asian countries lack the existing international legal instruments on ABS of PGRs despite the ASEAN drafted one of which, not yet into force. It can be accordingly arguable that protection of PGRs is still not effectively ensured in the region. Moreover, continuing exploitation of forests and other habitats has had severe impacts on biodiversity in Southeast Asia<sup>21</sup> and, inevitably, PGRs in the forests. One of the main solutions is protection of diversity through network of transboundary protected areas linked across Southeast Asia, which thus gives birth to ASEAN Regional Centre for Biodiversity Convention (“ARCBC”).<sup>22</sup> Nevertheless, ARCBC is not a body under any legal instrument; it cannot, with legal force, facilitate the legal measures ensuring ABS of PGRs in ASEAN in particular. What is more, despite having the provisions on forestry in general, the ASEAN countries still need domestic legislation specifically on ABS of PGRs.<sup>23</sup>

### **3. Objectives of the Case Study**

a. To suggest that the international regulatory regimes under the existing environmental treaties and their protocols may neither be sufficiently feasible nor effective due to their convention-protocol approach. Thus, this study’s legal framework constituted for ASEAN, is served as a case study for the purposes of avoiding and solving the legal problem of the existing global regulatory regimes, significantly relying on the approach considered more effective especially in terms of state cooperation in regional treaty-making on a small scale, that is, under ASEAN for the benefit of regional biodiversity of PGRs in Southeast Asia, certainly culminating in the global one;

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<sup>19</sup> Daniel Bodansky, Jutta Brunnee, and Ellen Hey, eds., “Compliance Procedures” in *The Oxford Handbook of International Environmental Law*, Oxford University Press, 2007, pp. 995 – 1009.

<sup>20</sup> The conclusion of the workshop of the Nagoya Protocol effective in 2015 is that it can boost up effective national ABS legislative, administrative or policy measures to be formulated and developed as soon as possible. Note the vague language used: “as soon as possible.”

<sup>21</sup> Southeast Asia Subregional Report for the World Summit on Sustainable Development, p.33.

<sup>22</sup> Ibid., p. 34.

<sup>23</sup> Mekong Region Law Center and United Nations Environmental Programme, *Southeast Asia Handbook of Selected National Environmental Laws*, Bangkok, Thailand, 1998.

b. To ensure behavioural change regarding ABS of PGRs which the ASEAN member states should finally and legally make by implementing an ASEAN treaty based on this study's legal framework. To that end, the legal framework shall provide the mechanisms proposed by this study through application of the environmental philosophies and principles including the economic concepts.

## Environmental Science on Biodiversity

### 1. Definition and Conception on Biodiversity

Scientifically defined as diversity of the species of the earth, the genes contained in the species, the ecosystems they live including the ecosystem process of energy flow and nutrient cycling sustaining all lives.<sup>24</sup> Biodiversity is thus a crucial part of the natural capital keeping our survival as it provides us with food, wood, energy, and medicine.<sup>25</sup> As to environment science, biodiversity is considered crucial for environmental sustainability, consisting of reliance on solar energy, population control, nutrient cycling and biodiversity.<sup>26</sup> There are in fact more than 80 definitions of biodiversity available; among which is the definition enshrined in CBD defining biodiversity as “the variability of organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.”<sup>27</sup> Opting for a short version, biodiversity is a variety of lives in all its forms and relationships.<sup>28</sup> As to the definition drawn here, we come to the connotation that biodiversity is something associated with abundance in organisms. And as the word “abundance” demonstrates, biodiversity is the state of diverse and abundant organisms.

### 2. Importance of Biodiversity to the Environment

What is related to discussion on extinction is a theory of evolution. We have to learn this in order to appreciate importance of diversity of existences of organisms. It is “the Mystery of Mysteries,” as Charles Darwin termed, reflecting speciation of new species; a wonder that living things happen to create a new branch of their bloodline – distinct enough to be called as another separate sort of organisms. Biologists opine that the environment causes the said speciation where organisms struggle to survive. The speciation process sees organisms adapting themselves to survive so hard that they create another bloodline distinguished from the usual one.<sup>29</sup> That organisms adapt themselves to survive is called

<sup>24</sup> G. Tyler Miller, Jr. and Scott Spoolman, *Environmental Science, Problems, Concepts, and Solutions*, Thomson, Canada, 2008, p. 48.

<sup>25</sup> Ibid., p. 50.

<sup>26</sup> Ibid., pp. 19 – 58.

<sup>27</sup> Article 2 of Convention on Biological Diversity: Use of Terms provides that “For the purposes of this Convention: “Biological diversity” means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.”

<sup>28</sup> Kevin J. Gaston, John I Spicer, *Biodiversity, An Introduction*, Blackwell’s Publishing, UK, 2004.

<sup>29</sup> There are two sorts of speciation: firstly, allopatric speciation where physical barrier would be separated in order to create new species; secondly, sympatric speciation where there exist several



mutation, which helps the organisms have an advantage in appropriating themselves with the adverse or changing environment. This is the raw material for evolution: nature's selection. It is not only beneficial for the organisms with respect to their survival but also the environment in the sense that such mutation that has happened would eventually give rise to novel features possibly developing to play its part in diversity in the ecosystem whether by means of providing us with more variety of living things or substantiating the endangered or vulnerable organisms in the ecosystem where lack of which could jeopardize the ecosystem in the end. However, organisms are not always capable of adapting themselves successfully under speciation of a new species; some of them demise in their struggle whereas some are forever gone from their ecosystem or the earth, hence, extinction.<sup>30</sup>

### **3. Measurement of Biodiversity**

Biodiversity has to be measured in order to evaluate how diverse it is in the area. A measurement of biodiversity is calculation conducted under immigration and emigration. Organisms move in and out of the certain areas. This inevitably affects the conditions facilitating biodiversity proliferation, or on the other hand, biodiversity loss. Plants are carried away by other organisms or by the power of nature such as wind and water; pollens of flowering plants that are moved into or out of the place by birds, insects or farmers are a good instance. Such moving could happen to be country boundary-crossed. Organisms, plants in particular, can come into the area – hence immigration – and eventually happen to live harmoniously with the organisms formerly living in that area, rendering the area more diverse in living things. Nevertheless, the situation may turn out in the opposite way – either in the sense of causing the conditions averse to the organisms having lived before them, culminating in precipitating biodiversity loss or in the sense that they mix with the organisms having lived before them in terms of reproduction, resulting in creating a new species – stronger against the destroyed environment but possibly weaker to stay long in such environment. As such, immigration undeniably has an impact in two ways to biodiversity and thus the environment.

Turning to emigration, the organisms that move or are carried away from the area certainly leads to lack of such organisms in the area in question. Such organisms may play or may have developed their crucial roles in the ecosystem – being in the role of assisting other organisms to reproduce their offspring for example; in consequence, the lack of them could bring about lack of others' reproduction in the ecosystem either. As a result, in the worst case possible, emigration may cause extinction of such moving-away organisms from the area or even that of those organisms dependent on the moving-away ones. Proliferation of organisms in any particular area is thus essential to biodiversity according to John Spicer, a biology academic, who posits the conclusions to proliferation of organisms that the great number of species subsists on:

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internal alterations, certainly bringing about novelty of characteristics. See Gaston, K. J. and Spicer, J. I. 2004. *Biodiversity. An Introduction* (2<sup>nd</sup> Edition), Blackwell, UK.

<sup>30</sup> Extinction can be caused by many causes: volcanic eruption, deadly cosmic rays and climate change.



- a. the balance between immigration and emigration, speciation and extinction; and,
- b. the great number of differences in habitat types and environments (especially for the larger areas)<sup>31</sup>

As to John Spicer, the larger the area the greater the number organism species. And it is more on the land rather than the sea or water areas where diversity of species is seen despite the ocean being an initial hub for bedding several primitive organisms at the beginning of the planet<sup>32</sup>. However, it is the land in the later periods that has seen its own good conditions for promoting biodiversity. This is due to its diversity of habitats providing for living things; in other words, compared to the marine environment, the land offers more elaborate habitats so different from its counterpart.<sup>33</sup> This study thus aims to scope its field of study within the *land* of Southeast Asia where most plant species and genes do dwell.

A biodiversity hotspot is introduced to measure the quantity and quality of biodiversity. It is 10 tropical forests are designates as hotspots. As to Conservation International, to qualify as a biodiversity hotspot, a region must meet two strict criteria:

- a. The region must have at least 1,500 vascular plants as endemics; this means the region is considered as a hotspot is irreplaceable; indeed, it must have a high percentage of plant life found nowhere else on the earth; and,
- b. The region must have 30% or less of its original natural vegetation. In other words, it must be threatened.<sup>34</sup>

There are 35 areas on the planet that qualify as hotspots. These hotspots represent just 2.3%<sup>35</sup> of the planet's land surface; but incredibly they support more than half of the world's planet species as endemics — i.e. species found nowhere else — and nearly 43% of bird, mammal, reptile and amphibian species as endemics. Notably, if the inception that the terminology of “hotspot” conveys to us is superficially considered, one may think of the connotation of the area where richness of biodiversity can be found. This would go against the true inception. The area considered as a hotspot is in fact where there is a large number of species that are endemics, that is, unavailable nowhere else. A hotspot is the area that demands conservation. To short, hotspots are not the indicator of richness in species or genetic biodiversity available in its area but rareness of such species or genes that can be deemed as endemics due to their unavailability elsewhere. The knowledge on biodiversity

<sup>31</sup> Gaston, K. J. and Spicer, J. I. *Biodiversity. An Introduction* (2<sup>nd</sup> Edition), Blackwell, UK, 2004, p. 42.

<sup>32</sup> The early innovation of creating organisms, which appear in the major phyla, took place for a great period of time in the marine environment, not the land.

<sup>33</sup> More interestingly, in the sea, there is tendency that plant-eating organisms eat any plants; whilst, on the land, one plant eater tend to consume or even one animal species only eat one plant species, some only the particulars parts of one plant species. In addition, the land life is larger than the sea life. Photosynthesis on which plants on the land subsist is more seen than that which carried on by microscopic lives, that is, small creatures, in the sea.

<sup>34</sup> Conservation International website. Please see John Spicer, *Biodiversity*, Oneworld Publications, England, 2012, p. 44.

<sup>35</sup> However, John Spicer suggests a different figure by estimation at 1.4-2.3% with a metaphoric picture of the area bearing these hotspots is about the size of India, downsized from the area that used to be in the past: about the size of Russia and Australia combined.

hotspots bring about the realization of how endangered the certain organisms become and this gives rise to urgency of application of all means possible. By which, we are progressing towards making future generations survive through our conserving the diversity of natural resource bases.<sup>36</sup>

## **The Concepts and Philosophies Used for this Study's Legal Framework<sup>37</sup>**

The nature of the environment is trans-boundary and holistic, especially for the case of biodiversity; thus, it can be argued that ensuring biodiversity in one region of the world *is* to protect the overall biodiversity of the global environment. Thus said, to design an ASEAN legal framework – covering a small region of 10 countries but still considered as the international community, though at the regional level – the study deems it appropriate to comprehend the characteristics – beneficial and problematic – of the international community. This comprehension serves as a base of methods from whence treaty mechanisms can be built accordingly.

### **1. Critical Theory and Constructivism: Backdrop of the Existing International Environmental Law and How to Make a New Legal Framework**

#### **1.1 Critical Theory**

It has been found that Critical Theory is a proper starting point where spring the ideas related to the structure. It posits a way to look at the international relations with a realist perspective and to build institutions by liberalist thinking.<sup>38</sup> The Critical Theory is used here to portrait a backdrop where international environmental affairs are existent and perhaps evolving. It sheds light on how actors play against such abstract backdrop of the environmental legal affairs. Realising the growing dynamics of legitimate authority and social resistance, the Critical Theory posits that the dynamics in the international affairs see the legal institutions mediating between moral principles or norms and resistant actions. Such dynamics shows us how international institutions shape norms and international law.<sup>39</sup> This dynamics establishes an approach to look into the affairs of actors which yearn for production of transcendent and/or radical discursive knowledge of international relations. More concretely, the Critical Theory demonstrates that actors assert themselves in the international stage by playing their roles in the affairs of legal instruments. It is necessary here to acquire a more pragmatic picture of

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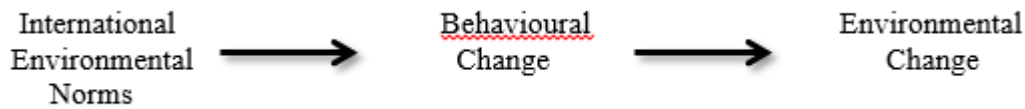
<sup>36</sup> According to the principle of Conservation of Options explicated by Edith Brown Weiss in *“Intergenerational Equity: A Legal Framework for Global Environmental Change”* in International Environmental Law in Richard L. Revesz, *Foundations of Environmental Law and Policy*, Foundation Press, New York, 1997, pp. 346 – 349.

<sup>37</sup> It has to be initially remarked that this study regards philosophy, thoughts and concepts as a way and ground of thinking and is intended to apply such certain way of thinking for establishing legal mechanisms and norms under its ASEAN legal framework. The study is *not* intended to consider or explicate philosophy for its own sake as another separate discipline. The certain ideas have been applied for nothing but the benefit of the law.

<sup>38</sup> See more at Steven C. Roach, *Critical Theory* in Tim Dunne, *International Relations Theories: Discipline and Diversity*, Oxford University, Great Britain, 2013, pp.145 – 158.

<sup>39</sup> *Ibid.*, pp. 145 – 158.

such attempt of the actors in order to understand how international actors<sup>40</sup> behave so that the legal framework can be designed in accordance with the Critical Theory. Arguably, Critical Theory helps this study to make happen the behavioural change of states, the change that affect the state's behaviours towards cooperation of treaty-making, implementation and enforcement of the ASEAN legal framework, as illustrated by Bodansky (See Figure 1).



**Figure 1:** From Norms to Environmental Outcomes<sup>41</sup>

Behind all these states' behaviours under international law lie values and norms, which are subsequently to be developed as a source of international law and legal principles, which actors, especially states, uphold. The challenge springing from the juncture between meta-theorizing and empirical knowledge is made in order to understand the content of the norms that shape the actors' practices. Imagination used to design the framework is thus a domain where there is a constituted connection between social purposes of ideas and radical desire for social change, as called "emancipation in international relations" leading to environmental equality and justice in the end. Nevertheless, to employ such imagination as the starting point for structuring an ASEAN legal framework is very much dependent on how much space provided for the actors or states to examine and decide what choice they like to go for. We thus need constructing something for actors so that they have more alternatives. Meanwhile, those constructs are ensured, the actors are free to select the construct compatible with their interests, or state interests in particular.

This in other words means that to build a regulatory regime without taking into account the actors who can affect survival of the environment is to protect the environment with a shortsighted vision. Take businesses as an example, it has to be admitted that they are like the end products which the environmental law aims to. Whether the international environmental law can make any change to our environment also depends on how these businesses that have everyday activities directly affecting the environment can observe and be accountable to the laws. Their manufacture has the real hand on harming the environment by exploiting chemicals, gasses and technologies that may be hazardous to genes and the environment. It is also these private actors who are part of state's implementing international law where their interests, i.e. profits and gains, are also state's interests, i.e. gross domestic profit. Our regard for the actual actors – businesses and states – taken into account would thus help us constitute the right incentives for them to comply with the law. That said, it can be quite obvious that this study is based on the thoughts of the realist international lawyers, i.e. realism, which has much to do with the thought of the School of Positive Law.

<sup>40</sup> when referring to the term "actor(s)," this study intends to include all international institutions in a broad sense; that is, states, international organizations and non-state actors such as non-governmental organizations (NGOs). However, states are specifically emphasized.

<sup>41</sup> as taken from Daniel Bodansky, *The Art and Craft of International Environmental Law*, Harvard University Press, Massachusetts, US and London, England, 2010, p. 257.

## 1.2 Constructivism

Constructivism posits that significant aspects of international relations are historically and socially constructed. Constructivism perceives the international relations as a “world of our making”<sup>42</sup> rather than culmination from all the actions of human nature or other essential characteristics of world politics.<sup>43</sup> Its core meaning is critique of and can be defined by rationalism.<sup>44</sup> Constructivism has the maxim that the world is full of constructs, social and historical; any establishment of which and institution is what is made up. The rationality of the Constructivists emphasizes that the structures built on the international plane can be made by constituting the role of norms and the shared understanding and relationships between actors and structures.<sup>45</sup> Through norms that are to be made into concrete legal provisions under a regulatory regime, states and other actors would act in compliance with a regulatory regime.

Kyoto Protocol, enacted to tackle climate change problems, epitomizes lack of disregard of Constructivism for it requires developed countries to ensure reduction of greenhouse gas emissions at the stipulated amounts. During the years 2008 – 2012, Japan was able to reduce the emissions by 6 percent, while, EU could do by 8 percent from the amount in the year 1990. This only renders Kyoto Protocol legally effective to the extent that developed states in which many industries reside can make reduction of emissions out of the commitment to the treaty obligations. However, Kyoto Protocol would be deemed as ineffective in terms of behavioural change if, for instance, the businesses in the polluting states are relocated in other states, especially those non-signatory to Kyoto Protocol, thus not being under the obligation, such as India. In that case, Kyoto Protocol cannot be taken as having real effect to the global emissions, particularly, having made no behavioural change to the environmental outcomes due to its lack of the shared understanding between the states parties and the constructs under it which otherwise making the states parties convinced to comply with the law.

In the same way, Convention on International Trade in Endangered Species of Wild Fauna and Flora (“CITES”)<sup>46</sup> would not be considered as effective in terms of law if its problem-solving capacity is not effective in that traders are still able to smuggle the unlawful animal parts across borders between countries. Behavioural change is not taken as established as long as commitment to norms, in a written or normative form, are not seriously ensured. Nevertheless, to make effective the problem-solving capacity of a treaty or particularly an ASEAN legal framework, which is based on the change related to norms, the points of targeting the right behavior and participation have to be included.<sup>47</sup>

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<sup>42</sup> N. Onuf, *World of our Making: Rules and Rule in Social Theory and International Relations*, Columbia, University of South California Press, 1989.

<sup>43</sup> [https://en.wikipedia.org/wiki/Constructivism\\_\(international\\_relations\)](https://en.wikipedia.org/wiki/Constructivism_(international_relations))

<sup>44</sup> K.M. Fierke, *Constructivism* in Tim Dunne *International Relations Theories: Discipline and Diversity*, Oxford University, Great Britain, 2013, pp. 161 – 173.

<sup>45</sup> A. Wendt 1987, *The Agent-Structure Problem in International Relations*, International Organization, 41/3: 335 – 70.

<sup>46</sup> CITES requires its signatories to implement it by constituting a system of permission as enshrined in the regulatory regime of the treaty.

<sup>47</sup> Daniel Bodansky, *The Art and Craft of International Environmental Law*, Harvard University Press, Massachusetts, US and London, England, 2010, pp. 256 - 258.

Hence, in order to make sure that ASEAN legal framework can ensure the ASEAN states parties' convinced commitment to its regulatory regime, this study is of the view that the shared understanding and good relationships between actors, that is the ASEAN states, and the structure, that is, a regulatory regime under the ASEAN Legal Framework must be established. As such, it is required to make 2 constructs here, namely, the right norms and the understanding and relationships shared between the ASEAN states and the structure of the ASEAN legal framework to which incentives under the framework could be of assistance. However, it has to be noted at this stage that states in international politics are neither uniformly nor universally rational egoists; rather, they are "distinct identities;" thanks to international actors being normally shaped by many aspects. And while all those circumstances keep changing, international actors cannot be static but subordinated to evolution as they are interacting with one another and their environmental constructs. With that realised, this study has to constitute those 2 constructs by its reliance on another 2 logics useful for crystalizing how to build the constructs appropriate to the ASEAN states.

#### **a. Logic of Appropriateness<sup>48</sup>**

Logic of Appropriateness offers the idea for establishing a construct within the international structure with the concern of legitimacy so that the construct can function in the way that it helps actors to define the structures through shared values and norms within institutions or other social structures. Thus, the construct under of the ASEAN legal framework has to be based on purely individual interests the states relate to the common values and norms shared among them. Put simply, a treaty or international regulatory regime principally has to be structured to meet the interests of states. Logic of Appropriateness very much relies on the realist perspective; indeed, it explains that states will never participate cooperation of any legal framework if they do not gain what meets their interests.

#### **b. Logic of Consequences<sup>49</sup>**

This logic contends that a source of justification for doing things and as well as a source of knowledge is required<sup>50</sup>. Logic of Consequences touches the arena of norms too but in a different sense. Unlike Logic of Appropriateness, norms, under this logic, are not the common things individual actors share, but what is capable of *constraining* their behaviours and importantly *forging* the states' identities. Therefore, for Logic of Consequences, norms and laws can be distinguished from instrumentally rational behaviours. Norms and laws are a result of a rational act that brings about maximization of the interests to actors. To simplify, states comply with norms and laws not because norms and laws are legitimate and thus worth being respected but, after considering such norms and laws, the states opine that the norms and laws in question are useful for helping them meet and maximize their interests, despite the norms and laws constraining their behaviour and forging their identities to the extent that the norms and laws direct.

<sup>48</sup> Logic of Appropriateness is based on Constructivism.

<sup>49</sup> Logic of Consequences is based on Rationalism.

<sup>50</sup> Baruch Spinoza is one of the great thinkers in Rationalism in the 17<sup>th</sup> century.



Hence, if we can make any particular norm as a legal provision with the idea from Logic of Consequences, such legal provision will be legally effective because of the force directing behind states' reasoning. Although law or a treaty may impose obligations upon states, the states are still happy to abide by it for the states believe that such obligations containing particular norms are the key to fulfill their interests. That said, the ASEAN legal framework has to be designed as something constraining states' behaviour with good incentives as the force that transforms the states' behaviour, the transformative force that makes behavioural change (See Figure 1) to the extent that their compliance with the legal framework is forging their new identities – the environmentally-concerned ones (See Figure 1).

### **c. A Mixture of Logics of Appropriateness and Consequences**

As having mentioned above, there are 2 ideas related to constituting effectiveness of norms and laws as the constructs, it is posited by this study that in order to make a legal framework workable, the norms and laws have to be manifested under the conceptual principles of Logics of Appropriateness and Consequences, simultaneously. For Logic of Appropriateness, norms are a source of legitimacy in the sense that such norms and laws are inherent of value and demand the ASEAN states to abide by through being constituted within the ASEAN legal framework institutions and structure. The norms and laws themselves define the legitimacy for the conduct of actors. At the same time, the norms and laws under the legal framework can be discernible from the states' behaviours out of their own instrumental rationality for it is also true that states are so much concerned about their interests to obtain if they are required to cooperate in an international environmental agreement; states behave in accordance with their belief of what constitutes the right for them rather than their given preferences. Logic of Consequences offers this study the idea that realizes such realities. To reiterate, being a signatory to a certain treaty provides them to reach their interests, the states see that it is the “right” thing to act that way. In other words, states' “interests” are state's “rights” and states' interests prevail the public “good”. Such “rights” here are important to the conception of this study. The “rights” are the key of the obligations under the ASEAN legal framework, not the “good” of the environment despite the aim of the framework. This may sound conflicting but it is the gist of the study's conception, also corresponding to the Immanuel Kant's philosophy and economic equilibria used for designing the legal mechanisms of the framework as shall be explicated below.

To make the most of the two conceptions, it is reasonable to make possible in reality a legal framework filled with the norms so idealistic as suggested by Logic of Appropriateness, whereas the realities of the world such as states' interests cannot be overlooked. If we would like to build a legally effective international regulatory system, we cannot ignore the idea of Logic of Consequences. We must make happen states' behavioural change for the “good” of the environment in the end by means of respecting their “rights” first; or metaphorically speaking, the “good” of the environment is the end product, which we manufacture through the machine equipped with the mechanisms serving the “rights” of

states. In short, this study opts to employ these two concepts<sup>51</sup> to be used for designing the mechanisms of the ASEAN legal framework.

## **2. The Environmental Philosophies for Understanding Protection of Biodiversity in Plant Genetic Resources**

### **2.1 Anthropocentrism versus Deep Ecology**

It can be too hard to reason how certain PGRs which do *not* always relate to, or as to the environmentalist language, are *not* always instrumental to human interests<sup>52</sup> at all can be valued and thus the state can be obliged in complying with the legal requirement of protecting such PGRs. The notion that PGRs can have intrinsic value as long as they are instrumental to us due to our science revealing their instrumental importance is anthropocentric or human-centred and thus does not belong to the conception of Deep Ecology. It is recommended that the state reconsider that the value of PGRs may not come in the form of tangible benefits and how to exploit them as human beings know. It is required to respect “value of any element of the environment for merely its being there in the earth (it must be functioning something in the ecosystem since it must be right there for some purpose); simply its being existence is enough for being valued, hence called “intrinsic value.” Upholding such intrinsic value, this study requires a certain mechanism as shall be explained later that helps states parties to the legal framework to change their behaviours in the way that ensures such intrinsic value is respected. The behavioural change as abovementioned would take place only when is there the force directing the states’ behaviours, strong enough in transforming the states’ behaviours. It is under the mechanism of this study’s legal framework where such “transformative force” needs to be equipped.

### **2.2 Environmental Ethics**

Privatization and appropriation under the domain of intellectual property law, as directly and indirectly supported by the existing international regulatory regimes of ABS of PGRs, more or less play their part in giving rise to biopiracy; this leads to the dilemma where the resources are protected in terms of intellectuality of the stakeholders involved with them, *not* the resources themselves. Ironically, what is perceived here is preservation of the human beings rather than the resources of nature. Undeniably, this is also a reflection of anthropocentrism. As long as our perception concerning value concerns how things or PGRs relate to our interests, it is not possible to escape the discourse where intrinsic value may not be of the type which is forceful enough to alter the deeply-rooted conception on how we value things. It is also possible to convey that the anthropocentric conception is related to utilitarianism – maximization of utility for humans and under the consideration of how the natural resources are instrumentally valued to humans; by the reasoning of which, it is explicit to perceive that Anthropocentrism upholds utilitarianism; thus, it must preach that the

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<sup>51</sup> Constructivism and Rationalism play their parts as methods. If one would like to make a parallel, one would see that Constructivism goes hand in hand with the School of Natural Law; whilst, Rationalism with the School of Positive Law.

<sup>52</sup> Hence, called “instrumental value,” conveying connotation of particular usefulness to humans or the determination of what product can be made of that certain plant genetic resource or animals.



“good,” (of the PGRs and the environment), *not* the “rights” (of states), must be prioritized.

It should be noted here that it is on the perception that the good is indiscriminate satisfaction of the arbitrarily given preferences without the concern of its worth that the right will outweigh the good. The concept that the right, even the “collective right” of the ASEAN member states in particular has to come first which is to be reflected in the treaty provisions to be developed on this ASEAN legal framework.

### **3. Immanuel Kant’s Deontological Liberalism**

Focusing on duties as morality under Natural Law, Immanuel Kant<sup>53</sup> also proposes another aspect of conception different to morality usually taken for granted when it comes to Kant’s norms and natural law. As having mentioned that Logic of Appropriateness’ norms are those values require us so eagerly to uphold for the sake of their morality for the environment as they are. Idealistic as believed by many scholars Kant’s thought on the outset preaches us to perform our duties to value considered universal, regardless of our specific interests. However, when it comes to designing a workable legal framework, a balance between the ideals (Logic of Appropriateness), i.e., the “good” of the diversity of PGRs and the reality (Logic of Consequences), i.e., states’ “rights” is required. Kant’s idea seems contradictory only to the superficial consideration. Only when do we touch upon Kant’s idea termed as “Deontological Liberalism,” we come to the understanding on how the balance bridges the two ends and how ideals can serve states’ interests.

Law so much appertains to ethics since it is based on and developed from norms, in turn upholding certain morality or ethics. It has to be posited that it would be less effective if the conception we use for ensuring biodiversity puts its emphasis only on the concept of Libertarianism, going hand in hand with upholding the good rather than the right. On the surface, to ensure biodiversity, the collective “good” (reflecting Utilitarianism and Libertarianism) must be guaranteed first thing and the right has to be conferred at a later stage; while, in some cases there is none of this conferring. However, this study is of the opinion, as Kant puts, that the “good” of PGRs biodiversity can be achieved by focusing firstly on the “right” of the states parties to legal framework. With the right of each of PGRs, a stakeholder – whether the states or breeders – observed, the good is due to come. In contrast to this, under almost every other environmental treaty, the “good” of the environment is always enshrined first thing as the pivotal aim, merely for the sake of making it attractive so that states will be tempted to cooperate in it; whilst, leaving a more concrete measure in a protocol to be adopted later, whether or not the protocol is effective being another point.

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<sup>53</sup> Immanuel Kant is an Enlightenment philosopher and university lecturer whose works benefit law, governance, politics, economics and many other disciplines. Although also being a mathematician, he offers rationality and thoughts valuable to be applied in many other fields.

#### 4. Concluding Remarks

Norms are derived from value; meanwhile, norms themselves can be developed to be positive law as enshrined in treaties or international norms which states are bound to respect as termed as soft law. Moreover, to solve the legal problem of overlapping treaties resulting from the convention-protocol approach, this study proposes to build a regional legal framework; this conforms to the concept of Constructivism which suggests us establish 2 constructs, namely, norms and relationship between norms and states. This study is consequently going to establish those 2 constructs under its ASEAN legal framework. To incorporate the first construct, that is, environmental norms, into the ASEAN legal framework, it has to select those norms from the already existing treaties and international environmental law that correspond to the idea of Logic of Appropriateness – idealistic as preferred by environmental ethics. Whereas, the second construct helping states and actors to get along with the treaty law in the long run, we must accordingly build a sustainable relationship between the provisions of the treaty based on this study's legal framework ("Framework Treaty") and states parties to ASEAN. It is within this second construct that we need effective mechanisms to put those ideal environmental norms into action in the real world. We need to transform that ideal into the law, a pragmatic means, but, in doing so, it requires a way of thinking that will lead us to such means. Whereas, Kant's Deontological Liberalism requires us to think about the "rights" or self-interests of states first; and as a result of which we will be led to the "good" of the environment and PGRs in the end. Regarded as idealistic, Kant shows his practical side in this field. How Kant's conception can be put into action by means of the economic equilibria shall be seen later.

#### **The Legal Problems Concerning Vienna Convention on the Law of Treaties as a Result of the Problem of the Contested and Overlapping Environmental Treaties**

Not only does a jumble of several inconsistent multilateral environmental treaties ("METs"), which are established at different certain times, cause the existing regulatory regimes created under them to be in contradiction with one another, but it also brings about a legal problem concerning Vienna Convention on the Law of Treaties ("VCLT"), a treaty with legal binding capacity and regulates treaties or international agreements. As to Article 2(a)<sup>54</sup> of VCLT, all the international environmental agreements are regarded as "treaties;" therefore subject to the provisions of VCLT. Admittedly affecting enforcement of and compliance of METs largely because of the subject matters in METs are overlapping; the legal problem between METs and VCLT principally derives from the conflict between VCLT and the METs.

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<sup>54</sup> Article 2 Use of Terms

1. For the purposes of the present Convention:

(a) "Treaty" means an international agreement concluded between States in written form and governed by international law, whether embodied in a single instrument or in two or more related instruments and whatever its particular designation.

Most METs are based on a convention-protocol approach; indeed, after a certain convention has been established, a protocol to such convention is adopted in order to amend the convention and to constitute enforcement and compliance mechanisms. Subsequently, most METs are at first established with vague and broad aims with hope for drawing attention from states and with fear that states would not be signatory to it, thus leaving a space for a protocol at a later stage after there has been the sufficient number of ratifying states parties as designated for the convention coming into force. A protocol will have the concrete enforcement and compliance regimes certainly legally requiring states parties' commitment to it with a legally-binding capacity and more tangible provisions of what the convention really aims. This convention-protocol approach of the existing METs in short causes the problems as follows.

### **1. The Problems of Overlapping Subject Matters between Multilateral Environmental Treaties**

The convention-protocol approach is carried out with the intention of upholding the “good” of the environment first by putting the environmental principles in a broad sense and less commitment in order to attract states as many as possible. The vague content of the first convention shall pave the way for concrete mechanisms of enforcement and implementation to come in the next treaty in the form of a protocol to be adopted in the future. The aforementioned idea may be good but causes a problem. Indeed, there appear the scenarios where the states parties to the earlier treaty, i.e. convention, may not be parties to the later treaty, i.e. protocol. The first conflict to arise is that of application of the law when there are two treaties in the same subject matters; in other words, the conflict between the convention and the protocol themselves. Moreover, this set of 2 treaties (convention and protocol) on the same subject matter can be in contradiction with the other sets of the environmental convention and protocol whose provisions, likely equipped with mechanisms, on the same subject matters. All this trouble has to fall under VCLT with respect to how to apply the intermingled provisions. And to precipitate this problem, VCLT is not sufficient and effective in solving this problem.

#### **1.1 Conflicts of Obligations Imposed on States Parties under the Overlapping Multilateral Environmental Treaties**

Conflicts of obligations imposed on states parties under the overlapping METs can fall into 2 problems: the legal problem between signatories to both the convention and protocol and signatories to only the convention under the same set of those convention and protocol and the legal problem between signatories to a set of the convention of protocol and also to other sets of the convention and protocol. An example of this is CBD, which allows a protocol to be adopted as stipulated under its Article of 28.<sup>55</sup> The states parties within the

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<sup>55</sup> Article 28 of CBD: Adoption of Protocols

1. The Contracting Parties shall cooperate in the formulation and adoption of protocols to this Convention.
2. Protocols shall be adopted at a meeting of the Conference of the Parties.

same set of the convention and protocol can have a conflict in terms of treaty obligations they are bound to commit to. Because of there being 2 treaties under the same umbrella, they may be confused of how to comply with the obligations; moreover, the question of how they behave to one another when some are parties to the first convention, not the later protocol, while, the other parties to both the first convention and the protocol. Worse to come, the states parties to any set of 2 treaties as such must have conflict in terms of implementation and compliance when they become signatory to the other METs with a convention-protocol approach as this at the same time. The second problem as having been described is subject to VCLT. And as shall be seen, VCLT is *not* capable of solving this problem either.

## **1.2 The Legal Problem between Vienna Convention on the Law of Treaties and the Overlapping Multilateral Environmental Treaties**

The query raised in relation to VCLT is to what extent the states parties to METs have to comply with the obligations related to the same subject matters. The overlapping subject matter circumstances are categorized into three scenarios in the followings.

- a. The first is where there is priority of the provisions among the METs in question,
- b. The second is where the parties to the two treaties are identical and where there are additional parties to the later treaty which are not parties to the earlier one; and,
- c. The last is where there remain parties to the earlier treaty which do not become parties to the later treaty.

To explain a., this is in the area of the parties according their treaty priority over either the previous or the future treaties. This has to deal with interpretation, i.e. the rule of Lex Posterior, possibly culminating in modification or termination of the earlier treaty. Mentioning b. and c., this causes a problematic issue on the condition that the parties to the earlier treaty are not allowed to modify the earlier treaty's terms or to act in contravention of the provisions of which. Whereas, not all areas in the last scenario prove problematic; yet, the areas that are problematic are, firstly, the relationship between the group of parties to the earlier treaty which are not parties to the later one and any parties to the later treaty not being parties to the earlier one, and secondly, the relationship between the group of parties to the earlier treaty which are not parties to the later one and the parties to the earlier treaty not being parties to the later one. Despite being covered by Sub-Paragraph (b) under Paragraph 4 of Article 30 of the VCLT,<sup>56</sup> these mentioned areas are possible only when must entry to the

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3. The text of any proposed protocol shall be communicated to the Contracting Parties by the Secretariat at least six months before such a meeting.

<sup>56</sup>Article 30 Application of successive treaties relating to the same subject-matter

1. Subject to Article 103 of the Charter of the United Nations, the rights and obligations of States parties to successive treaties relating to the same subject-matter shall be determined in accordance with the following paragraphs.

2. When a treaty specifies that it is subject to, or that it is not to be considered as incompatible with, an earlier or later treaty, the provisions of that other treaty prevail.

later treaty by the group of the earlier treaty parties involve at least modification of the treaty's terms and by which it potentially constitutes either a breach of the treaty (a fundamental one included in possibility) or repudiation of it if, subject to Paragraphs 4 and 5 of Articles 30 and Article 41 of the VCLT<sup>57</sup>, there is no modification of the terms of the earlier treaty allowed or there is modification to the extent that is more than allowed by the earlier treaty. Such occurring conflict from the inconsistent treaties causes trouble between the parties involved and, if any, brings about necessity of dependence on interpretation of conflict clauses for the purpose of making the treaties involved into force without conflicts; whereas, use of conflict clauses is not uniform among METs and also prone to controversy.

Moreover, it has to be borne in mind that apart from applicability of Article 30 of the VCLT, where not every state party to the earlier treaty is party to the later treaty, Paragraph 4 of Article of 30 of the VCLT is applied to determine rights and obligations between states. This does not prevent states parties from being subject to the law of state responsibility for concluding or applying the treaty the provisions of which are incompatible with their obligations towards other states under the other treaty. In other words, a breach of treaty can be committed provided that there is infringement of the rights of the states parties to the other treaty. A breach of treaty is, therefore, most likely to be committed in the situations related to all these inconsistent METs as can be seen from the potential conflict between Convention on Climate Change ("CCC") and CBD, that between TRIPS and CBD and that between TRIPS and Nagoya Protocol.

The problematic complexity caused by the cluster of inconsistent METs goes even further to the point that the provisions of METs do not always guarantee the result initially intended. Epitomizing this, TRIPS, meanwhile upholding intellectual property law for PGRs to tackle biopiracy, in fact, stimulates biocapitalism through private appropriation.

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3. When all the parties to the earlier treaty are parties also to the later treaty but the earlier treaty is not terminated or suspended in operation under article 59, the earlier treaty applies only to the extent that its provisions are compatible with those of the latter treaty.

4. When the parties to the later treaty do not include all the parties to the earlier one:

(a) as between States parties to both treaties the same rule applies as in paragraph 3;

(b) as between a State party to both treaties and a State party to only one of the treaties, the treaty to which both States are parties governs their mutual rights and obligations.

5. Paragraph 4 is without prejudice to article 41, or to any question of the termination or suspension of the operation of a treaty under article 60 or to any question of responsibility which may arise for a State from the conclusion or application of a treaty, the provisions of which are incompatible with its obligations towards another State under another treaty.

<sup>57</sup> Article 41 Agreements to modify multilateral treaties between certain of the parties only

1. Two or more of the parties to a multilateral treaty may conclude an agreement to modify the treaty as between themselves alone if:

(a) the possibility of such a modification is provided for by the treaty; or (b) the modification in question is not prohibited by the treaty and: (i) does not affect the enjoyment by the other parties of their rights under the treaty or the performance of their obligations; (ii) does not relate to a provision, derogation from which is incompatible with the effective execution of the object and purpose of the treaty as a whole.

2. Unless in a case falling under paragraph 1(a) the treaty otherwise provides, the parties in question shall notify the other parties of their intention to conclude the agreement and of the modification to the treaty for which it provides.

Additionally, Nagoya Protocol, being related to biodiversity and PGRs, instead has conflict with TRIPS despite its intention to be in harmony with trade agreements as TRIPS.

## 2. Conflict Clauses in Multilateral Environmental Treaties

Some METs avoid the complexity by including conflict clauses in their provisions; however, there are treaties whose conflict clauses are excluded or ambiguous, and thus, subject to interpretation anyway. International Treaty on Plant Genetic Resources for Food and Agriculture (“ITPGRFA”), as an example, neither positions itself with a conflict cause in relation to the relationship nor intends to constitute hierarchy with the other METs. Meanwhile, Paragraph 2 of Article 30 of the VCLT is not of help as can be seen from the case of the preamble of Cartagena Protocol on Biosafety,<sup>58</sup> a protocol adopted to CBD, containing the provisions almost identical to those of ITPGRFA<sup>59</sup>; as a result, it is hard to determine

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<sup>58</sup> Preamble of Cartagena Protocol:

The Parties to this Protocol,

Being Parties to the Convention on Biological Diversity, hereinafter referred to as “the Convention”,

Recalling Article 19, paragraphs 3 and 4, and Articles 8 (g) and 17 of the Convention,

Recalling also decision II/5 of 17 November 1995 of the Conference of the Parties to the Convention to develop a Protocol on biosafety, specifically focusing on transboundary movement of any living modified organism resulting from modern biotechnology that may have adverse effect on the conservation and sustainable use of biological diversity, setting out for consideration, in particular, appropriate procedures for advance informed agreement,

Reaffirming the precautionary approach contained in Principle 15 of the Rio Declaration on Environment and Development,

Aware of the rapid expansion of modern biotechnology and the growing public concern over its potential adverse effects on biological diversity, taking also into account risks to human health,

Recognizing that modern biotechnology has great potential for human well-being if developed and used with adequate safety measures for the environment and human health,

Recognizing also the crucial importance to humankind of centres of origin and centres of genetic diversity,

Taking into account the limited capabilities of many countries, particularly developing countries, to cope with the nature and scale of known and potential risks associated with living modified organisms,

Recognizing that trade and environment agreements should be mutually supportive with a view to achieving sustainable development,

Emphasizing that this Protocol shall not be interpreted as implying a change in the rights and obligations of a Party under any existing international agreements,

Understanding that the above recital is not intended to subordinate this Protocol to other international agreements,

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<sup>59</sup> Preamble of ITPGRFA

The Contracting Parties,

Convinced of the special nature of plant genetic resources for food and agriculture, their distinctive features and problems needing distinctive solutions;

Alarmed by the continuing erosion of these resources;

Cognizant that plant genetic resources for food and agriculture are a common concern of all countries, in that all countries depend very largely on plant genetic resources for food and agriculture that originated elsewhere;

Acknowledging that the conservation, exploration, collection, characterization, evaluation and documentation of plant genetic resources for food and agriculture are essential in meeting the goals of the Rome Declaration on World Food Security and the World Food Summit Plan of Action and for sustainable agricultural development for this and future generations, and that the capacity of developing countries and countries with economies in transition to undertake such tasks needs urgently to be reinforced;

Noting that the Global Plan of Action for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture is an internationally agreed framework for such activities;



rights and obligations which states parties have to know exactly how to observe without constituting a breach of treaty.

### Summarized Legal Problematic Points concerning Article 30 of the VCLT

All the questions related to Article 30 of the VCLT as having been mentioned above can be summarized as follows:

- a. The question of how strictly is “the same subject-matter” requirement to be interpreted;
- b. The question of what the practical application of Article 30 of the VCLT is in conjunction with Articles 41 and 59<sup>60</sup> of the VCLT;
- c. The question of what the practical argument for making a distinction between Lex Posterior (i.e. the Conflict Rule) and Legi Speciali Derogant Legi Generali (the Rule of Interpretation) due to the International Court of Justice’s application of both rules together;
- d. There is no agreement as to the legal character of these two sets of rules

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Acknowledging further that plant genetic resources for food and agriculture are the raw material indispensable for crop genetic improvement, whether by means of farmers’ selection, classical plant breeding or modern biotechnologies, and are essential in adapting to unpredictable environmental changes and future human needs; Affirming that the past, present and future contributions of farmers in all regions of the world, particularly those in centres of origin and diversity, in conserving, improving and making available these resources, is the basis of Farmers’ Rights;

Affirming also that the rights recognized in this Treaty to save, use, exchange and sell farm-saved seed and other propagating material, and to participate in decision-making regarding, and in the fair and equitable sharing of the benefits arising from, the use of plant genetic resources for food and agriculture, are fundamental to the realization of Farmers’ Rights, as well as the promotion of Farmers’ Rights at national and international levels; Recognizing that this Treaty and other international agreements relevant to this Treaty should be mutually supportive with a view to sustainable agriculture and food security;

Affirming that nothing in this Treaty shall be interpreted as implying in any way a change in the rights and obligations of the Contracting Parties under other international agreements;

Understanding that the above recital is not intended to create a hierarchy between this Treaty and other international agreements;

Aware that questions regarding the management of plant genetic resources for food and agriculture are at the meeting point between agriculture, the environment and commerce, and convinced that there should be synergy among these sectors;

Aware of their responsibility to past and future generations to conserve the World’s diversity of plant genetic resources for food and agriculture;

Recognizing that, in the exercise of their sovereign rights over their plant genetic resources for food and agriculture, states may mutually benefit from the creation of an effective multilateral system for facilitated access to a negotiated selection of these resources and for the fair and equitable sharing of the benefits arising from their use; and

Desiring to conclude an international agreement within the framework of the Food and Agriculture Organization of the United Nations, hereinafter referred to as FAO, under Article XIV of the FAO Constitution.

<sup>60</sup> Article 59 of VCLT

Termination or suspension of the operation of a treaty implied by conclusion of a later treaty

1. A treaty shall be considered as terminated if all the parties to it conclude a later treaty relating to the same subject-matter and:

(a) it appears from the later treaty or is otherwise established that the parties intended that the matter should be governed by that treaty; or (b) the provisions of the later treaty are so far incompatible with those of the earlier one that the two treaties are not capable of being applied at the same time.

2. The earlier treaty shall be considered as only suspended in operation if it appears from the later treaty or is otherwise established that such was the intention of the parties.



- mentioned in Question c;<sup>61</sup>
- e. There is doubt involved with the use of these rules;<sup>62</sup> and,
  - f. The question of whether certain treaties, due to their particular subject-matter, are subject to the conflict rules different from those stipulated in Article 30 Paragraph 4 (b).<sup>63</sup>

Below are the examples of conflict clauses which can be assessed as to how effective they are.

a. CBD and United Nations Convention on the Law of the Sea (“UNCLOS”): UNCLOS replaces the CBD’s provisions related to marine resources. With regard to the provision of Article 22 Paragraph 2 of the CBD, it is understood that, firstly, both CBD and UNCLOS’s regimes exist in parallel and supplement and reinforce each other;<sup>64</sup> and secondly, only if the application of the CBD infringes upon the states’ rights or obligations under UNCLOS would the latter prevail.<sup>65</sup> However, the problem still exists in that the language used in such article of CBD<sup>66</sup> giving rise to the threshold of “damage” being subject to determination and discretion. Moreover, UNCLOS is aimed for protection of marine resources whilst CBD has broader protection of all kinds of resources for genetic biodiversity. Worst of all is that both CBD and UNCLOS are enshrined with integral obligations (as explained below), containing the norms of the same order. Thus, all this poses the problem of how to regard which one as overruling which.

b. Cartagena Protocol on Biosafety adopted to CBD: It is understood that the conflict clause is constituted in the Preamble of Biosafety Protocol; however, there can be interpretation that under those relevant conflict clauses (especially Clause 10) instead undermines the purpose for solving of the preceding conflict clauses. The result of this is the Protocol is incompatible with or deemed modifying parties’ obligations under the earlier treaty, CBD. In other words, this means that the Protocol prevails in the case of a conflict between the Protocol and the earlier treaty. By the same token of this reasoning, the effect by means of the measure in the Protocol would be rendered opposite to the Protocol itself despite its express language. And to make things worse, there is now Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety.

From the examples of the treaties above, it has to be concluded that according to Article 30 of the VCLT, the provisions of a later treaty prevails in the case of a conflict with a later treaty without a conflict clause; and notably, this solution does not always bring about a desirable result.

<sup>61</sup> These mentioned rules are to be treated when applied to the conflict of treaties as not rules of interpretation but rather as general rules of law accepted by all legal systems.

<sup>62</sup> For instance, there may be doubt related to use of the rules in question in a situation where parties to the earlier bilateral treaty later become parties to a multilateral treaty dealing with the same issue.

<sup>63</sup> This question often arises with respect to human rights treaties that create the so-called integral obligations.

<sup>64</sup> Wolfrum and Matz, *The Interplay of the United Nations Convention on the Law of the Sea and Convention on Biological Diversity*, 4 Max Planck Yearbook of United Nations Law, 2000, pp 445 – 480.

<sup>65</sup> Ibid., p. 477.

<sup>66</sup> The problematic phrase in Article 22 of CBD is “except where an exercise of those rights and obligations would cause a serious damage or threat to biological diversity.”

## **The Existing Attempts to Solve Vienna Convention on the Law of Treaties' Lack of Provisions concerning Overlapping Subject Matters under Multilateral Environmental Treaties**

### **1. The Emergence of Norms in International Environmental Treaties**

There are norms or doctrines<sup>67</sup> emerging in order to cement the legal loopholes of VCLT as a solution to the problem of the overlapping METs as follows.

#### **1.1 Common Heritage of Mankind and Common Concern of Humankind**

Meanwhile the problem of the inconsistent provisions of METs keep lingering on, development of the norms is empirically perceived as reflecting two dimensions; firstly, the international demand of sufficient measures to solve the problem; and secondly, the developed norms themselves, however, causing another problem. Under the norm of Common Heritage of Mankind ("CHM"), PGRs were regarded as one of common property determined by sovereignty of a subjacent state. There was determination of international legal status under the concept of CHM.<sup>68</sup> After the paradigm shifted, there has recently arisen another principle of Common Concern of Humankind ("CCH"),<sup>69</sup> under whose auspice, the concept of common property has become "common resources," a vital interest to humankind. Therefore, it is open to all humankind to access to such resources, which are deemed as vital to humans' interests without, notably, being referred to the legal concept of sovereignty of a state. Called "global utility," this recent concept with an open attitude however has less defined legal connotations.<sup>70</sup> What is left is legacy for the global environment is consequently the international basis for international actors to behave in accordance to the concern reasonably considered as universal<sup>71</sup> and no longer merely under states' domestic jurisdiction<sup>72</sup>. This ground should be seen as evolution of international environmental law, striking a balance between the international conduct of states and national sovereignty of states. The international conduct related to the PGRs is no longer solely within the jurisdiction of states. However, it has to be remarked that it also emphasizes the need of the international community to have a rule regarding the resources whereas CCH has not fully evolved to be a concrete rule of international law. This study is of the view that it would be a more advantage to the global environment provided that observance and compliance of such soft-law principle can be ensured in reality – endorsed as concrete law in a legal instrument constituted.

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<sup>67</sup> Norms are related to common concern established, *not* a connotation of specific rules and obligations, but a general basis for the international community to behave and also clarifying that there exists international concern about the subject matter in question.

<sup>68</sup> P. Birnie and A. Boyle, *International Law and the Environment*, 2002, pp. 523 – 533.

<sup>69</sup> E. Brown-Weiss, *In Fairness to Future Generations: International Law, Common Patrimony, Intergenerational Equity*, 1989, p.49.

<sup>70</sup> UNEP/bidiv.SWGB.1/5Rev.1, 28 Nov. 1990.

<sup>71</sup> A. Kiss and D. Shelton, *International Environmental Law*, 1999, p. 251.

<sup>72</sup> *Ibid.*, p. 251.

Whether PGRs are rendered under either of those doctrines, the normative implications of which call for states to commit themselves to conform to the doctrines themselves together with the METs' provisions based on those doctrines. These so-called soft-law doctrines in METs are regarded as "integral obligations," and where there exist METs containing such integral obligations which are made for bestowing priority to the treaty in which they are enshrined, conflict between the earlier treaty and the successive ones, again and unfortunately, arises due to the confusion of which treaty is positioned in a higher order and which a lower one. For instance, the states parties to both CBD, directly dealing with ABS of genetic resources, and to CCC are prone to go into conflicts when implementing since they have to determine which one is higher in terms of the integral obligations and may potentially be subject to state responsibility under international law. The CBD issue itself is further exacerbated by its protocol, Nagoya Protocol regarding firstly, the concern of whether or not the protocol contains the integral obligations that contradicts with the provisions within the other METs in terms of priority, and secondly, the questions of the relationship between the states parties to both CBD and Nagoya Protocol and those parties only to CBD and the relationship between those to the CBD's regime (Nagoya Protocol included) and those to the other METs.

Having been explicated so far, it can be stated that whilst a number of environmental treaties aim to solve the global environmental problems, the treaties themselves cause much controversy, resulting in conflicts between the states parties and possible violation of international law. It is not beyond the bound of possibility to argue that the failure of METs, due to their overlapping subject matters and lack of hierarchy of norms, precipitates malfunctioning of the regime mechanisms. And admittedly, we are inevitably part of putting the environment at the brink of catastrophe.

## 1.2 Intergenerational Equity<sup>73</sup>

This concept emerges in order to regard the earth and its resources as the wealth of all nations held in trust. It is also regarded as "planetary trust," bestowing us with rights and obligations. It also has to be noted that the rights under the principle is intergenerational rights as group or collective rights that a generation may be entitled to enforce it against the other ones. As put by Brown-Weiss, the trust is enjoyed and passed from generation to generation or from our ancestors to us<sup>74</sup>. This concept has been developed through certain international legal instruments, namely, Pacific Fur Seals Arbitration, the 1946 International Convention for the Regulation of Whaling (as enshrined in its preamble), the 1972 Stockholm Declaration and the 1992 Rio Declaration. However, it seems there is no academic extent elaborated on this regard; in consequence, it is rather hard to pinpoint to what extent those obligations are.

<sup>73</sup> The Intergenerational Equity Theory is expounded by E. Brown-Weiss.

<sup>74</sup> E. Brown-Weiss, *"Our Rights and Obligations to Future Generations for the Environment"* in 84 American Journal of International Law, 1990, p.198.

Nevertheless, despite all this lack of concrete enforcement, the norms described, looked at from the academia of international law, illustrate that the regime of international environmental law plays a crucial role in developing contemporary international law.<sup>75</sup> Furthermore, the rights that it helps to constitute reflect the characteristic of the rights of the international plane where all states are legally supposed to enjoy, that is, collective and co-operational rights. This could be taken as a unique character of environmental protection<sup>76</sup> and also as an element of sustainable development.<sup>77</sup>

## **2. Treaty Interpretation**

As to the definition by International Law Commission, “integral obligations” are the type of obligations where a breach of which necessarily affects the other parties’ enjoyment of their rights and performance of their obligations committed to a treaty. Such breach is prone to be invoked by other parties than a defaulting party in order to suspend the whole or part operation of a treaty if the treaty is of such a character that a material breach of its provisions by a party radically alters the existing position of every party to the treaty in relation to their further performance of the obligations under the treaty. The controversy is manifested when it is taken that any treaty containing CHM and CCH is regarded as the treaties with integral obligations, having, as a result, some priority over other provisions of treaties of a lower order.

The problem may arise in this way. Indeed, there must be the earlier treaty and the later one whose members are identical parties. The earlier treaty must contain integral obligations, not open for contracting out; whereas, the provisions of the later treaty are inconsistent, thus constituting violation of obligations towards the earlier treaty. Despite such contradiction of the later treaty to the earlier one, the parties to both treaties, subject to Article 30 (4)(b) of the VCLT, still fall under the obligations under the earlier treaty as between the parties to whom the obligations of the earlier treaty imposes. This scenario happens to the case of CCC and the Kyoto Protocol. The other side of the controversy is where both the earlier and later treaties contain integral obligations as happening to the case of a potential conflict in overlapping areas between the CBD and CCC. Both treaties are taken as in the same hierarchy. How do we rank them so that priority of the provisions can be determined? This is how treaty interpretation thus has to play its role.

Interpretation to be conducted is based on evaluation of, first and foremost, the state parties’ purposes, and conducts. This evaluation would let us know to what extent the state parties wish to be bound. When it comes to interpretation, one would consult the treaty itself as an approach preferred by Paragraph 1 under Article 31 of the VCLT; this is called “textual interpretation.” However, it has to be noted that textual interpretation may not of reliable help since in this case, the environmental treaties in question pose a problem related to determination of which treaty prevails over the other one in order to apply the right provisions. What to be observed thus is the interpretation other than textual interpretation

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<sup>75</sup> Malgosia Fitzmaurice and Olufemi Elias, *Contemporary Issues in Law of Treaties*, Eleven International Publishing, the Netherlands, 2005, p.343.

<sup>76</sup> *Ibid.*, p. 343.

<sup>77</sup> P. Birnie and A. Boyle, *International Law and the Environment*, 2002, pp. 523 – 533.

which is supposed to be more inclusive and considerate. Malgosia Fitzmaurice suggests two approaches under this kind of interpretation.<sup>78</sup> The first of which is “policy-oriented interpretation of treaties;” whereas, the second “teleological interpretation of treaties.” These two approaches would assist how to determine the treaty and then the provisions enshrined within the treaty for the case.

### **6.3 Establishment of Hierarchy of Norms as a Solution to the Problem of Overlapping Subject Matters**

There is another way out of such limbo of conflict of norms, namely, establishment of hierarchy of environmental norms. A state has to sort to avoid the deadlock of application of norms and performance of the provisions of the existing treaties in force by means of determining the context of the policies and teleology of the states parties to the extent of which one should be rendered higher. It is arguably recommended to opt for the option that is more effective than the one suggested by Article 30 of the VCLT.<sup>79</sup> Thus, that states sidestepping Article 30 of the VCLT may be the most suitable to resolve this problem for the time being; it has however to be conducted through international harmonization and coordination.<sup>80</sup> The most urgent and important solution is to establish hierarchy of environmental norms. The further substantial consideration to be made upon such establishment of hierarchy of norms at the international stage is however beyond the scope of this study. Whereas such hierarchy has not been yet established, what we can do in the meantime is to constitute a treaty based on a legal framework equipped with mechanisms and based on a new approach as to avoid the problematic legal issues inevitably falling under Article 30 of VCLT.

### **6.4 Summary of The Problem of Convention-Protocol Approach**

This approach has been true enough since the first United Nations Conference on the Human Environment in Stockholm in 1972. The problem of this approach can portrayed in that states are provided by a vague statement enshrined in the form of a convention where concrete provisions are peripheral in terms of tackling the environmental degradation. Specific and emancipative actions or real feasible mechanisms of the law to be executed are set aside, waiting to be constituted later, resultantly leaving the state parties blank to implement what needs to be agreed upon for legal mechanisms for protection of the environment.

<sup>78</sup> Malgosia Fitzmaurice and Olufemi Elias, *Contemporary Issues in Law of Treaties*, Eleven International Publishing, the Netherlands, 2005, pp.343 – 348.

<sup>79</sup> P. Vigil, *The Interaction between the Antarctic Treaty System and the Other Relevant Conventions Applicable to the Antarctic Area*, 4 Max Planck Yearbook of UN Laws, 2000, p.508.

<sup>80</sup> Wolfrum and Matz, “Conclusions and Outlook” in *Conflicts in International Environmental Law*, 2003, pp. 209 – 213.

The chunk of these protocols where the subject matters overlapped not only renders the regimes complex and inconsistent, but also leads to contradictory circumstances in preservation of the environment. Thus, what is left at the end is ineffectiveness of states in compliance with the treaties and what is most affected is the environment. It has to be concluded that Article 30 of the VCLT is not capable of solving the conflict according to the findings of this study, leading both tribunals and us to treaty interpretation. Paragraph 1 of Article 31 of the VCLT prefers “textual interpretation.” The certain legal academics, however, consider such application of textual interpretation as preferred by the VCLT as unreliable and not thorough. Policy-oriented and contextual interpretations are suggested instead despite no existence of such interpretation in the VCLT – the hard law. Furthermore, it has been seen that the certain actors opt for an alternative for solutions by setting aside the VCLT and looking more on the doctrines with less defined legal connotations.

The measures under this study as shall be seen can be a case study for solving the environmental legal field relying on the existing METs, consequently rendering this study as an ex-post research; meanwhile, the mechanisms provided therein for ASEAN an ex-ante research. From the philosophical aspect, to reverse the existing regimes inspired by the international legal theory of Monist Constitutionalism, the positioning of this study relies on the view that “the environmental lesson for the environmentalists is that no larger scale project will succeed if it is not rooted in our small-scale practical reasoning.”<sup>81</sup> As such, this study’s methodology and proposed regime are based on Pluralist Constitutionalism.

## **ASEAN Legal Framework for Equal Access to and Fair Benefit Sharing of Plant Genetic Resources in Southeast Asia**

### **1. Environmental Treaty Making by the Economic Principles under the ASEAN Legal Framework for Equal Access to and Fair Benefit Sharing of Plant Genetic Resources**

This study’s legal framework employs the GT as the solution for the legal problem as posed by the existing METs. It is specifically one of those sub-theories of the GT, i.e. Kant’s Transformation Equilibrium, which corresponds to Kant’s theory on deontological liberalism; indeed, it is, in other words, Kant’s own concept, that is transformed into a tangible economic formula. Principally, these equilibria demonstrate how each situation of METs reaches its balancing point meaning that all factors under any certain equilibria will finally go to that balancing point in the end. Notably, under the following equilibria are the situations where there are 2 factors; i.e. signatories and non-signatories, affecting how each situation of treaty-making can reach the equilibrium – the balance at the point where a treaty can be established with the factors being satisfied. Note that a technical term of “payoff” used by economists refers to an international legal term of “state interests”. In short, such term “payoff” is something that benefits states and has “transformative force.” Thus, the more payoff, the more likely states intend to take part in an environmental legal framework. Let us suppose that all the factors here (those 2 types of states) are symmetrical, meaning that they are under the similar conditions.

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<sup>81</sup> Roger Scruton, *Green Philosophy*, Atlantic Books, Great Britain, 2013.



Speaking about “cost,” this makes sense to understand the mechanisms not only under this study’s legal framework but also UNFCCC and Kyoto Protocol. States’ actions and behaviours have cost. By cost-benefit analysis, the more state interests gained from a treaty, the more contributions to a treaty states will be willing to make. Preserving the environment and diversity of PGRs by ABS of PGRs can incur cost; but, if the cost of such preserving can help states gain benefit (in correspondence with their interests) which at least *equals* or is *more* than the cost incurred from states’ opposite actions that are harmful or actions that destroy the environment or PGRs, states are certainly willing to preserve the environment. Under the concept of cost springs the rationality of making a balance where cost and benefit can meet. It seems like a minimum ground where both factors, that is, states parties to a treaty, can win. Gaining more than a balancing point is extra profit or benefit gained more than a minimum ground which is pleasant, especially if this is the case of the good for the environment.

Another thing is a balancing point or such minimum balanced ground that is called “equilibrium,” as shall onwards be referred to. At equilibrium is there an intersection between the “marginal PGRs damage cost” and “the marginal PGRs preservation cost,” deriving from submission of the PGRs to the gene bank or from all conservation of PGRs and technologies used for manufacture of products related to PGRs. This means that a more unit of prevention of the PGRs from damage (extinction included) equals the additional cost of PGRs submission or preservation, resulting in the environmental gain – the “good” of diversity of PGRs or the environment. The state party whose capacity meets the requirement under the Framework Treaty would incur its cost in dealing with submitting its PGRs to the gene bank and complying with the Framework Treaty provisions. Such cost includes the cost incurred from a wide range, that is, the cost accumulated from the management and all cost involved of breeders, farmers or holders of PGRs in question to scientific processes. The cost here that the state party is obliged to be responsible for is to be calculated and submitted to the Secretariat as the depository of the Framework Treaty; this reported cost can be subsidized by the funding organ under the Framework Treaty. We shall now turn to the equilibria below.

## **2. The Equilibria of the Game Theory**

The Game Theory (“GT”) is developed by John Forbes Nash Jr.. It is useful in many fields in need of strategies especially for cooperation. We need states to cooperate in treaty-making and ultimately preserving diversity of PGRs and Nash’s GT can be of assistance. The first GT equilibrium is the Game of Prisoner’s Dilemma.

### **2.1 The Prisoners’ Dilemma Game**

Under this Game of the Prisoners’ Dilemma, let us suppose that there are 2 prisoners that are required to confess his crime to the court of justice. To protect his own interest as much as possible, the first one of the two would have to evaluate how much loss or punishment he would obtain if he confesses the truth. As a consequence, he has to know the other prisoner’s choice, or has to determine whether one outcome is preferred to another so that he would make a decision that best suits him or his interest, giving him the most payoff. Self-interest therefore directs each prisoner to prefer a payoff that is greater than a smaller



one; moreover, it will have each prisoner not care for the other's payoff. It has to be assumed under this Game that each prisoner does not know how the other will act but that each knows what choice the other may make; and that each prisoner knows that his payoff is associated with every choice and knows preferences of the other.

Like prisoners in this dilemma, the choices which the states take are influenced by state's self interest since they would select what gives them the most payoff. This is called as "dominant strategy" of states in this kind of deadlock, hence, the name of this Game, the Prisoners' Dilemma. This is because in whatever situation *both* states choose to destroy the environment as they see to that it gives their most benefit (the least cost). The dominant strategy under this game which is the choice of not cooperating in treaty-making because states deem it as incurring cost for them; the payoff they gain will not be more than the state of staying outside the treaty. This is the normal situation at the international level; the equilibrium of this Game or Nash's equilibrium is indeed the bottom line every state chooses.

## **2.2 Zero Sum Game**

A state may cooperate with one another if its preferences are over the payoff difference among other states. Preferences can be something a state prefers for whatever reason. As such, that state cooperates with a treaty; it may seem to help other states in protecting the environment but in reality the environment gains no benefits because the total sum remains the same. To epitomize, this situation has happened before to Kyoto Protocol. In the negotiation, EU chose to cooperate with the Protocol by reducing its greenhouse gas emissions by 8 per cent. Afterwards, there was a negotiation that the overall percentage of reduction of emissions under the Protocol needed to be reduced to 8 per cent overall percentage. The whole parties to the Protocol could reach that required percentage, *not* because of every party conform to the law but because of the action of reduction that belonged to EU. This is called "positive externalities" which mean a positive action outside our action that serves our interests, resulting in sustaining the environment at the status quo if not exceeding the equilibrium. However, the positive externalities come from other states parties to a treaty while the other group of states parties can also benefit in the sense that they do *not* need to conform to the law. And if such positive externalities are only at the equilibrium – the bottom line, meaning that the environment condition remains the same, neither improved nor degraded. It does not significantly reflect that the treaty is legally effective due to that certain states have *not* changed their behaviours as to the treaty provisions.

## **2.3 Immanuel Kant's Transformation of the Prisoners' Dilemma Game**

Different from the situation under the Prisoners' Dilemma Game is that under Kant's equilibrium, when both states (both prisoners of the Prisoners' Dilemma Game) choose preserving the PGRs, both states gain equal payoff. Whereas, when both states choose destroying PGRs, both states gain none of payoff or nothing. There may be an argument: why do those 2 states have to take action in compliance with the law while doing nothing does not bring about any loss. This study is of the contention that although in doing nothing to conform to the law, states can remain status quo, *states all together lose an opportunity to receive more payoff*, or to receive more benefit; and most importantly, in compliance with international environmental law, each state can gain more payoff in equal quantity for each

than that in the state of doing nothing. Would it be better in the long run if states *collectively* choose to cooperate and comply with a treaty?

In Kant's deontological liberalism, the right comes before the good. The "right" does not always convey to the connotation of being morally good. Here, it can *also* be the right derived from being concerned about one's own self-interests. Additionally, under such Kantian treaty, the states would come to realization that the more they together comply with the treaty the more self-interests; they realize that the benefit will be eventually gained as a result of the "rights" granted under the treaty. They exercise such "rights" through implementing the treaty. Simultaneously, whilst the states parties enjoy their "rights" that come with the gains the treaty provides, they also implement the treaty. By which, the gain for the diversity of PGRs under the treaty is also obtained. It is a collective behaviour and change that result in a collective gain for the states' self-interests and the environment. However, there is another controlled factor to bear in mind for Kant's transformation to a Kantian regulatory regime of ABS of PGRs. Such factor is related to how to make states parties Kantian from the beginning. The point here is not how to make states realize their self-interests, *but*, how to make them all have the same point of view toward this logic of Kant's.

True is that some people obey the law, not because they want benefit in return; they do as they feel it is right to do and the law is as it is.<sup>82</sup> However, some other people are not. There must be a rule to guide people who do not follow Kant's maxim to follow it. If such Kantian action is required under the law; for instance, punishment has to be set for no action being taken due to that we cannot wait for people to think of any crime is something requiring the duty to avoid but we employ punishment for directing people's behaviour. That does not always make sense for international law which is based on a different standing from domestic laws' and that is not the case here. Like good people, certain states are morally good in the sense of Kant's maxim on Natural Law; they act because of a sense of duty despite lack of punishment. Some states cannot comply with the law out of duty but this is not a problem to this study's legal framework which does not require states to behave in the sense of duty. Rather, this study's legal framework requires every state to realise firstly that it has its own self-interests, secondly, that to behave in participating and being signatory to a treaty, it does *not* need a feeling of duty under Kant's Categorical Imperative but it needs Kant's Deontological Liberalism stipulating that its self-interest is its "right," that it must know its self-interest.

Here, we can also perceive that Kant's transformation equilibrium has the similar rationality to Logic of Consequences, which is actually based on the same ground as the realist perspective's. In applying this practical Logic, states have to consider whether the "consequences" of such membership can bring any gain that meets their self-interests. Afterwards, in implementing the environmental legal instrument, such states parties gradually change their behaviours to those imposed by the law. Through this by and by, the states

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<sup>82</sup> This is Categorical Imperative that Kant teaches. If you do X because you want Y, that is not right. What is right is to do X because X is X and your action is duty towards X. This is Kant's maxim on universal law and Natural Law.

would come to realise that those obligations are not merely laws but the universal norms appropriately respected, this is how Logic of Appropriateness can be realized in the end.

## **2.4 The Equilibria of the Trade Game Theory**

### **2.4.1 The Equilibrium of the Theory of Free Trade Game**

Those non-signatories obtain benefit from the preservation of diversity of PGRs as a positive externality resulted from those signatories' compliance with treaty provision. The non-signatories are free from the obligations under any MET; hence, they are called "free riders."<sup>83</sup> This study argues that inclusion of those free riders in certain METs has to be made otherwise the point of treaty-making and treaty implementation would be useless. Such treaty has to be regional as against the fact that it may be impossible to include all states in the world within the same commitment with no free riders left out, hence, the fewer signatories the more effective the regime. It is fortunate that ASEAN state members are few (10 states) compared to those existing in the world. Accordingly, there is possibility to include all the ASEAN members under a regional treaty based on this study's legal framework.

The model developed under the TG explains that the businesses or actors are directed to make decisions whether or not, in their production and manufacture, they will be committed themselves to their government's legislation which incurs them the cost of sustaining PGRs. Under the theory of TG, the harm caused by ASEAN state members to this study's legal framework to PGRs is variable, meaning that the ASEAN state members need to consider whether or not they allow their businesses *not* to conserve PGRs. This, in other words, affects the decision-making of a state. It can be inferred that in case a state chooses to ratify the treaty based on this legal framework, its businesses and stakeholders are required to use substitutes for their production and breeding, relying on more technological means which incur costs. The businesses may opt to reduce their output to save costs by dropping their output level instead of relying on costly additional processes required by the law. What is more, the other peer businesses would increase their output. It has to be stated that in this scenario, the businesses in question take output as their strategic substitute.

Inevitably speaking, the cause of all this trouble is because *not all* states, where these businesses reside, are signatories to the treaty. This aftermath of these scenarios is known as "Trade Leakage," precipitating the environment due to its effect lending support to free riding. This sheds light on the fact that not every region or country enjoys the common contention that free trade fits all since appropriate economic activities and policies depend on context and time<sup>84</sup>; the policies suitable to developed countries may not be so to the context of developing or underdeveloped countries.<sup>85</sup> Singapore, one of ASEAN member states,

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<sup>83</sup> According to international environmental law, a term of "free rider" means a state, or actor that receive benefit from protection of the environment even though it does nothing in protecting the environment or observing the law.

<sup>84</sup> as supported by the theoretical contentions of the Developmentalist Tradition (or known as Mercantilist in the 17<sup>th</sup> – 18<sup>th</sup> Centuries) of Economics.

<sup>85</sup> Ha-Joong Chang, *Economics: The User's Guide*, Penguin Books Ltd, London, England, 2014, pp. 133 – 138.

epitomizes this theory. More or less regarded as economically successful compared to the other ASEAN members, Singapore uniquely employs a combination of the free market/trade and socialist policies since it must have adopted the Developmentalists' theory, understanding that free trade alone would not be of help.

#### 2.4.2 The Equilibrium of the Theory of Trade Game with Trade Restrictions<sup>86</sup>

If we make clear the previous equilibrium, we will see that it is a situation where states *trade with one another freely*; this results in the payoff of the non-signatories being higher than that of the signatories. As already seen, such trade leakage has an impact in reduction of the benefits and incentives because it reduces signatories' capability to comply with the obligation to conserve biodiversity of PGRs. This additionally influences other states in choosing not to protect the environment. However, we may assume that states may choose to protect the environment on the condition that there are many states playing their part collectively in METs (recall Kant's transformation). What needs to be done is that we have to solve the problem of the payoffs of the signatory states being lower than those of the non-signatory states so that we will obtain the final formula for the legal framework to reverse the fact of only there being merely a greater number of the signatories to the treaty *but* no ensuring effectiveness of the treaty.

Unlike that in the free trade situation, here is necessity to build the condition that the signatory and non-signatory states have trade restrictions between their trades. Trade restrictions may superficially seem like barriers, yet, it can do good to an environmental treaty such as having been employed before by Kyoto Protocol for the global climate change regime. This can be explained; indeed, when the number of the states signing any treaty is low, the other states prefer to stay non-committal. In contrast, provided that the number of the signatories turns to be greater than the number of the non-signatories due to trade restrictions that fence those non-signatories out of the benefit of free trade bestowed to the group of the signatories, many states left out and not signing are inclined to commence considering to be part of a treaty. Under this scenario – where *most states* are *signatories* to a treaty, meaning that there is a high participation in a treaty – has it been seen that it is these few states, the non-signatories, which suffer enormously. In brief, the gist of this equilibrium, that will be benefiting both the effectiveness of a self-enforcing treaty, is that we have to ensure that *all or most states* in ASEAN are the parties to a treaty based on this study's legal framework for ABS of PGRs with the mechanism of trade restriction.

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<sup>86</sup> This theory used to be empirically workable in the area of international regulation on ozone depletion or Montreal Protocol, with its several amendments from 1990 – 2016, namely, the London Amendment 1990, the Copenhagen Amendment 1992, the Montreal Amendment 1997, Beijing Amendment 1999 and Kigali Amendment 2016.

## **2.5 The Limit of Trade Restrictions and its Solution**

With realization of all states in the international community being asymmetric, there may be a question of whether it is possible to encourage its equilibrium used in this legal framework. This study is of the view that there is no total solution to anything. Some minor imperfections must be found in every aspect. The limit of the equilibrium under the TG with trade restrictions can be solved with that ASEAN is a small region; state members would be feeling comfortable to be signatories to the treaty rather than being left out with a barrier of trade. Trade restrictions may be problematic for the case of a region with large domestic markets like China and India; and given that, this can be solved by a Multilateral Fund.<sup>87</sup> Another thing is when it comes to fairness, trade restrictions may not always guarantee the good for all states, especially, the developing countries. Should some states – poor countries, for instance – that are not affected from the derogation of the environment, be required to play abate? And sometimes, states can choose to follow their own principles, which can be against the environmental ones.<sup>88</sup> To this concern, this study proposes to establish the framework's central funding body for side payments. Unlike Montreal Protocol, the structure of this legal framework is of a character of a regional-scale legal instrument, thus not resembling in those large METs; moreover, the ASEAN states are more or less within quite a similar regional condition.

## **3. ASEAN Legal Framework Established by the Self-Enforcing Treaty Approach with Constructivism and The Game Theory Equilibria as Constructs and Mechanisms**

With the equilibrium of Kant's Transformation of Prisoners' Dilemma with trade restrictions applied, this study's legal framework can be a framework for an environmental treaty with self-enforcement, a treaty with its own mechanisms and no protocols to follow as opposed to the convention-protocol approach, and importantly, a treaty that can be established by the states' cooperation in treaty-making. Indeed, the first equilibrium under the Prisoners' Dilemma Game is a deadlock in most treaty-making situations due to states retaining their interests. The Zero Sum Game Theory lets us look in more detail in the case of a multilateral treaty where there are 2 groups of signatories; the first complies with the treaty while the second does not. It can happen at times when the total abatement amount expected by the treaty can be reached but it does not do any good to the environment due to one being gained, the other lost; giving rise to the total amount of abatement that is nothing to do with effective legal enforcement. Kant's equilibrium can solve all that; however, the collective action for making possible the Kantian transformation of the deadlock has to be taken under a specially controlled condition. The Free Trade Theory sees Kantian transformational equilibrium adapted into realities; nevertheless, that states can trade freely does not guarantee the payoffs for signatories, meaning that temptation that states will opt to be non-signatories still exists. To eradicate such temptation, the last equilibrium, the Trade Theory with Trade Restrictions has been consulted and regarded as effectively applicable because it, with trade

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<sup>87</sup> Scott Barrett, *Environment and Statecraft*, Oxford University Press, 2003, p. 320.

<sup>88</sup> *Ibid.*, p. 325.

restrictions as a controlled condition, can most efficiently render the payoffs of signatories higher than those of non-signatories and eventually makes a ground for a self-enforcing treaty for this study's legal framework.

Whilst Kant's equilibrium with trade restrictions can make a collective change in terms of making possible cooperation in treaty-making of this Framework Treaty, this study's legal framework could be considered as relying on the self-enforcing treaty approach to constitute a self-enforcing Framework Treaty only when does it produce the constructs under itself as a counterbalance to the reality predominant in the international community as posited by Critical Theory. To break through such reality, this legal framework, as the author contends, requires the 2 constructs according to Constructivism to be made up as part of the legal framework. Indeed, the first construct is the norms shared among the ASEAN member states which have to be the objectives of the Framework Treaty, that is, sustaining biodiversity through conservation of PGRs. Whereas, the other one, i.e. understanding and relationships between the ASEAN member states and the Framework Treaty is constituted by establishing the provisions, relying on the concept of Logic of Consequences which forges a new identity of ASEAN member states with the normative force, that is, a force that makes behavioural change to the states in the direction to the environmental protection. The provisions as this construct has to be realist and answering the states' interests as posited by Kant's Deontological Liberalism that the "right" of states comes before the "good" of the environment; through which, Logic of Appropriateness can be abided by since what the states regard as their rights will serve the good of the environment at the end, this would be seen as the states share the common environmental value. To apply Logic of Consequences, this study equips this legal framework with mechanisms or Framework Treaty provisions that serve the states' self-interests whilst eventually lead to the good of biodiversity. In other words, whilst states are conserving PGRs for biodiversity, they are doing so with a feeling that they are gaining interests. Tangibly speaking, the Framework Treaty thus provides the compliance mechanisms in its provisions on quotas gained from initially submitting PGRs to the Gene Bank and such quotas can be traded; meanwhile, biodiversity protection is ensured through this quota system as shall be elaborated below.

#### **4. Compliance Mechanisms: Ensuring Equal Access to and Fair Benefit Sharing of Plant Genetic Resources**

To open the access for all ASEAN member states to this common space of PGRs, the access system has to be carried out with equality. Moreover, after their equal access to PGRs has been established, it requires a fair system of sharing benefit from utilisation of the PGRs accessed among the member states.



## **4.1 Submission to and Conservation of Plant Genetic Resources at the Gene Bank and Quotas of Plant Genetic Resources Conserved**

### **4.1.1 Categories of Plant Genes to Be Stored**

a. Under the treaty provisions based on the legal framework, there should be a list of PGRs that are in need in different degrees: “urgent”, “average” and “normal” to collect the three different categories of plant genes with the conditions attached to certain plant genes, that is, “vulnerable” (likely to be extinct), “endangered” and “normal” respectively.

b. A state party has to clarify to the Commission of the Gene Bank, a list of its own PGRs with the names with description of plants whose genes are under which category. This responsibility may go to a ministry responsible for agriculture and/or environment of a state party.

### **4.1.2 Submission of the Conserved PGRs to the Gene Bank**

a. Submission of the preserved PGRs to the Gene Bank shall be conducted by each state party as its obligation at every point of time deemed reasonable. Such point of time shall be subject to the decision of the meeting of the body responsible for environmentally scientific research in the manner that suits the environmental conditions of the region and the earth which are transient and dependent on many factors.

b. The cost incurred, that is, the cost from shipping, any means for transfer, in the process for submission from collecting until storage at the Gene Bank stages, shall be the burden of the central funding organ under the treaty.

### **4.1.3 How Measures of Access to and Benefit Sharing of Plant Genetic Resources Stored in the Gene Bank Function**

A state party shall have the right to access to the PGRs stored at the Gene Bank only when does it submit its own plant genes to the Gene Bank. The Gene Bank shall record the quantities of the units of genes that a submitting state submits and convert them to the quotas qualified for that submitting state. When there is a need in a certain plant which may be because it is nearly extinct in the territory of a submitting state party, such state is entitled to the right to request, by application, access to such plant genes being already submitted to the Gene Bank by other states parties so that it can utilise such plant genes in need in its own territory. This is how access to the PGRs in the region can be *equally* open for all state parties as in contrast to the existing international regimes where there are a barrier of intellectual property law and the cost of royalties subject to payment to the country owning the PGRs in need.



The utilisation may be in the form of breeding or planting or experiments in the territory of the state in question. The benefit that occurs from such utilisation in that state shall be reported to the Commission of the Gene Bank under the Framework Treaty and subject to calculation for converting them into monetary value in order for deduction of the percentage as agreed by the ASEAN conference under the treaty for the funding body of the treaty. Such percentage shall be periodically set in an Annex to the treaty. This is how the benefits from utilisation of that state *fairly* contribute to the collective good of the region.

There thus should be a list of the amount of each category allowed for access since each category has different urgencies. For instance, the plant that is vulnerable or nearly extinct must have more urgency than the one at the normal condition. As such, the vulnerable category of genes should be open for access with the amount of genes larger than that of the normal category. Consequently, the monetary value of vulnerable genes should be more than that of normal ones.

#### **4.1.4 Quotas of Plant Genetic Resources Conserved**

##### **a. Determination and Acquisition of the Quotas**

There shall be a uniform standard constituted in order to determine what amount of plant genes submitted equate how many quotas a submitting state party can obtain. Furthermore, such quotas shall be calculated into their monetary value at the time of conversion into the amount of prices when a state party intends to exercise its right under the provision to make exchange of the quotas. Depositary of the records of determination and calculation of the quotas shall be the Commission of the Gene Bank.

##### **b. Redemption and Exchange of the Quotas**

i. Redemption of the Quotas for Plant Genes: A state party is entitled to redeem the quotas earned from submission to the Gene Bank for obtaining the plant genes it needs. To redeem the quotas, a state party has to submit an application with description of the plant genes in need and the reason of redemption. The number of units of plant genes that can be obtained is calculated from the number of quotas it has submitted in the first place. It is a reflection of how much contribution the state has made to the environment first; the number of genetic units gained equates the number of the quotas the state redeems.

ii. Exchange of the Quotas: Where necessary, a state party can enjoy its right to exchange the quotas. A situation likely to happen is that, for example, suppose State X has abundance of PGRs in every category and almost every plant type as this can happen to the Philippines and Malaysia where their biodiversity is higher than the others. State X regularly submits the plant genes to the Gene Bank party, meaning that it has earned the quotas at some quantities. Let us suppose that State X does not need any plant genes for utilisation possibly because there is not any danger to its own plants. Whereas, State Y submits the genes in fewer categories and less amount, compared to State X. There is urgency one day for State Y where the certain plant is endangered or needed in consumption for agriculture or medicine. State Y is thus entitled to the right to request the genes in need in the

amounts *more* than the quotas it has earned, supposed to be *less* than those of State X. In this case, State Y cannot request the same amount of genes, compared to State X. Thus, in order to assist State Y for the sake of preserving diversity of such plant genes in Y's territory by having the genes in need utilised in Y's territory, the provisions under the Framework Treaty shall legally allow State Y to request an exchange of the quotas to access to the genes in need that belong to State X by purchasing the quotas from State X. We have seen that under this situation, quotas can be converted to the money as a return for State X which will feel that participating in the environmental protection may give it some gain. Although it has not been time for it to claim for any environmental gain yet, it can still obtain some monetary benefits. Notably, this is a reflection of the theories applied in this study, i.e. Deontological Liberalism, putting the "self-interest" of states as the "right" first before the "good" of the environment whereas the environment is not harmed but simultaneously protected. We can see the win-win Nash's equilibrium under Kantian transformational formula successfully applied.

#### **4.2 Central Funding Organ and Side Payments**

A channel to supply the central funding organ with the monetary fund is through the obligation imposed on a state party to periodically contribute its monetary fund to the central funding organ established under this legal framework. Such monetary fund accumulated in the central funding organ is to be spent financially supporting states parties in the processes of conservation and submission of PGRs to the Gene Bank. Another role of the central funding organ is the matter of side payment which can be explained that in deterring developing states' non – participation, side payments make the recipients, i.e. those developing states, more inclined to participate in an MET but they reduce the payoff of the offering countries.<sup>89</sup> As learnt from Article 10 of London amendment to Montreal Protocol, imprinted by side payments, side payments are more useful when applied in asymmetry between states, deemed as the game players according to the equilibria under GT above. Put simply, the central funding organ can financially support the states parties whose financial capacity of compliance is less developed. This is because in complying the provisions, it requires states parties to use technology, incurring the cost making the payoff of the states parties with otherwise more developed capacity reduced. Thus, the fund helps maintain the incentives for the parties to cooperate. However, side payments or financial support is necessary at times; therefore, the legal mechanisms under this Framework Treaty may require linkage with the central funding body under ASEAN for support, possibly in the form of loans. It is suggested that ASEAN constitute a Multilateral Fund to make the game fairer to all the players. The side payment under this legal framework linking with the existing ASEAN funding body may be necessary. This can be considered as adjustment of obligations under a treaty.

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<sup>89</sup> Ibid., p.351.

### 4.3 Secretariat of and the Roles of the ASEAN Organs for the Framework Treaty

To make effective all these enforcement mechanisms, they are to be regulated by governing bodies. It is recommended the existing ASEAN Working Group on Nature Conservation and Biodiversity (“AWGNCB”) be upgraded as a Secretariat of this Framework Treaty whose role is to act as an administrator monitoring all the subsidiary organs, i.e. the Commission of the Gene Bank and the Central Funding Organ. Furthermore, the Secretariat of this Framework Treaty is to be in charge of keep watch on reports of the states parties’ implementation of this ASEAN Framework Treaty to ensure their domestic legislation and policies and other campaigns in promoting the understanding of the concept of the certain intrinsic value, developed by this study, through instilling their citizens with it to the extent that the governments and their people will behave in accordance with Kant’s categorical imperative<sup>90</sup>. The ASEAN Secretary-General, shall be the highest administrator with his full capacity in monitoring and assisting the Framework Treaty.

### Conclusion

Almost METs rely on the convention-protocol approach, plunging the whole international environmental treaty law into confusion. Many METs are established in a piecemeal fashion since they are intended to solve the same problems despite their establishments at different times. Consequently, we have the overlapping provisions. Within the provisions are contained the norms and principles, resulting in conflict of norms and principles, and also, of obligations imposed on the states parties between METs. Therefore, legal compliance by the states parties to those overlapping METs without contradiction cannot be ensured, potentially bringing about a breach of a treaty and an issue of law of state responsibility. Such overlapping subject matters fall under Article 30 in conjunction with Articles 49 and 51 of VCLT. Unfortunately, Article 30 of VCLT leaves a number of legal issues unresolved. Particular solutions have been consequently sought for, however leaving us merely the general rules of law to be applied for the time being. This controversy sadly jeopardizes our effort to protect the environment and biodiversity of PGRs in particular.

Kant’s Deontological Liberalism superficially seems contradictory to the general preoccupations; however, it equips this study’s legal framework with the force of positive law by means of Kant’s Transformation of the Prisoner’s Dilemma economic equilibrium, serving as the tangible side of Kant’s Deontological Liberalism in order to formulate a treaty to which is capable of forcing states to be signatories and to implement. In other words, Kant’s Transformation of Prisoners’ Dilemma equilibrium is a reflection of his Deontological Liberalism. And to make Kant’s formula workable, this study’s legal framework requires trade restrictions to be applied.

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<sup>90</sup> The findings in literature review show that these administrative bodies can be more influential than the traditional ones; for example, they can facilitate businesses’ and the private sector’s participation in enhancing or supporting the states’ implementation of the ASEAN framework.

If trade restrictions make states participate in the treaty, it is the system of quotas that makes states parties conform to the treaty. The quota system here is a product of application of Constructivism; the first construct is obviously the legal framework aim which is the shared norm for protecting biodiversity; meanwhile, the second – the understanding and relationship between the Framework Treaty and the ASEAN member states – is made up from the Framework Treaty provisions on compliance mechanisms; namely, quotas of PGRs and redemption of which together with the quota trading system. To reach for the aim under Logic of Appropriateness, which requires legitimacy in action serving the norms shared among the states, the second construct is based on Logic of Consequences, requiring the rationality to forge behavioral change. Indeed, it requires serving the states' self-interests – the reason on which the states base their action, also corresponding to Kant's Deontological Liberalism.

Through access to the PGRs in different territories in ASEAN and utilisation of the PGRs accessed, the system of quotas not only ensures diversity of PGRs in ASEAN but also allows states parties to trade quotas. This system obviously serves the states' self-interests; and more crucially, it tempts states parties to trade and acquire more quotas, meaning that they submit a large amount of PGRs to the Gene Bank which will later be accessed to by the other states parties to utilise in their territories, ultimately culminating in proliferation of PGRs in the region. As this study's legal framework is constituted under ASEAN, most certain functioning organs under the Framework Treaty are those subsidiary organs of ASEAN. Adjustment is recommended; whilst, there shall be one newly constituted organ which is the Commission of the Gene Bank.

The process of designing all these in this study's legal framework has been conducted to build a would-be regional *self-enforcing treaty* as opposed to a treaty of the convention-protocol approach. Not only does this Framework Treaty solve the legal problems caused by the existing METs under the convention-protocol approach at least within its region, but it also has the transformative force that forges behavioural change of the states, ensuring that environmental ethics has transformed states' behaviours with the effect of moving the states from the point of anthropocentrism to deep ecology where states act out of respect for intrinsic value of PGRs. This legal framework, as this author humbly contends, can be an alternative to international environmental law, supporting treaty cooperation and legal compliance for the sake of the intrinsic value inherent in the environment, to the extent that international environmental law may be legally effective and have a sustainable impact on biodiversity in ASEAN and our global environment at large.

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## Technical Efficiency of Private Clinics under Universal Coverage Scheme in Bangkok, Thailand

Pimpitcha Kangyang<sup>1</sup> and Paitoon Kraipornsak<sup>2</sup>

### Abstract

Data envelopment analysis (DEA) is one of tools of efficient measurements that focus on “Technical efficiency” which producing the maximum amount of output from a given amount of input, or alternatively producing a given output with minimum quantity of inputs. Recently, it was widely used in healthcare service studies. In Bangkok, Thailand, private clinics have become government partnership to provide the primary care service under universal coverage scheme (UC). In Thailand, there are several previous studies about technical efficient measurement in hospitals and health centers that under ministry of public health, but there is no study in private clinics under UC. The purpose of this study is to measure technical efficiency of 88 private clinics under UC in Bangkok in fiscal year 2017 by DEA using input-oriented measure. Input variables were considered 3 variables as the number of staff, operating expenses and depreciation of building and equipment expenses while output variables were considered 2 variables as the number of outpatient visits and health promotion and disease prevention visits. The result of DEA under a variable return to scale assumption showed that 84 private clinics under UC or 95.45 percent of the total units were operating at technical efficiency (VRSTE) frontier, the average of technical efficiency score is equal to 0.98 (SD=0.03). As a result, private clinics under UC can manage their own resources to provide healthcare service efficiently, the patterns of scale inefficiencies showed that only one of total private clinics under UC which is decreasing return to scale (DRS), it means percentage increase in inputs is more than percentage change in outputs, so this unit should know their situation and they should be suggested adjusting appropriate inputs further.

**Keywords:** Technical Efficiency, Data Envelopment Analysis (DEA), Private Clinics Under Universal Coverage Scheme

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## **Introduction**

The term “efficiency” refers to the best use of resources in production [1]. Data envelopment analysis (DEA) is one of tools of efficient measurements which was original concept by Farrell [2], is about the performance of organizations with more than one input. “Technical efficiency” is producing the maximum amount of output from a given amount of input, or alternatively producing a given output with minimum quantities of inputs [1]. Recently, it is wildly used in healthcare. It can evaluate the technical efficiency of health services by focusing on operation that on its production frontier.

In Bangkok, Thailand, private clinics have become government partnership to provide the primary care service under universal coverage scheme (UC) [3]. They are supported the budgets from the National Health Security Office (NHSO) with the permission of the National Health Security Commission's Notification on Qualifications, Standards, Service Units and Network of Service Units including the network of service units, the Health Insurance Regulation dated 27th of June, 2001, the approval of the location of the National Health Insurance Sub-Committee Bangkok.

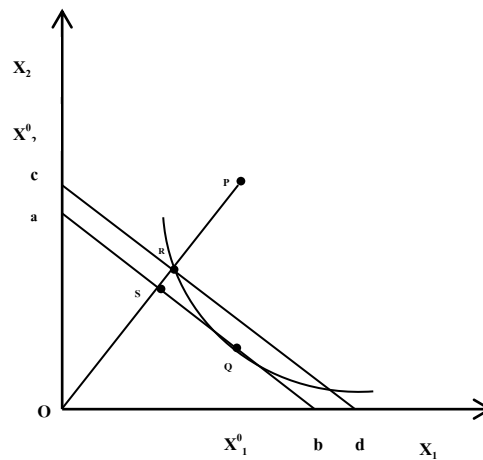
It is extremely challenging task for private health agencies to manage their own available resources to achieve minimum cost and maximum product of healthcare services under NHSO's qualifications and standards. In Thailand, there are several previous studies about efficient measurement in hospitals and sub-district health centers under UC that provide by Ministry of Public Health (MoPH), but there is lack of study in private clinics.

This study aims to measure technical efficiency of 88 private clinics under UC in Bangkok in fiscal year 2017 using input-oriented measure of data envelopment analysis (DEA) in order to describe the level of technical efficiency score of private clinics under UC.

## **Method**

The term of “efficiency” refers to the best use of resources in production [1]. The original efficiency measurement concept was begun by Farrell [2] which the concept of performance measurement of organizations with more than one input. Production efficiency or economic efficiency can be divided into two types; technical efficiency and allocative efficiency. Technical efficiency refers to the efficiency of an organization that produces the highest output by given input level or performance of the organization using the least production inputs by given output level while allocative efficiency refers to the efficiency of an organization in term of choosing the lowest cost input for production at a given level of output and price of input. When the technical efficiency and allocative efficiency are combined, it can be called “overall efficiency” which refers to it operates its cost or revenue frontier [1].

These efficiency concepts can be explain by the example case of single output ( $y$ ) with two inputs  $X_1$  and  $X_2$ . The production frontier or production function shows the maximum output by given combined inputs;  $y = f(X_1, X_2)$ .



**Figure 1:** Farrell's measurement of efficiency

In figure 1 shows the technical efficiency that use combined inputs to produce a unit of output. Suppose that the production point is P with using combined inputs as  $X_1^0$  and  $X_2^0$ , at point P is inefficiency because the efficient unit isoquant is  $y = 1$  (output  $y = 1$ ), so the production point could be R. The technical efficiency, TE at point P can be calculated as  $TE = OR/OP$ . Normally the value should be between 0 and 1 ( $0 < TE \leq 1$ ). If TE is equal to 1, it refers that the firm is technical efficiency and produce on the efficient unit isoquant. When the TE is less than 1, it refers to technical inefficiency. In figure 1, is also illustrating allocative efficiency, by iso-cost line as ab. At the optimal mix-inputs to produce  $y = 1$  is Q, when the technical efficiency at point P, the quantity of using the mix-inputs is point R, its cost on iso-cost cd which higher than minimum cost (ab), it should move to point S which is on minimum cost. So that the allocative efficiency (AE) can be measured by  $AE = OS/OR$  which the value should be between 0 and 1 ( $0 < AE \leq 1$ ). The overall efficiency (OE) can be measured by considering the result of technical efficiency and allocative efficiency;  $OE = TE/AE = OR/OP \times OS/OR$  which the value should be between 0 and 1 ( $0 < OE \leq 1$ ).

The efficient measurement is about production or cost frontier, the frontier is formed by most efficiency among the firms which use the least input to produce given level of output or use given level of input to produce highest output. The firms which on the frontier of the most efficiency can be identified the best performers, there is different efficiency in each period, is related with changing in technology.

The efficient measurement can be divided by considering whether it is parametric or non- parametric and it is deterministic or stochastic. The parametric method assumes the efficient frontier by specific function while the non-parametric is not. The deterministic method assumes the inefficiency by distance of unit from its frontier whereas stochastic method by random error. The methods show in table 1.

**Table 1:** Summarized the methods of efficient measurement

| Type                 | Parametric   | Non-parametric   |
|----------------------|--|--|
| <b>Deterministic</b> | <ul style="list-style-type: none"> <li>- Parametric mathematical programming</li> <li>- Deterministic (econometric) frontier analysis</li> </ul> | <ul style="list-style-type: none"> <li>- Data envelopment analysis (DEA)</li> </ul>      |
| <b>stochastic</b>    | <ul style="list-style-type: none"> <li>- Stochastic (econometric) frontier analysis (SFA)</li> </ul>   | <ul style="list-style-type: none"> <li>- Stochastic data envelopment analysis</li> </ul> |

## Data envelopment analysis

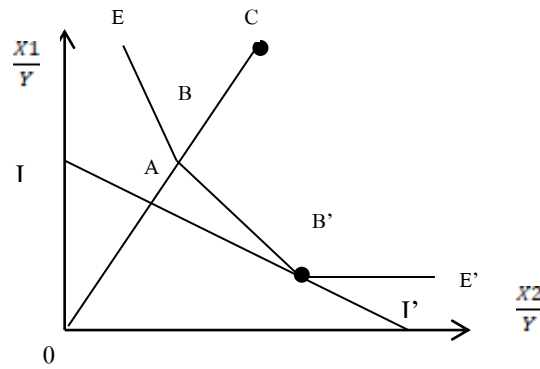
Data envelopment analysis (DEA) is efficient measurement method proposed by Charnes, Cooper and Rhodes [4], is non-parametric mathematical method for estimating production or cost frontier and using linear programming to determine the efficiency index. This method can measure efficiency of unit which is called decision-making units (DMUs) that use multiple inputs and outputs. The inputs and outputs of each unit should be homogenous.

The efficiency index is calculated by ratio between weight outputs and weight inputs, the mix inputs and outputs should be weighted by assumed weight which is proper for linear programming. The DEA create the efficient frontier of DMUs, assume the value of DMUs which on the efficient frontier is equal to 100% or 1, other DMUs which are below the frontier that the efficiency index which less than 100% or 1 can calculated by the ration of distance of unit from its frontier. According to the concept, it is the relative efficiency measurement which comparing between the DMUs; it may not be a best performance value.

The advantages of this method; it can be used in mix inputs and outputs without the required the value of weight. In addition, the result of analysis is show the in poor performance values that is guideline for development in term of increasing operational efficiency and reducing costs. In contrast, the disadvantages are the unit which is best practice may not be a real best performer because it cannot identify the relationship between outputs and inputs that indicates efficiency and it cannot solve the problem of random error.

## Input-oriented measure

The input-oriented measure has been explained by Farrell's conceptual framework which considered in the simple case that producing production  $y$  with using two inputs ( $x_1$ ,  $x_2$ ); assume producing of output units under the Constant Returns to Scale (CRS). The calculation of efficiency index follows figure2 [5].



**Figure 2:** Calculating efficiency score by input-oriented measure

Since the assumption of the CRS, the output line is equal to 1 unit or the fully efficient firm is represented by the line  $EE'$  (Figure 1). If this unit uses the proportion of inputs at point  $C$  to produce one unit, the inefficiency of this unit can be measured by the  $BC$ , which is equal to the proportion of inputs ( $x_1, x_2$ ) that can be reduced without impact on yield. If measured in percentages, it is equal to  $\frac{BC}{OC}$ . Therefore, the technical efficiency scores calculated on the factor of production. An input-oriented technical efficiency score ( $TE_I$ ) is required in this case.

$$TE_I = \frac{BC}{OC} \quad (1)$$

The  $TE_I$  value is in the range of 0-1, where the close score of 1 means the higher technical unit of production. For the proportion of inputs used at other points on the same line of output or unit isoquant, such as  $B'$  or  $B$ , is  $TE_I = 1$ . In case of input-oriented allocative efficiency score ( $AE_I$ ) or comparison of price between inputs of production ( $II'$ ) in figure 1, it can be calculated by formula 2.

$$AE_I = \frac{OA}{OB} \quad (2)$$

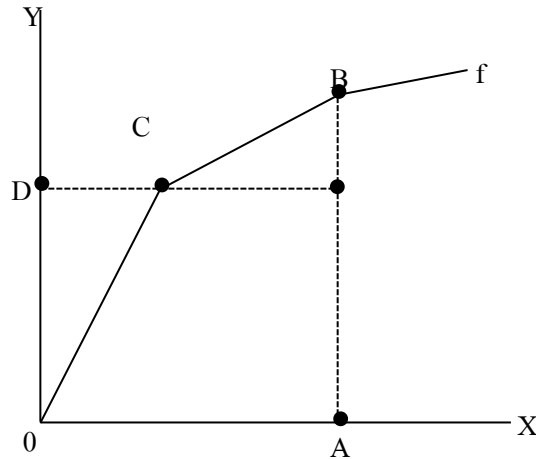
Therefore, the economic efficiency scores for the factor of production (Input-Oriented Economic Efficiency).

$$EE_I = TE_I \times AE_I = \frac{BC}{OC} \times \frac{OA}{OB} \quad (3)$$

It is interesting to note that the performance scores calculated according to equations (1), (2) and (3) are in the range of 0 to 1.

## Output oriented measure

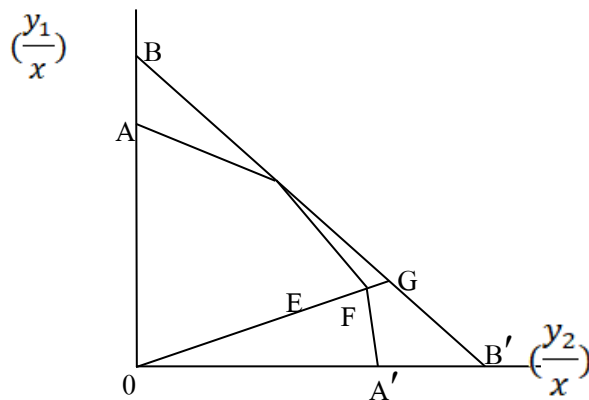
Output-oriented measure is aimed to calculate for defining the proportion of output that each DMU can produce with the same level of production. The concept can be explained in the following figure3.



**Figure 3:** Calculating efficiency score by output-oriented measure

In figure3, the DMU produces the product y with using a single input [6] and assigns function of production as f [6]. If the DMU is producing at the Z point which is lower than the efficiency level. The output efficiency can be calculated by  $\frac{AZ}{AB}$  whereas the input efficiency can be calculated by  $\frac{DC}{DZ}$ .

In the case the DMU produces two types of goods ( $y_1$  and  $y_2$ ) with the only input [6]. Efficiency index is under the assumption of constant returns to scale (CRS) can be considered in figure 4.



**Figure 4:** Calculating efficiency score by input-oriented measure (2 inputs)

In figure 4, the unit production possibility frontier is line AA'. At point E is inefficient level that can be measured by EF, therefore, the output-oriented technical efficiency score ( $TE_0$ ) can be calculated by;

$$TE_0 = 1 - \frac{EF}{OF} = \frac{OE}{OF} \quad (4)$$

For output-oriented allocative efficiency score ( $AE_0$ ) can be calculated by;

$$AE_0 = \frac{OF}{OG} \quad (5)$$

Output-oriented economic efficiency ( $EE_0$ ) can be calculated by;

$$EE_0 = TE_0 \times AE_0 = \frac{OE}{OF} \times \frac{OF}{OG} = \frac{OE}{OG} \quad (6)$$

It is observed that the performance scores calculated according to equations (4), (5) and (6) are in the range of 0 to 1.

## Applications of DEA in health care

Recently, DEA is widely used in healthcare. DEA can evaluate the technical efficiency of health services by focusing on operation that on its production frontier. DEA can handle several inputs and outputs, most studies selected by data availability. There are several alternatives to define the output. Some studies use healthcare activities (e.g. visits performed, examinations provided) while some studies use quality indicators. There are three main categories for defining the input: labour, capital, and consumable resources. These variables can be measured in physical unit or in monetary terms, as an overall aggregate measure or a set of disaggregated measures [7].

In 2007, Masiye [6] used the DEA technique to measure the performance of hospitals. The study of investigating health system performance: an application of data envelopment analysis to Zambian hospitals focus on 30 hospitals, oriented-inputs consist of total cost excluding personnel costs, the number of doctors, the number of other medical personnel (including pharmacists, nurses, medical technicians and radiologists), and the number of other personnel while oriented-outputs consist of outpatient visits, the number of inpatient days, the number of mother and child care services, the number of surgical laboratory and radiation. The results of this study showed efficiency of hospitals operated at 67% level, only 40 hospitals on the efficiency frontier. In addition, the size of hospital and the number of factors were not appropriate, so that makes these hospitals ineffective.

Zere and colleagues [8] used DEA techniques to measure technical performance of 30 district hospitals. The model consists of three inputs as total cost, number of beds and the number of nurses whereas the outputs are the number of outpatient and the number of inpatient day. The results show that the average technical efficiency was less than 75%, the number of hospital on the frontier is less than half of DMUs.

Matthew Forbes, Philip Harslett, Ilias Mastoris and Leonora Risse studied in measuring the technical efficiency of public and private hospitals in Australia [9], it is concerned on 459 acute hospitals in three years since 2003 to 2006. The inputs of analysis consist of staff (e.g. nurses, pathologists, radiologists, allied staff, domestic staff and administrative staff), medical and surgical supplies, pharmaceutical supplies, and number of bed. The outputs consist of two parts; admitted patient services (e.g. acute separations, pregnancy and neonate separations, mental and alcohol separations and other separations) and non-admitted patient services (e.g. accident and emergency services, allied health, dental and other outpatient services, mental, alcohol and psychiatric services, dialysis and endoscopy, diagnostic (pathology and radiology) services and community services, district nursing and other outreach services. The results show that 90 % of the examples are operating at efficiency level

In Thailand there is study applied DEA in hospital. Puenpatom and Rosenman [10] had studied provincial hospital of Thailand during the implementation of the Universal Coverage Scheme policy. The targets of this study are 92 provincial hospitals and general hospitals. The outputs consist of the number of times inpatient, number of other cases, the number of surgical outpatient and number of non-surgical outpatient. The inputs consist of the number of bed, the number of physician, the number of nurse, the number of dentist and pharmacist and the number of other personnel. The results show that the hospitals have higher technical efficiency.

Valdmanis, Kumanarayake and Lertiendumrong [11] conducted a study of service capabilities of public hospitals, for the poor and non-poor. The study was conducted in 1999 and DEA output-based analysis was used to calculate congestion index and plant capacity utilization. The output variables are outpatient outcomes for poor, number of outcomes, the number of in-patient cases adjusted by the relative weight for the poor and number of in-patients adjusted for relative non-poor. The input variables are the number of beds, the number of doctors, the number of nurses, the number of other staff, costs of compensation, drug costs and other operating expenses. The study found that increasing the number of services provided to poor patients did not reduce the number of services provided to patients. The hospital has almost fully provided services. The service can be increased about 5%.

Pattamsiriwat studied the efficacy and cost of the hospital office of the permanent secretary, Ministry of Public Health in the financial sector finance research program evaluating the impact of universal health care coverage on hospital finance [12]. The study was based on the annual hospital financial report, the input variables are the number of patients, the number of outpatients and average relative weight while input variables are salaries and wages, compensation, service costs, number of beds, and number of personnel. The target of 23 center hospitals, 58 general hospitals and 624 community hospitals, large community hospital (over 60 beds), medium-sized community hospitals (31-60 beds), and small community hospitals (30 beds). The average efficiency of center hospitals, general hospital and community hospitals are 0.94, 0.86, 0.85, respectively.



In addition, there was study in health sub-district offices by Pattamsiriwat [13]; the case study of cost efficiency among 246 health sub-district offices in 12 provinces, focus on health sub-district offices based on 246 units located in 12 provinces. The outputs consist of 4 variables and the inputs consist of 3 variables inclusive of wages and salaries, compensation to officers, and operating expenses. It is found 45 units lied on the cost frontier represented 18 percent of total units; in most cases, efficiency scores (DEA, VRS assumption) range from 0.60 to 0.75 and averaged to 0.69.

## **Research Methodology**

### **Research design**

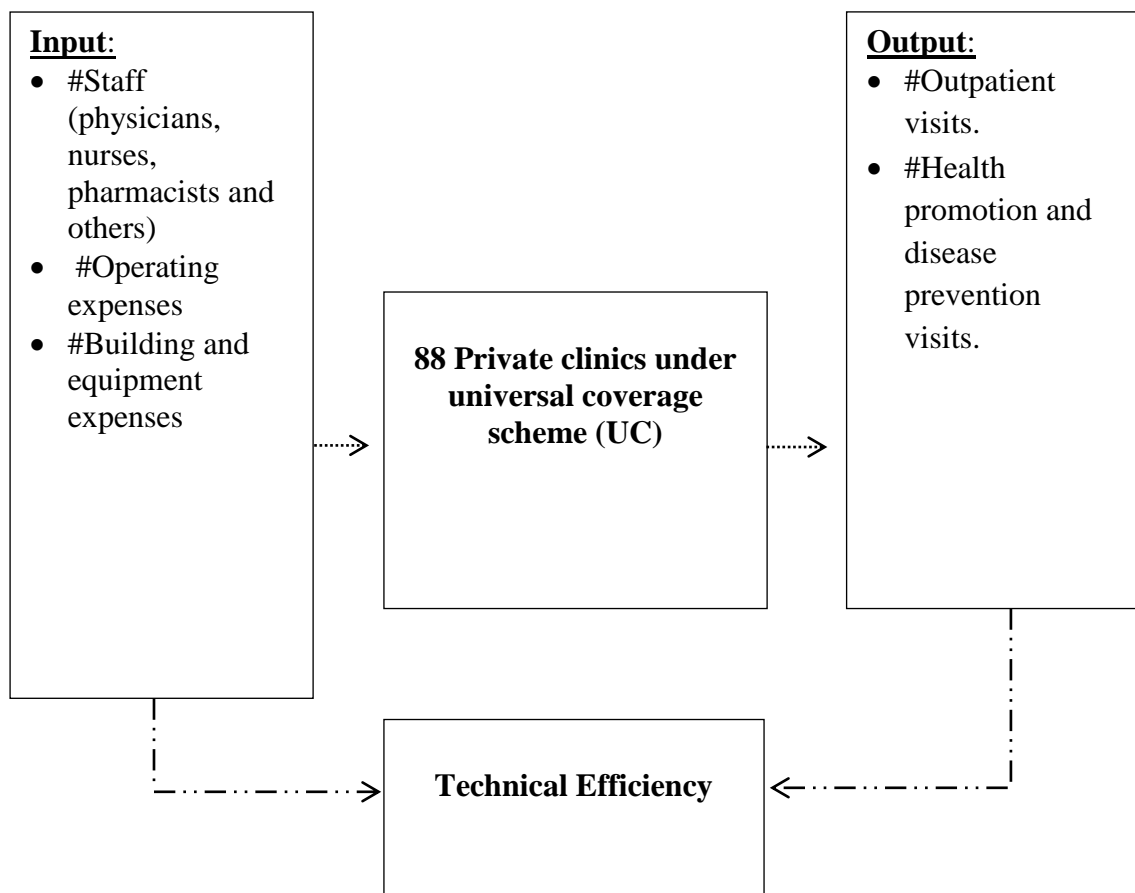
This study is measuring of technical efficiency using non-parametric mathematical approach of data envelopment analysis (DEA) with input-oriented measure, Input variables were considered three variables as staff, operating expenses and depreciation of building and equipment expenses while output variables were considered two variables as the number of outpatient visits and health promotion and disease prevention visits. This is cross-sectional study, the secondary data were collected in fiscal year 2017 (October, 2016- November, 2017), the source is National Health Security Office [14].

### **Target and population**

This study focuses on 88 private clinics which provide primary care under Universal Coverage Scheme (UC) in fiscal year 2017. In fact, the population or the total number of private clinics in Bangkok which registered in Universal Coverage Scheme (UC) system is equal to 165 units, but some private clinics are eliminated from this study because their data are not completed especially the data of the number of staff which need to be used for DEA analysis. Decision making units (DMUs) of this study are 88 DMUs.

## **Conceptual framework**

The technical efficiency of private clinics under Universal Coverage Scheme (UC) is measured by data envelopment analysis (DEA) using input-orientated model. The inputs are considered three variables as the number of staff, operating expenses and building and equipment expenses while outputs are considered two variables as the number of outpatient visits and the number of health promotion and disease prevention visits. The results of DEA will show the three associated efficiency scores consist of overall technical efficiency or technical efficiency under a constant return to scale assumption (TECRS) scores, pure technical efficiency or technical under a variable return to scale assumption (TEVRS) and scale efficiency (SE) scores. DEA will also show the patterns of scale inefficiencies which are increasing return to scale (IRS) and decreasing return to scale (DRS).



**Figure 5:** Measuring of technical efficiency with data envelopment analysis (DEA)

## Data and definition of variables

The study use secondary data of cross sectional data of private clinics under universal coverage scheme (UC) in fiscal year 2017 (October, 2016 - November, 2017) from National Health Security Office (NHSO). There are two sources; public online database and non-public online database of NHSO.

## Data of measuring of technical efficiency with data envelopment analysis (DEA)

Measuring of technical efficiency with data envelopment analysis (DEA) consists of input variables and output variables. These variables support the theory of DEA analysis that described in the literature.

Input variables are considered three variables; staff, operating expenses and building and equipment expense. These input variables as proxy for three main input categories; labour, consumable resources and capital of private clinics following;

1. Number of staff as proxy for labour
2. Amount of operating expenses as proxy for consumable resources
3. Amount of building and equipment expenses as proxy for capital

Output variables are concerned on primary healthcare services including;

1. Outpatient visits
2. Health promotion and disease prevention visits.

**Table 2:** Defination of input variables

| Variable                                   | Category                | Operational definition  | Unit   | Source                       |
|--|-------------------------|---|--------|------------------------------|
| <b>Input variable</b>                      |                         |   |        |                              |
| <b>Number of staff as proxy for labour</b> | Physicians              | Number of doctors who graduate any faculty or school of medicine or dental and are licensed in the country as a medical doctor or dental doctors in private clinic (both specialists and general practitioners) | Person | Public online data base [14] |
|  | Nurses                  | The number of nurses who have completed the program of nursing and are licensed in the country as a nurse.  | Person | Public online data base [14] |
|  | Pharmaceutical staff    | The number of pharmacist who have completed the program of pharmaceutical and are licensed in the country as a pharmacist and pharmaceutical staff who work as pharmaceutical officer                           | Person | Public online data base [14] |
|  | Health supporting staff | The number of other medical staff of who graduate in bachelor's degree in health science or relative health care service  | Person | Public online data base [14] |

| Variable  | Category   | Operational definition  | Unit            | Source                           |
|---|--|---|-----------------|----------------------------------|
| <b>Amount of operating expenses as proxy for consumable resources</b> | Amount of operating expenses                                 | The expenses on outpatient service and health promotion and disease prevention activities including consumable resources (e.g. medical and pharmaceutical supplies, administration and clerical services, housekeeping, and repairs and maintenance of private clinics. | Monetary (Bath) | Public online data base [14]     |
| <b>Amount of building and equipment expenses as proxy for capital</b> | Amount of depreciated on of buildings and equipment expenses | The expenses on compensation of depreciation of buildings and equipment.  | Monetary (Bath) | Public online data base [14]     |
| <b>Output variables</b>   |  |   |                 |                                  |
| <b>Primary healthcare services</b>                                    | Outpatient visits  | The number of outpatient visits that private clinics report to NHSO   | Visit           | Non-public online data base [14] |
|   | Health promotion and disease prevention visits               | The number of health promotion and disease prevention visits that medical clinics report to NHSO  | Visit           | Non-public online data base [14] |

\* Operating expenses are excluded wage and salary of staff of private clinics

## Result

### General description of the input and output variables

**Table 3:** Descriptive statistics of input and output variables

|  | Mean         | Median       | Maximum       | Minimum    | S.D.         |
|--|--------------|--------------|---------------|------------|--------------|
| <b>Inputs</b>                                    |              |              |               |            |              |
| Physician  | 1.64         | 1.50         | 4.00          | 1.00       | 0.54         |
| Nurse  | 1.18         | 1.00         | 3.00          | 1.00       | 0.31         |
| Pharmaceutical Staff                             | 2.72         | 2.50         | 4.50          | 1.50       | 0.56         |
| Health Supporting Staff                          | 5.82         | 6.00         | 13.00         | 1.00       | 1.53         |
| Operating expenses                               | 5,327,782.17 | 4,792,471.94 | 27,859,422.40 | 120,615.50 | 2,556,578.33 |
| Depreciation of buildings and equipment expenses | 827,416.75   | 802,568.39   | 1,597,902.99  | 408,441.83 | 125,492.42   |
| <b>Outputs</b>                                   |              |              |               |            |              |
| Outpatient visits                                | 21,627.41    | 21,529.00    | 48,345.00     | 3,993.00   | 6,698.95     |
| Health promotion and disease prevention visits   | 9,100.18     | 7,432.00     | 26,948.00     | 2,177.00   | 4,010.33     |

The table 3 shows the average of inputs of staff including physician, nurse pharmaceutical staff and supporting staff is equal to 1.64, 1.18, 2.72 and 5.82 respectively with standard deviation (S.D.) of 0.54, 0.31, 0.56 and 1.53 respectively. It implied that normally the number of physician and nurse of the private clinics is less than 2 while the pharmaceutical staff which including pharmacist and pharmaceutical staff is less than 3 and supporting staff (other staff) is less than 6.

The average of operating expenses is equal to 5,327,782.17 baht with standard deviation (S.D.) of 2,556,578.33 while depreciation of buildings and equipment expenses is equal to 827,416.75 with standard deviation (S.D.) of 125,492.42.

The average of outpatient visit is equal to 21,627.41 visits with standard deviation (S.D.) of 6,698.95 while the average of health promotion and disease prevention visit is equal to 9,100.18 visits with standard deviation (S.D.) of 4,010.33. It showed that the number of outpatient visits more than health promotion and disease prevention visits.

**Table 4:** Descriptive statistics of type of clinics

| Type of clinic     | Count (unit) | Percentage    |
|--------------------|--------------|---------------|
| Non-united clinics | 73           | 82.95         |
| United clinics     | 15           | 17.05         |
| <b>Total</b>       | <b>88</b>    | <b>100.00</b> |

Table 4 shows the statistics of type of clinics, the total of 88 private clinics under Universal Coverage Scheme (UC) can be divided by two types as united clinic and non-united clinic. A united clinic is healthcare service that can provide at least two treatments of dentistry, midwifery, physical therapy, medical laboratorial technology or Thai traditional medicine. A non-united clinic is a general clinic which does not have several treatments. The number of non-united clinics is higher than united clinic. There are united clinics as 15 units; it can be calculated as 17.05 percent of total of private clinics while non-united clinics as 73 units; it can be calculated as 82.95 percent of total of private clinics as follows;

**Table 5:** Descriptive statistics of location of clinics

| Location          | Count (unit) | Percentage    |
|-------------------|--------------|---------------|
| Inner part        | 17           | 19.32         |
| Urban fringe part | 44           | 50.00         |
| Suburb part       | 27           | 30.68         |
| <b>Total</b>      | <b>88</b>    | <b>100.00</b> |

Table 5 shows the statistics of location of clinics, according to the area of Bangkok can be divided by three parts inner part, urban fringe part and suburb part [15]. Most of private clinics are in urban fringe part as 44 units; it can be calculated as 50.00 percent of total of private clinics. In suburb part, there are 27 units; it can be calculated as 30.68 percent of total of private clinics. The least number is in suburb part as 17 units; it can be calculated as 19.32 percent of total of private clinics.

## Descriptive statistics of technical and scale efficiency scores

The measuring of technical efficiency with data envelopment analysis (DEA) of 88 private clinics under Universal Coverage Scheme (UC) using DEAP version 2.1 software package developed by T.Coelli (1996). The results of DEA with input oriented assumption show overall technical efficiency or technical efficiency under a constant return to scale assumption (TECRS) scores, pure technical efficiency or technical efficiency under a variable return to scale assumption (TEVRS) scores and scale efficiency (SE) scores as Table 6 follow;

**Table 6:** Descriptive statistics for CRSTE, VRSTE and SE

| TE      | Mean | Median | Maximum | Minimum | S.D. |
|---------|------|--------|---------|---------|------|
| CRSTE*  | 0.82 | 0.86   | 1.00    | 0.35    | 0.15 |
| VRSTE** | 0.98 | 1.00   | 1.00    | 0.56    | 0.03 |
| SE***   | 0.84 | 0.87   | 1.00    | 0.35    | 0.13 |

\* Technical efficiency score under a constant return to scale assumption

\*\* Pure technical efficiency score or technical efficiency score under a variable return to scale assumption

\*\*\* Scale efficiency score

From the table 6 shows the result of DEA analysis with input oriented assumption, the average of Technical efficiency score under a constant return to scale assumption (CRSTE) is equal to 0.82 (SD = 0.15), for pure technical efficiency score or technical efficiency score under a variable return to scale assumption (TEVRS) is equal to 0.98 (SD=0.03) and Scale efficiency score (SE) is equal to 0.84 (SD=0.13). It can be observed that the result of TEVRS, the minimum number of efficient score is equal to 0.56 (the highest score=1) while TE CRS is equal to 0.35 (the highest score=1).

**Table 7 :** Descriptive statistics of TE scores from Input oriented DEA model

| TE      | Private Clinics under frontier (units) | Percentage (Total =88 units) |
|---------|--|------------------------------|
| CRSTE*  | 23                                     | 26.14                        |
| VRSTE** | 84                                     | 95.45                        |
| SE***   | 23                                     | 26.14                        |

\* Technical efficiency score under a constant return to scale assumption

\*\* Pure technical efficiency score or technical efficiency score under a variable return to scale assumption

\*\*\* Scale efficiency score

Table 7 shows statistics of TE scores from input oriented DEA model, from the total of 88 private clinics, there are 84 private clinics are in technical efficiency under a constant return to scale assumption (CRSTE) frontier while others are inefficiency; it is 95.45 percent of the total units. There are 23 private clinics are in pure technical efficiency or technical efficiency under a variable return to scale assumption (VRSTE) and scale efficiency frontier; it is 26.14 percent of the total units. It can be implied that the private clinics under UC can manage the healthcare service efficiently.



**Table 8:** Descriptive statistics of the patterns of scale inefficiencies

|                          | CRS* | DRS** | IRS*** |
|--------------------------|------|-------|--------|
| Private Clinics under UC | 23   | 1     | 64     |

\*Constant return to scale (DRS)

\*\*Decreasing return to scale (DRS)

\*\*\*Increasing return to scale (IRS)

Table 8 shows that from the 88 private clinics under UC, the private clinics under UC which CRS (constant return to scale) is equal to 23 units and IRS (increasing return to scale) is equal to 64 units while DRS (decreasing return to scale) is equal to 1 unit. Therefore, the result proves that increasing return to scale is higher than decreasing return to scale. This means that the percentage increase in outputs is more than percentage change in all inputs.

## Discussion

The result showed that most private clinics under Universal Coverage Scheme (UC) in Bangkok, in fiscal year 2017 achieved high technical efficient score, there are 84 private clinics under UC as 95.45 percent of the total private clinics under UC are operating at technical efficiency (VRSTE) frontier. It can be implied that, the private clinics under UC can manage their own resources to provide primary healthcare service primary care under NHSO's qualifications and standards efficiently. The average of technical efficient score (VRS) as 0.98 is higher than the average of technical efficient score of the previous study in sub-district health center under MoPH of Pattamsiriwat in Thailand, 2008 [13] which as 0.69, and also the percentage of units at efficiency level higher than that 5.24 time.

As a result of DEA; patterns of scale inefficiencies showed that only one of total private clinics under UC which is decreasing return to scale (DRS), it means percentage increase in inputs is more than percentage change in outputs, so this organization could aware their situation and they could adjust appropriated inputs.

However, since disadvantage of DEA method that cannot identify the relationship between outputs and inputs that indicates efficiency, so the study could consider identifying determinants that affect their technical efficiency score in order to be the guidelines for manager to decide how to allocate their own available resources to achieve efficiency and policy makers to use evidence base for allocating resource efficiency and designing a suitable healthcare system for private clinics in Bangkok further.

Furthermore, medical services have to deal with various kind of diseases or various level of severity, different patients thus require different amount of times and moneys for treatment. It could be the weak point of applying DEA method in health care system. The appropriated applying, inputs and outputs could be weighted for adjusting the various levels of medical services.

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## **Bittersweet Dispute: Business, Human Rights and the Sugarcane Plantation in Cambodia**

*Watcharachai Jirajindakul<sup>1</sup>*

### **Abstract**

This paper examines the problem of sugar business and human rights in Cambodia. Drawing by the European Union's "Everything But Arms" (EBA) preferential trade scheme for least developed countries, the paper analyses how the Thai sugar companies and Cambodian tycoon have severely caused the forced evictions, land grabbing and other human rights violations in Kampong Speu and Oddar Meanchey, Koh Kong, Cambodia.

In raising business ethics, public awareness and moving the United Nation's Guiding Principles on Business and Human Rights, the paper questions the roles and powers of states, transnational corporations, civil society and communities in empowering social justice in Cambodia; put specifically, it asks how the lawsuit and non-legal dispute resolution in Thailand preserve the Cambodian villagers suffering from the violations in the sugarcane plantation industry.

The paper shows that the villagers have been for years facing struggles in accessing justice quickly, effectively and fairly. In seeking the redress for the victims, the paper argues that the class action lawsuit is a powerful tool, though costly and complicated, for remediation and advocacy. The Song Mao v. Tate & Lyle Industries Ltd. case has been purposively selected to compare and analyze with the lawsuit in Thailand.

**Keywords:** Business Ethics, Social Justice, Business and Human Rights, Sugarcane, Cambodia

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## Introduction

The phenomenon of products, services, investments, skilled professional workers and capital has flown freely in the southeast Asia due to an economic integration of ASEAN Economic Community.<sup>2</sup> Nevertheless, even though such economic integration could bring about vital development, its progress could also adversely affect the environment and human rights by fostering certain activities to the area, for example, the establishment of hydro-power dams and fossil-fuel fired power stations, a proliferation of the mining industry, and the establishment of polluted industrial zones. (Carl Middleton and Ashley Pritchard, 2013: 8) The ASEAN People's Forum ('APF') – the largest ASEAN civil society group – has expressed their concerns about the proliferation of numerous problems, such as grave human rights violations due to the use of forced labor and child labor, state sanctioned land grabs and possibly a lack of corporate accountability, which may occur in the region. (Kate Hodal, 2015) Accordingly, in Southeast Asia, business, human rights and environmental issues are impacted by land acquisition, corporate development projects, migrant labor, human trafficking and environment protection. At the same time, because of arbitration under bilateral investment treaties of ASEAN member states, companies are allowed to bring litigation against their respective governments for discrimination or treating potential investors unfairly.

In general, business and human rights abuses are taking place more in the less developed countries of the association than in those more developed. Often, human rights violations occur in the context of an imbalance between the economically powerful corporations, investors and government, on the one side, and individuals, especially vulnerable members of society, on the other. Such violations appear to be exasperated by cross-border investment. Thailand, for example, has an increasing number of transboundary investments through both state-sponsored and private sector projects, such as the Xayaburi Dam Project, the Dawei Special Economic Zone Project, and the Koh Kong sugar plantation case. Notably, these projects have been accompanied by a growing concern over a lack of accountability for their impact on human rights and the environment, which have been documented in reports of the National Human Rights Commission of Thailand (NHRCT). The *Koh Kong* sugar cane plantation in Cambodia is one of these key cases in which the NHRCT has played a significant role in releasing a preliminary finding that the “*human rights principles and instruments were breached, and that the Thai parent company is involved in the operations.*” (“Human rights institutions in Southeast Asia,” 2014). Following this investigation, the UN Special Rapporteur on the situation of human rights in Cambodia mentioned this case as a landmark case in international advocacy and as an achievement in a dispute regarding transboundary human rights promotion and protection. As a result of the examination and recommendations by the NHRCT, on 16 May 2013, the Thai Cabinet recognized those recommendations in its resolutions pertaining to extraterritorial obligations (ETOs) Business and Human Rights and Thai Transboundary investment in development projects in Southeast Asia.

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<sup>2</sup> See Association of Southeast Asian Nations (2014) *ASEAN Economic Community*. Available at <http://www.asean.org/communities/asean-economic-community>

This case study aims to examine the sugar plantation case in *Koh Kong* by analyzing how the application of strategic public litigation (SPL) was used together with the technique of class action procedure. The case was used for a discussion in the sociology of law and development course at the Graduate School of Law, National Institute of Development Administration. It urged the student to think like a lawyer about the role of players in the transboundary economic activities; the jurisdiction across the boundaries of states; and the strategies and techniques of litigation in applying the SPL to enhance the social justice and corporate accountability in Cambodia, specifically.

It should be noted that the case is complex since it contains transboundary dispute and raises several challenging legal issues, for example, the application of law to the case, the conflict of law, the method of class action lawsuit and the use of litigation technique to draw public awareness and social mobilization on unresolved and endemic land disputes in Cambodia. Questions will be addressed, and an analysis provided through taking a doctrinal legal approach towards the legal instruments and relevant case laws. Also, note that the term “law” in this research means law in the broad sense, covering not only legislation and judicial precedents, but also soft law such as norms.

The paper is divided into five sections. Section 2 introduces a synopsis of the focal situation of the case. It shows a historical background of the case and the impact of economic activities on society and the environment – a violation of human rights and environment due to economic activities. Section 3 examines the applicability of Class Action and discusses the *Song Mao v. Tate & Lyle Industries Ltd* case as a sample of corporate accountability. Section 4 shows the discussion on implication of SPL in the *Koh Kong* case. Class action lawsuit will also be discussed together with the role and mandate of NHRCT and the power of civil society in protecting the local inhabitants from business-related human rights abuses of companies outside of their home country. Finally, section 5 provides a conclusion.

## The Synopsis of the Focal Situation of the Case

Trade is a modern, but fundamental, tool to supporting economic and political stability. Under the General System of Preferences (GSP) scheme, the European Union's Everything But Arms Arrangement (EBA) was set up to boost the integration of very poor countries (Least Developed Countries or LDCs in “development” parlance) into the global economy and to reduce the poverty by providing them with duty-free access to the European market for all tariff lines.<sup>3</sup> The sugar plantation industry in Cambodia is one of several businesses that benefits from this scheme. Simply put, the EBA has positively yielded a huge difference to a country's economic development and brought the benefits to the local. However, whether the arrangement has no harm to the local and community; whether the arrangement should be strengthened to consider the UN's Guiding Principles on Business and Human Rights? The sugarcane plantation case will bring us to consider these issues.

In August 2006, the Cambodian Government granted economic concessions in *Koh Kong* province to two Cambodian sugar companies including a) Koh Kong Plantation, and b) Koh Kong Sugar Industry. Both companies were owned by the Thai company, “Khon Kaen Sugar Industry Public Co. Ltd. (KSL), the Taiwanese Ve Wong Corporation, and Cambodian Senator Ly Yong Phat. According to shareholder ratio, KSL held seventy percent in the two sugar cane companies, followed by the Taiwanese corporation with thirty percent. By contract, the KSL had agreed to trade all the sugar from the plantations processed in their factory to the UK company, Tate & Lyle Industries Ltd.

Around 19,100 hectares of private land in *Koh Kong* province were unlawfully granted to the above mentioned two companies. Evidence shows that these two companies were owned and managed by the same entity, sharing the same office space and applying in Cambodia for Economic Land Concessions (ELCs) privileges on the same dates. (Elaine Sun, 2016) According to the 2001 land law of Cambodia, Article 59 states, “*Land concession areas shall not be more than 10,000 hectares.*” Although the ELCs in this particular case were registered by two separate companies to own the land, it can be assumed that, in this manner, the business owners would like to circumvent the 2001 land law of Cambodia.

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<sup>3</sup> The EU is at the forefront of global initiatives to help least developed countries (LDC) integrate further into the global economy Tailor-made to the specific needs of least developed countries, the EU's “Everything But Arms” arrangement (EBA) was born in 2001 to give all LDCs full duty free and quota-free access to the EU for all their exports with the exception of arms and armaments. This makes it the most generous form of preferential treatment to LDCs globally—an approach we encourage other partners to follow. See Regulation (EU) No 978/2012 of the European Parliament and of the Council of 25 October 2012 applying a scheme of generalized tariff preferences and repealing Council Regulation (EC) No 732/2008.

## **Backdrop: Sugar Cane Plantation and Land Evictions**

In Cambodia, the Economic Land Concessions (ELCs) has been a serious and controversial issue. Ostensibly, the main purpose of ELCs is to develop intensive agricultural and industrial-agricultural activities and increase employment in rural areas within a framework of intensification and diversification of livelihood opportunities and within a framework of natural resources management based on appropriate ecological systems.” However, because of ELC, about 4,000 *Koh Kong* villagers claim that they were faced with the problem of forced relocation in order for the *Koh Kong* companies to make use of the land. In the matter of the economic land concessions under the ELCs in *Koh Kong*, the residence booklets show that the villagers had inhabited the land for more than five years prior to their forced removal. Article 30 of the Cambodian land law of 2001 authorizes them to request ownership in the privately possessed area.<sup>4</sup>

In December 2012, approximately 2.6 million hectares of land, equivalent to roughly 14.3 percent of Cambodia’s total land mass, had been granted by the Royal Government of Cambodia to corporations. (Depika Sherchan, 2015: 5) This involuntary land grabbing has caused several problems, for example, forced displacement, illegal confiscation of land, severe impact on livelihood and several kinds of human rights violations such as right to life and right to self-determination. It should be noted that three main provinces - *Koh kong*, *Kampong Speu* and *Oddar Meanchey* - have the largest number of land grants which have been directly linked to the European Union’s Everything But Arms (EBA) preferential trade scheme for least developed countries.

## **Adverse impacts on Human Rights and the Environment**

In the country side, ELCs intend to expand employment in remote areas and enhance small and large-scale private investment. In fact, these developments are likely to create human rights violations particularly with forced evictions of communities. According to Professor Surya Sudedi, UN Special Rapporteur on the Situation of Human Rights in Cambodia, ELCs in Cambodia have led to wide range of negative impacts on local villages including food security, loss of access to means of livelihood, environmental deterioration as well as impacting on areas of cultural and spiritual significance. (United Nations, Economic land concessions in Cambodia: A human rights perspective, 2007: 12-15.)

Significantly, such business practices and violations were reaffirmed by the report of Subcommittee of NHRCT. The report found that the Thai company had been involved in the economic activities in *Koh Kong*, which evidence substantiated to reach a reasonable conclusion that human rights principles and instruments were breached in this case. In addition, the sub-committee identified several breaches of fundamental human rights, for

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<sup>4</sup> See Cambodia Land law 2001, Article 30 says “Any person who, for no less than five years prior to the promulgation of this law, enjoyed peaceful, uncontested possession of immovable property that can lawfully be privately possessed, has the right to request a definitive title of ownership.”



example, the right to life and self-determination, in particular, and also points out “*a failure to uphold the people’s right to development, which includes their right to participate in, contribute to, and enjoy economic, social, cultural and political development, and through which most other human rights and fundamental freedoms can be fully realized.*” (National Human Rights Commission of Thailand: 2015)

Even though companies are required to adhere to national laws in order to provide reparation and compensation to the victims, unfortunately, legal enforcement remains weak. Furthermore, it is more complicated and challenging when cross-border investment projects under two jurisdictions are involved. Among ASEAN countries, the problem of inadequate human rights protection, particularly at a regional level, has been criticized for decades.

With a regional human rights protection instrument – the ASEAN Human Rights Declaration (AHRD) —, it is expected that this instrument may set a milestone in the emergence of a business trend in human rights protection which leads to a new stage of corporate legal accountability. Coupled with the legal instrument, the Strategic Public Litigation (SPL), such a class action technique can be a powerful tool in increasing corporate accountability.

### **Strategic Public Litigation as a tool for corporate accountability**

At the present time, calling for corporate accountability is unavoidable as cumulative experience has shown that transnational corporations frequently carry out their economic activities across borders with limited restrictions and oversight. Most international instruments of corporate accountability are voluntary, for example, the Global Compact, OECD guidelines, and the Guiding Principles on Business and Human Rights (UNGPs). Nevertheless, among those documents, the UNGPs seems to be the most authoritative statement of human rights responsibilities for corporations. Due to its three pillars, that is, *Protect, Respect* and *Remedy*, it has defined in such concrete and actionable terms that, if seriously applied, governments and companies would be able to meet their duties and responsibilities to prevent human rights abuses by business corporations, and also accommodates incorporate those remedies when business violations occur.

Although the domestic tier court system come into force in such cases, unfortunately, many legal loopholes still exist. Those limitations consist of the five following aspects, namely, (i) Attribution of liability among members of corporate group: Since parent and subsidiary companies exist as separate legal entities, this leads to difficulty in attributing responsibility to a parent company for human rights abuses associated with a subsidiary; (ii) Delays and length of duration of national court proceedings; (iii) The limitation of enforcement of judgement: Since there is a limitation in the development of judicial precedents for future cases, many business and human rights related cases are settled out of court; (iv) Corruption and economic or political pressure; and (v) High costs in bringing cases before the court. (Nora Götzmann and Claire Methven O’Brien, 2013: 60) As a result, these factors often preclude human rights victims to access a judicial remedy.

It is even more challenging when such cases are related to cross-border activities. It is incredibly costly to bring transnational litigation as it involves gathering evidence in a foreign state to support a claim, and the cost of legal and technical experts can be prohibitive. The *Koh Kong case* mirrors this phenomenon. However, in some situations, the victory in the court is not the ultimate goal of the plaintiffs. In contrast, the aim is to create social awareness, to encourage public debate as well as setting important precedents. This strategy is referred to as strategic public litigation (SPL) by applying class action law suits.

SPL has been defined in many ways. For example, “litigation” means taking cases to the court; and *strategic public litigation* is a method that brings about significant changes in the law, practice or public awareness via taking carefully-selected cases to court.” Put differently, a typical feature of strategic litigation is that cases are brought by individuals to *test a legal point* that also applies to cases other than just their own. Therefore, SPL is sometimes referred to as “impact” or “test case” litigation.” (Public Law Project: 5) Simply put, SPL involves the idea of lawsuit strategy which is used to bring the case before the court to create some impact and draw the awareness of society relevant to the case. Class action lawsuit, in other hand, is one in which a group of people with the same or similar injuries suffered by the same product or action bring the case against the defendant as a group.

### **Impact litigation to create broader changes in society**

Currently, there is an attempt to apply a class action procedure as a litigation tool to fight against the adverse impact on human rights. This type of claim against businesses which are made possible include torts, breaches of contract, and cases brought under environmental, consumer protection, labor, securities and stock exchange and trade competition laws.

Class action procedure has been widely used in the US<sup>5</sup> while the civil procedure rules in Thailand were amended to allow class action litigation to be brought in Thailand recently.<sup>6</sup> The first class action lawsuit in Thailand has since been brought against the operator of a goldmine in central Thailand on behalf of local residents, alleging various breaches of environmental legislation, and claiming damages for the losses caused by the escape of heavy metals and other toxins. It should be noted that regarding business and human rights abuse, it is very useful to apply this procedure for several reasons: firstly, a class action lawsuit allows plaintiffs to pursue a worthy cause. Secondly, class actions also benefit the judicial system since the case is determined by one judge in one court, so inconsistent verdicts do not become an issue. One claim will generally take less time than many similar claims tried at different times. The alternative would be to clog up court schedules, making it harder for other individuals to obtain their day in the court, etc.

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<sup>5</sup> An example of class action case was in 2001, when six female employees of Walmart filed suit against their company in US federal court alleging that Walmart discriminated against them in salary, bonuses and training.

<sup>6</sup> The bill has received royal endorsement and became effective in December 2015.

### **Learning the Practices of Class Action procedure: *Song Mao v. Tate & Lyle Industries Ltd.***

In August 2006, the Cambodian government granted economic land concessions (ELC) of 19,100 hectares of private land in Koh Kong Province to two Cambodian sugar companies, Koh Kong Plantation Co. Ltd. (KKP) and Koh Kong Sugar Co. Ltd. (KKS). The claimants in the *Song Mao* case first alleged that they remained the legal owners of the land on which sugar cane was grown. Pursuant to the 2001 Land Law of Cambodia, ELC can be lawful only when the lands are “part of the private property of the State of Cambodia,” not of individuals, and cannot be granted to areas “greater than 10,000 hectares. However, the land was legally owned by the villagers, and the concessions exceeded 10,000 hectares. While the law also stipulates that the government should provide “fair and just compensation in advance,” no such compensation or prior consultation had been provided to the villagers. Then, the claimants alleged that villagers were entitled to possession of the sugar cane which was grown on this land pursuant to the Land Law, which states that “the owner of immovable property is entitled to receive all types of fruits from such property”.

In March 2013, two hundred Cambodian villagers commenced the case before the UK Highest Court against *Tate & Lyle Industries Ltd* in seeking compensation for the profits from the sale of the sugar based on the fact that the UK-owned company purchased sugar from sugarcane grown on the local land where the suppliers had breached human rights. *Khon Kaen* Sugar Industry had entered into a five-year contract with the United Kingdom *Tate & Lyle Industries Ltd* for the purchase of this sugar. In this case, the defendants (*Tate & Lyle Industries Ltd.*) claimed that they did not have knowledge of the fact that the two sugars companied violated Cambodia Land Law, and also argued that the sugar purchased from Cambodia “*is free of breaches of human rights.*” Moreover, the defendants claimed that they would end the contract with *Khon Kean* Sugar Industry if “*evidence is forthcoming of any wrongdoing by our supplier.*” (Hodal, 2013)

The *Song Mao* case demonstrates that transnational human rights litigation can be used as a powerful advocacy tool. The villagers’ legal strategy is innovative in at least two respects: first, the defendants are not the Cambodian government or KSL, but rather T&L, the buyer of the sugar. As the villagers tracked every single player who played a role in their eviction, they reached the end of that supply chain and held it accountable as well. Second, the UK High Court is hearing this case, because the plaintiffs tracked the trail of sugar to where it ended up, even though the land grabbing and eviction took place in Cambodia. If successful, *Song Mao* case would give rise to the possibility of seeking redress from relatively removed defendants and in foreign jurisdictions. It is also important to note, however, that the claimants had exhausted the legal framework and judicial processes in Cambodia and in Southeast Asia before seeking transnational human rights litigation elsewhere. The claimants also pursued regional and UN human rights institutions and procedures against the actors involved in any capacity, thus exerting pressure from all directions.

Note that the case is successful because of the malfunctioning of the judicial system in Cambodia as a violating country. This leads to the defendants being liable in the UK court including (i) the alleged companies both have some crucial links to the UK court and (ii) the plaintiffs had already exhausted judicial processes in Cambodia. (Mahdev Mohan, 2013: 3-7.)

Considering the success of the *Song Mao v. Tate & Lyle Industries Ltd* case, the villagers applied Class action as a legal strategy to challenge the court against extraterritoriality while forming a new policy for changing the new way of a lawsuit. Also, civil society organizations (hereinafter “CSOs”) played a significant role representing the villagers affected by the economic land concessions.

## **Discussion: Implications of Strategic Public Litigation in the *Koh Kong* case**

In this particular case, although compensation had been paid to 18 of those families and they accepted \$2,000 each from the companies involved, they signed documents written in Thai that they claimed that they did not understand nor were explained to them. For this reason, five of those families are among the 200 involved in a class-action lawsuit filed in London against the U.K.- and U.S.-owned firms that bought sugar over a two-year period — Tate & Lyle Industries and T & L Sugar, respectively — in order to receive justice. In applying Class action procedures effectively, the national human rights institutions and Civil Society Organizations play a crucial role in business and human rights issues, particularly on transboundary matters. This section examines and discusses their roles.

### **The role of the National Human Rights Commission of Thailand**

In terms of judicial mechanism at the national level and regarding the judicial state-based grievance mechanisms, there are a range of national tiered court systems and specialized courts in existence, such as industrial labor courts and consumer courts. As far as state-based non-judicial mechanisms are concerned, these include the Ombudsman and National Human Rights Institution (NHRI). The 1993 Vienna Declaration and Programme of Action (the ‘Vienna Declaration’) proposes the formation of NHRI on the basis of the Paris Principles. The Paris Principles set out minimum international standards for NHRI to have the appropriate status and to function effectively based on a broad mandate, such as being independent of government and having adequate powers of investigation. (Office of the United Nations High Commissioner for Human Rights, 2010: 15-16.) At the ICC’s 10<sup>th</sup> International Conference, held on 10 October 2010, 80 NHRIs were fully accepted as having a broad enough mandate as set out in the Paris Principles, meaning that their duties extend to business and human rights violations and abuses. (Meg Brodie, 2011: 253) Therefore, their mandates include business-related human rights protection duties, namely: (i) addressing any barriers to access with regard to state judicial remedies, (ii) providing information to the victims of corporate human rights abuses on how to access legal remedies in their home or host countries, and (iii) bringing the actors involved in business violations to justice and providing sufficient remedy to the victims of commercial and human rights abuses.

Note that the Southeast Asia National Human Rights Institutions Forum (SEANF) is composed of six independent NHRIs in the Southeast Asia sub-region which includes the NHRCT.<sup>7</sup> Because economic activities across borders have increased, there is a current recognition of the need for a regional approach to respond to human rights issues and a strict effort to control and monitor their businesses for several reasons. First, the state judicial organizations often do not provide an effective protection mechanism due to a lack of political and economic will to bring cases against state and corporate organizations. Second, there is often a lack of resources available in terms of human, financial and institutional capacity to implement and monitor social and environmental regulations. And, third, the misconduct of state authorities themselves has also caused a lack of effective remedies being available. Thus, the impetus among businesses to demonstrate to society their accountability seems to be weak as the local authorities prefer not to exercise their power over corporations. (W.J.M. van Genugten, et.al., 2013: 5-6) In the *Koh Kong* case, however, we will see how the significant role of the NHRCT regarding corporate violations abroad of Thai investors is discussed.

Several leading Cambodia civil society groups including Equitable Cambodia, Cambodian Human Rights and Developments as well as Community Legal Education Center have worked closely with affected communities and villagers to gather some evidence in relation to human rights abuses namely on issues involving land. Nevertheless, the NHRCT has also played a vital role on the transboundary adverse impact on human rights. After receiving a complaint dated 6 January 2010 from lawyers at the Community Legal Education Center, the NHRCT appointed the Subcommittee on Civil and Political Rights (SCRП) to examine the case. Preliminary findings found that a Thai company, *Khon Kaen* Sugar Industry Public Company Limited, was involved in these human rights and environment violations. The report showed that such violations breached the right to life, right to self-determination, and right to development. (National Human Rights Report of Thailand, 5.)

It should be emphasized that the *Koh Kong* case has established a new regional standard of the role of NHRCT, by which the UN Special Rapporteur on Cambodia reaffirmed this role as the case highlighting the need for the human rights violations to be addressed and remediated.

### **The role of civil society organizations**

In addition to the role of the NHRCT, civil society organizations also played a key role in the case. Significantly, the mandate of efforts of civil society groups has not only influenced international public interest, but also introduced many non-governmental organizations that have the potential capacity to play their roles in strategically setting behavior or policy standards and producing independent information. Obviously, some NGO groups are able to lobby and convince government to provide justification, clarification and to

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<sup>7</sup> Note that others include (1) Komnas HAM of Indonesia, (2) SUHAKAM of Malaysia, (3) Myanmar National Human Rights Commission (MNHRC), (4) Commission on Human Rights of the Philippines (CHRP), and (5) Provedor de Direitos Humanos e Justica (PDHJ) of Timor Leste



change the government's policies. (Beth A. Simons, 2009: 32-34.) Clearly, this emerging role of NGOs challenges the state monopoly on information, standard-setting and norm creation.

The core role of NGOs regarding the case should be noted as a strategic litigation tool in encouraging public awareness and drawing the attention of non-judicial actors. Since the case encountered little success in seeking justice in Cambodia's domestic court, the villagers of *Koh Kong* attempted to seek and engage in judicial and non-judicial processes regionally and internationally. In addition, the communities had brought the case before the ASEAN Intergovernmental Commission on Human Rights (AICHR) to seek remedy before a regional human rights institution. Also, the local NGO, CLEC, had played its role in this case by bringing civil and criminal complaints before *Koh Kong* Provincial Court. However, due to a lack of judicial independence in the Cambodian court, the case was ignored. To date, no action has been taken by any relevant authorities.

Moreover, in regard to the practice of business and human rights, a launch of transnational campaigns by civil society is also essential in developing good practices. For example, CLEC had urged the European Commission to investigate Tate & Lyle Industries Ltd's contract with *Khon Kaen* Sugar Industry in relation to the EU's Everything But Arms initiative. Still, CLEC and the EarthRights International had jointly submitted a memorandum to the Norwegian Council on Ethics to draw attention from society regarding the activities of the sugar industries. As a result, CLEC and the 200 villagers representing the affected communities had filed a civil lawsuit in the UK Commercial Court against Tate & Lyle Industries Ltd. (EarthRights International :11-13) CLEC sought recourse beyond Cambodia but within ASEAN and filed a complaint before the NHRCT based on the claim for jurisdiction of the Thai Commission on *Khon Kaen* Sugar Industry. This is a confirmation of the process of SPL, by which the civil organization plays its role in seeking justice and calling for accountability from business.

### **Predict the legal issues and interpretation**

The two cases, *Song Mao v. Tate & Lyle Industries Ltd.* and *Koh Kong v. Tate & Lyle Industries Ltd.*, proved that a class action procedure could be a legal tool for urging corporate accountability. It should be mentioned that, currently, there is another prominent case regarding a sugar concession in *Oddar Meanchey* Province. This civil tort case also involves Thai jurisdiction since the Thai parent company, *Mitr Phol* Sugar Company Limited, was granted concessionary rights by the ELCs.<sup>8</sup>

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<sup>8</sup> On January 24, 2008, the Ministry of Agriculture, Forests and Fisheries awarded three ELCs totaling 19,700 hectares in the Samrong and ChongKal districts of Oddar Meanchey province to the Angkor Sugar Company, Tonle Sugar Cane Company and Cane and Sugar Valley Company. The concessions were granted for 70 years for sugar production and a processing plant

The Action Aid Cambodia and Oxfam GB's Cambodia's study – *The Bitter Taste of Sugar Displacement and Dispossession in Oddar Meanchey Province* – and the investigation report of NHRCT No. 1003/2015 shows that the *Mitr Phol* Sugar Company had illegally occupied the land, resulting in a series of human rights and environment violations and threats such as the razing of villagers' houses and destroying livestock. Though such violations are reported, documentation, unfortunately, has been lacking and there has been failure of enforcement since the report provides only recommendations to violators lacking legally binding power. However, from the lessons learned from *Song Mao v. Tate & Lyle Industries Ltd.* and *Koh Kong v. Tate & Lyle Industries Ltd.*, it would be a challenge to apply a class action procedure as a SPL to the *Mitr Phol* case in terms of extraterritoriality before Thai Court.

It is noted that, by a new law enacted on April 8 2015, the Thai Civil Procedure Code allows the use of class action as a legal proceeding. This amendment marks a notable development in Thailand's judicial system.<sup>9</sup> Likewise, the Thai class action legislation contains similarities to class actions in other countries. For example, a procedure encourages and aggregates a large number of individualized claims into one lawsuit while the court decisions will be binding on all class members.

## Conclusion

Human rights violations by some businesses often occur in the context of an imbalance between economically powerful corporations, investors and governments on the one hand, and individuals, especially vulnerable members of society, on the other. The Koh kong sugar plantation case is a good example to illustrate such human rights violations. In order to equip law students with lawyering skills, to think like a lawyer about the cross-border dispute, the case study questions how we can apply the SPL techniques to bring social justice before victims in the foreign jurisdiction. From this case, we could learn, in terms of international guidelines, how the international community could create a fair and equitable atmosphere among investors and affected villagers. This, in fact, led the United Nations Human Rights Council in 2011 to unanimously adopting the UNGPs, which has evolved into

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<sup>9</sup>The amended provisions provide for the following:

“Cases involving a group of persons who have the same interests and rights related to tort, breach of contract, and other laws including environment, consumer protection, labor, securities and stock exchange, and trade competition can petition to be filed as class actions by a plaintiff, which is a class member, together with the complaint.

The Court has the power to allow, define the scope or characteristics of a class, inquire into, and terminate a class action.

Class members may opt-out of the class action and pursue individual claims.

A judgment binds all parties and members of the group. A plaintiff (or attorney) has the power to proceed with execution of the judgment on behalf of all members of the group.

Defendants may be held liable for plaintiffs' attorneys fee awards not exceeding 30% of the judgment amount. Historically, the lawyers' fees assessed by Thai courts have been very low.



an authoritative global framework for addressing business impacts on all human rights. However, UNGPs has no legal force. This gap begs for the establishment of an international legal instrument to cope with the problem of business and human rights abuses.

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## Finding the Centrality of Urban Street Network by Applying Syntactic and Network Pattern Models

Napong Nophaket <sup>1</sup>

### Abstract

The aim of this case research is to study the centrality models of urban street pattern in order to assist city planning and design. It compares and contrasts “Space Syntax” model (SS) with “Network Pattern” model (NP). Previous studies of each model analyzed the street pattern’s structure in correlation with economical and sociocultural activities of concerned city. For city planning and urban design and studies, these analytical centrality models can help the planners, designer and researchers not only to understand the inherit logic for each specific place but also to plan for the future of the places in cities.

To visualize spatial configuration of city, SS model emphasizes on the calculation of *Axial Map*. Central to the Axial Map is ‘integration value’ indicating the degree of ‘the segment’s accessibility’. This value demonstrates the accessible degree of each street segment as seen from all other segments. In contrast, Network Pattern model (NP) proposes alternative real distance based metrical models, *Central-Node Map* and *Shortest-Path Map*. These models base on the sum metrical shortest paths from any street junction to all other street junctions. The first depicts the degree of metrical centrality among all street junctions in the same network, and the later the degree of being shortest path among all street segments in the same urban grid. In short, both SS and NP models yield the optimal path of city’s street pattern. However, the Axial Map focuses on ‘topological’ centrality, whilst the Network Maps focuses on ‘metrical’ centrality.

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The NP models studied in this case study show that the actual traveling distance is important and must be considered in the explanation of pedestrian movements and local activities. This result is particularly strong in the town where automobiles do not dominate traveling pattern. The research concludes that, despite revealing different spatial structures, Space Syntax and Network Pattern models are supportive to each the other to analyze street structure in conjunction with use patterns, pedestrian and vehicle movements and local socio-economical activities. If combined, they can simulate the global access of syntactic integration pattern and the local compact structures of city, namely the central-node and the shortest-path core area of the city.

**Keywords:** compact urban core; street pattern; axial map; central-node map; shortest-path map

## Introduction

Recent discussion on the urban form and sustainability, particularly on the relation of smart growth and compact city, has led to the notion that city growth must be contained within a *proper* and *limited* area. However, no existing study, thus far, has provided any empirical evidence or the effective method with which the applicability of this assumption may be verified. Urban planning and architectural studies normally provide the city with future city forms and architectural styles. Despite little knowledge of what good urban form should be, it is believed that there must be sufficient density and open space, good proportion between housing and public facilities, viable transportation system and mixed uses within city's self-sufficient boundary (Smart Growth Network, 2010). Spatial expression for the good structure of city should also be clearly provided (Roger, Karl, Mriganka, & Louise, 2007). Therefore, it is very important that urban architects as well as urban policy makers should have concept, theory and modeling to evaluate and generate scenario for the city's future policy and urban form. Such models are useful to study the growth of land uses, future changes in transportation patterns and other physical environment of the city.

In urban sociology the concept of human ecology by Hawley (1982) and social morphology by Schnore (1982) also believe that space has the organizing role for human community. Emile Durkheim, in *Division of Labor*, is the strong basis in this idea (Durkheim, 1933). To him, space might produce the structural property of our society. In architecture, Foucault (1979) and Markus (1987) also study buildings as the spatial models of power. Similarly, Choi (2003) view architecture as a social product that accommodates the power structured in space as well as the society.



Rooted in the field of urban planning and architecture, where physical environment is central to the study, the Space Syntax (SS) and the Network Pattern (NP) analyses have essentially been used for depicting the relationship among ‘spatial structure’ of the city such as hierarchical patterns of streets, alleys, junctions and alley ends, and the city’s ‘natural movement’ such as vehicle and pedestrian volumes. These two approaches can evaluate and generate what-if scenario for the urban form. With the computer modeling that can vividly illustrate the centrality structure of the whole city’s street pattern; the models are useful for planning the growth and changes in transportation pattern, use pattern and overall physical structure of the city. Thus, this research study aims at investigating the extent to which the SS and the NP can be used as tools for analyzing urban street pattern.

By describing the theoretical basis of Space Syntax and Network Pattern models; the Axial Map of SS and the Central-node Map and Shortest-path Map of NP are explained.

The comparisons of both models are demonstrated through the Axial Map and the two Network Maps generated from the same area of Gassin town’s downtown. Both types of models yield the optimal path of city modeled from the same urban grid, but their underpinning display of the spatial configuration differ; the Axial Map on the ‘topological’ structure. It describes a connectivity pattern with regardless of metrical distance. By contrast, the Network Maps including the Central-Node and the Shortest-path Maps show ‘metrical’ structure or the distance-based shortcut pattern of city.

Further implications from this case study include alternatives planning and design guidelines for

- 1) defining land and building use patterns,
- 2) speculating patterns of vehicle and pedestrian movement and
- 3) designing the guidelines for planning of walking and cycling routes for historic and cultural areas in cities.

## **Theory**

In *The Architecture of Urban Object*, Hillier (1989) studied Gassin town and pointed that it has social meaning of spatial form which arises from the rules of aggregation assigned to urban block, not to individual building. To understand spatial configuration of Gassin town, a small town on the ridge of a hill in Var region at south of France, this research begins with explaining the theoretical basis of Space Syntax (SS) and Network Pattern (NP). This is coupled with their analytical models; the Axial Map, Central-node Map and the Shortest-path Map respectively. These three models propose a guidance for compact form of city in the case.



## Research Methodology

This research studied the centrality of different spaces within one urban street network in order to understand and properly utilize each specific place in such network. The researchers, urban planners and designers and policy makers, hence, can utilize both the ‘centrality’ of each space, i.e. street, segment and node, as well as the ‘compactness’ that the Space syntax and the Network pattern models found to further study and to plan for the future of other cities. Research method is as follow.

First, it gives the basic idea and calculation of the two analytical models of urban space, the Axial Map and the Network Map.

Second, we use Gassin town, a small French town, as the basic model town to explain both analytical models. As any town in every region of the world has similar elements, i.e. the street network and buildings, it is clear that the two studied models are applicable across regions.

Third, the two centrality models generate their own mathematical sets of data. These data are computed according to each model’s calculation method. Then, the visualization of each model is shown in figures 5 to 8. For each model, this research describe the compactness in different typology, i.e. syntactic compact core and networking compact core.

Forth, in discussion the paper compare and contrast the results of analysis from two models for Gassin town. Further, it also reviews the case study of towns in Japan from other work.

By the method of this research, not only the researchers can comparatively study the physical logic with sociocultural and economical logic of the urban places, but also urban planners, designers, real estate developers and urban policy makers, for examples, can have provision of the different potential of each place within urban network. Therefore, the utilization of urban spaces, in the future, could be more focused and more economically and socially proper.

## The two models

### A. Space Syntax

To applying Space Syntax to analyze Gassin town and to propose urban compactness and centrality of this approach, this part describes three things; 1) the concept, 2) Axial Map modeling and ‘integration value’ and 3) Syntax compactness.

## The Concept

Space syntax is a set of theories and techniques for the analysis of spatial configurations. Originally it was conceived by Bill Hillier, Julienne Hanson and colleagues at The Bartlett, University College London, in the late 1970s to early 1980s (Hillier & Hanson, 1984). For architects and planners, it provides a tool to help simulate the likely social effects of their designs. The general idea is that spaces can be broken down into components such as line and polygon. The overall network of spaces then can be analyzed as the networks of choices. These spatial networks or the spatial structure of architecture or urban form can be represented as maps and graphs that describe the relative connectivity and integration of those spaces.

As explained in Wikipedia (2011), the three basic conceptions of space includes:

- 1) Isovist is visibility polygon or the field of view from any particular point
- 2) axial space is a straight sight-line and possible path and
- 3) convex space is a polygon space which can be occupied where, if imagined as a wire frame diagram, no line between two of its points goes outside its perimeter, in other words, all points within the polygon are visible to all other points within the polygon.

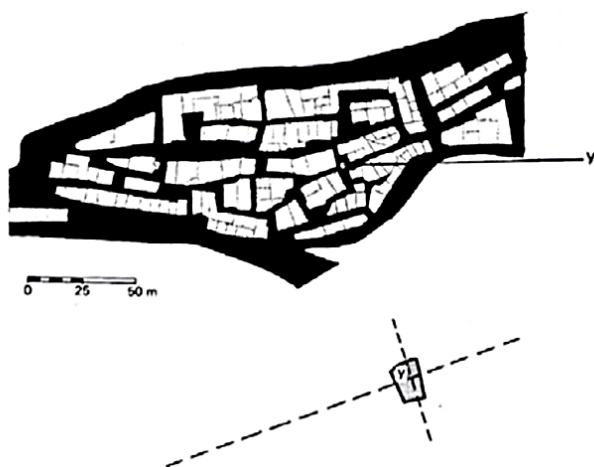


Figure 1: Map of small town G. Redrawn from Hillier and Hanson, 1984 (p.90)

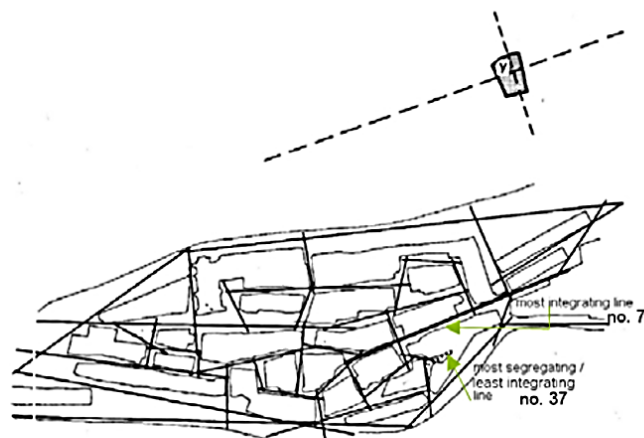


Figure 2: town G's Axial-line Map shows the Axial Map before calculation. The shallowest and the deepest lines are highlighted. Redrawn from Hillier and Hanson, 1984 (p.91)

## Modeling Axial Map

Introduced in Social logic of Space by Hillier and Hanson,

*'An Axial Map of the open space structure of the settlement will be the least set of such straight lines which passes through each convex space and makes all the axial links'. (Hillier & Hanson, 1984, p.91-92)*

From Figure 1 to Figure 6, the existing map of a small town called G is redrawn as an axial-line map and calculated as the Axial Map. In Figure 2, the most and the least integrating axial lines, number 7 and 37 respectively, are highlighted. Figure 3 and 4, then, represent the 'Justified Graph' of them to demonstrate the depth of all other spaces seen from the axial line no.7 and no.37. Axial line no.7 has 8 connected lines by turn once (step one - depth 1), the other next 13 connected lines by two turns (depth 2), next 13 connected lines by three turns (depth 3) and finally 6 connected lines by four turns (depth 4). Therefore, the average depth of other spaces as seen by axial line no.7 equals to  $(8 \times 1) + (13 \times 2) + (13 \times 3) + (6 \times 4)$  divided by 40, the number of all axial lines in the system minus one which is the original line. With this calculation the axial line no.7 has mean depth, or MD, value as 2.425 which is the lowest when compared to all the other lines. The axial line no.37, shown in Figure 2, has the highest MD of 4.000. As a result, the line no.7 is the shallowest and the line no.37 the deepest spaces in the system of Gassin town.

In this way, the Axial Map can 'represent the continuous open space graphically' and be used to 'describe (the open space) in a structured and quantitative way' (Hillier & Hanson, 1984, p.90). In short, Axial Map is a method to reducing the complex continuous spatial network of the outdoor spaces of cities into a set of component parts that could be subjected for analysis.

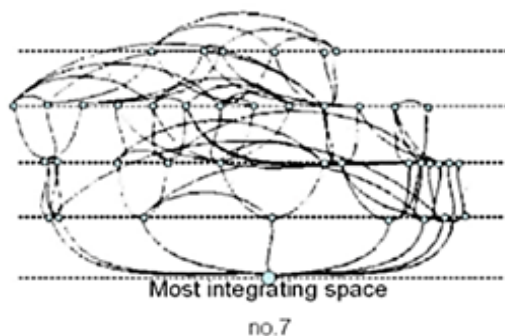


Figure 3: depths and connections of all axial spaces of town G from 'most integrated' space no.7. Redrawn from Hillier and Hanson, 1984 (p.107)

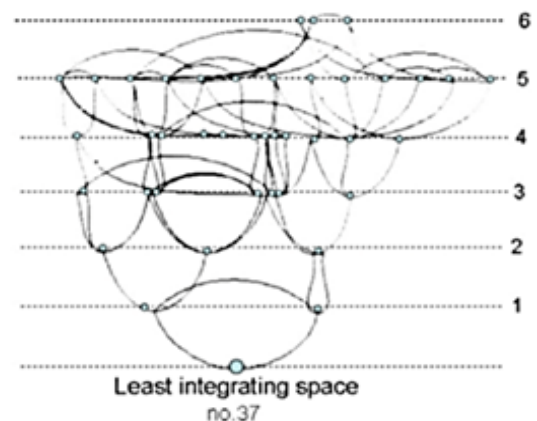


Figure 4: depths and connections of all axial spaces of town G from space the 'most segregated' space no.37. Redrawn from Hillier and Hanson, 1984 (p.107)

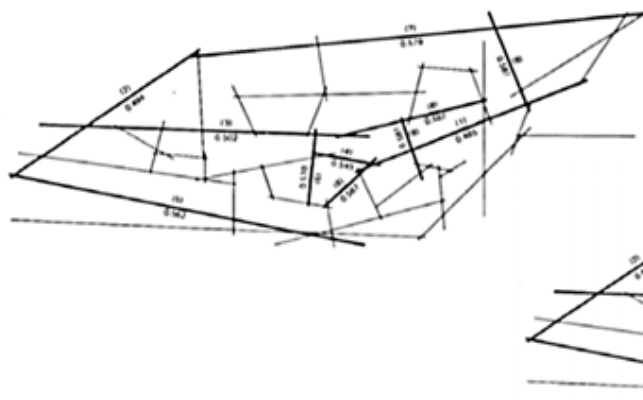


Figure 5: town G's 'Integration core' of the Axial Map with the 25 % most integrating axial spaces. Redrawn from Hillier and Hanson, 1984 (p.115)



Figure 6: town G's 'Integrating Blocks' is in grey. Based on the Integration core with the 25 % most integrating axial spaces of G from Hillier and Hanson, 1984 (p.115)

The Axial Map's break-up has single-typed element, the axial lines. The main calculation include

- a) connectivity: The numbers of the lines directly connected to each line (step 1)
- b) integration: The mean depth of all other axial lines as seen from the original line (Figure 3 and 4), that being calculated into the line's integration value, while the less mean depth the line has the more integrating it is, and
- c) control: Each space gives to each of its directly connected spaces (immediate neighbors)  $1/n$ , where  $n$  = the numbers of immediate neighbors. The sum of receiving values is the line's control value. Spaces with a control value greater than 1 are strong control, those below 1 are weak control spaces.

Control, in the same way as connectivity, is a local measure which taking into account relations between a space and its immediate neighbors, whereas integration is a 'global' measure which taking into account the relations of a space to every other space in the system. As a result, the Syntax studies of city which applying Axial Maps are mainly discussing integration values together with other space usage patterns, such as average pedestrian and vehicle volumes along the axial spaces in the system.

## Integration value

The syntactic description of a line is about considering it as the particular space in terms of its depth relation to the whole system. Therefore, Integration value of a street line, or axial line, describes the relative depth of that line from all other lines in the system. The simple description of Integration in Wikipedia (2011) is as follow.

*“Integration measures how many turns one has to make from an axial line to reach all other axial lines in the network, using shortest paths. If the amount of turns required for reaching all segments in the graph is analyzed, then the analysis is said to measure integration at radius 'n'. The first intersecting segment requires only one turn, the second two turns and so on. The axial lines that require the least amount of turns to reach all other streets are called 'most integrate' and are usually represented with hotter colors, such as red or yellow, or darker tone in black and white. Integration can also be analyzed in local scale, instead of the scale of the whole network. In case of radius 4, for instance, only four turns are counted departing from each axial line. Theoretically, the integration measure shows the 'cognitive complexity of reaching a street', and is often argued to 'predict' the pedestrian use of a street. It is argued that the easier it is to reach a street, the more popularly it should be used. While there is some evidence of this being true, the method is also biased towards long, straight streets that intersect with lots of other streets. Such streets, as Oxford street in London, come out as especially strongly integrated. However, a slightly curvy street of the same length would typically not be*

*counted as a single line, but instead be segmented into individual straight segments, which make curvy streets appear less integrated in the analysis.”*

## Syntax Compactness

According to integration study of Gassin town, the streets with higher values combined to form the integration core of the town. The central block that located among these streets should be viewed as the 'syntactic compact core' of this town (see figure 6).

### **B. Network Pattern**

## Concept

Network Pattern (NP) is a recently developed model of urban space network which defining 'street pattern' as the city's primal spatial structure (Nophaket, 2004b). The NP model is created in a comparative viewpoint to the previous Space Syntax's modeling of urban space, the Axial Map. Using the NP model, Nophaket and Fujii (2004) comparatively studied the street patterns of Kyojima and Honjo villages in Sumida city of Tokyo, in relation with their patterns of uses and the degree of livability. It is found that, to the pedestrians, the curvilinear town (Kyojima) seems more lively and popular than the gridiron town (Honjo). Although, Syntax's Axial Map analysis provides that Honjo town seems to be more 'intelligible'. The global and local integration patterns of Honjo's street network has higher correlation value ( $r$ -square Honjo = 0.802, and Kyojima = 0.646).

The result of the previous study conforms to a description of ‘natural movement’ as explained by Bill Hillier. Natural movement, or the movement naturally created by the integration pattern of street network (Hillier, et al., 1993; Hillier, 1996a; Hillier, 1996b; Hillier, 1998; Hillier, 1999), is rather obvious for Honjo, because the intelligibility values reflect the pedestrian’s and vehicle’s volumes of the series of studied streets. The correlation between local integration (radius 3) and pedestrian volume shows r-square of 0.559, local integration (radius 3) and vehicle volume with r-square = 0.846, while the correlation between vehicle and pedestrian volumes on the same streets, i.e. same axial lines, is 0.606. According to Space Syntax this high correlation values in the gridiron and ‘intelligible’ town of Honjo should bring dense pedestrian walk and drive through the town’s integrating core. The average drive per minute in Honjo and Kyojima is fairly similar; however, the average pedestrian walk per minute in Honjo is five times lower than that of Kyojima. This is basically because Kyojima is a local shopping area. Yet, why these shops are located at Kyojima? Beside the Syntactic structure is there the other underlying structure of the city that could draw these shops and pedestrian walking?

## **Modeling Network Maps**

‘The Graph Geometry for Architectural Planning’, by Nophaket (2004a), introduced a series of graph theory based models for the geometrical analysis of street patterns. Later on this graph-based geometric modeling is developed into Network Pattern. There is a commonality and a difference between Space Syntax and Network Pattern that should be focused in this research. Basically, the base map of Network Pattern model and that of Space Syntax model of urban street network is the same map, namely the Axial-line Map (Figure 2). However, the broken up elements as well as the calculation methods are different.

Syntactic measures in the Axial Map focus on the ‘depth’ pattern among all the axial spaces. The mean depth is calculated into integration value as already seen. In contrast to Axial Map, the Network Maps break up Axial-line map into the two major elements namely the ‘node’ and the ‘edge’. The node represents each street junction or street end, which calculated as the node in the shortest-path graph, whilst, the edge represents each street segment that calculated as the edge, i.e. the link, in the shortest-path graph. To model the Network Pattern maps, Dijkstra’s shortest-path algorithm is applied. There are two significant kinds of NP models including the Central-Node Map and the Shortest-path Map.

### **1) Central-Node Map**

#### **Definition:**

Central-Node Map shows the degree to which each street junction/end is being the ‘center’ of the system by comparison with one the other. (Figure 7)

### Calculation:

- 1) By applying Dijkstra algorithm of shortest path, there is the certain shortest path, i.e. the unique shortcut path, from each node to every other node (see for example in Gibbons, 1985).
- 2) The sum distance of all the shortest paths from each 'specific node' to reach all other nodes can be compared with that distance of the other nodes in the same graph.
- 3) The hierarchy of these distances from the most central to the least central nodes can be represented in the Central-Node Map of the urban street network. (Figure 7)

### Representation:

The Central-Node Map compares the sum shortest distance from every street junction/end to reach every other junction/end within the same street network. In the Central-Node Map in Figure 7, the brighter represents the more central node and vice versa. The map shows a variety of nodes from the most central ones to the most peripheral ones, either from the white to the dark grey street junctions on the black background as shown in Figure 7.

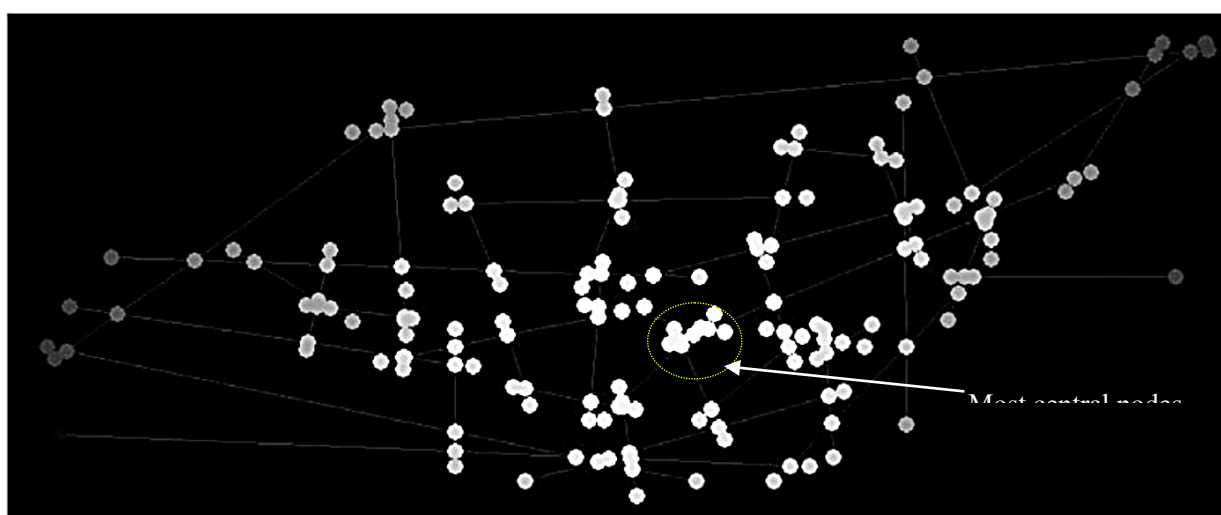


Figure 7: town G's Central-Node Map based on Axial-line Map in Figure 2.

## 2) Shortest-path Map

### Definition:

Shortest-path Map shows the degree to which each street segment, by comparison with one the other, is being the 'shortcut path' among all pairs of nodes in the system. (Figure 8)

### Calculation:

- 1) By applying Dijkstra algorithm of shortest path, there is the certain shortest path, i.e. the unique shortcut path, from each node to every other node.



2) The total number of the shortcut paths passing through each 'specific street segment' is a unique character of the segment. This number can be compared with the number of the other street segments within the same street network.

3) The hierarchy among these numbers, from that of the most shortcutting street segment with the most number to the least shortcutting one with the least number, can be represented in the Shortest-path Map of the urban street network. (Figure 8) Representation : The Shortest-path Map compares the sum number of shortcuts, from every street junction/end to all the other in the system, that specifically passing thru every street segment, then, comparing the numbers among the segments in hierarchical order. In the Shortest-path Map in Figure 8, the brighter and bigger represents the more shortcutting segment and vice versa. The map shows a variety of segments from the most shortcutting ones to the least shortcutting ones, from the white to the dark grey street segments on the black background as shown in Figure 8.

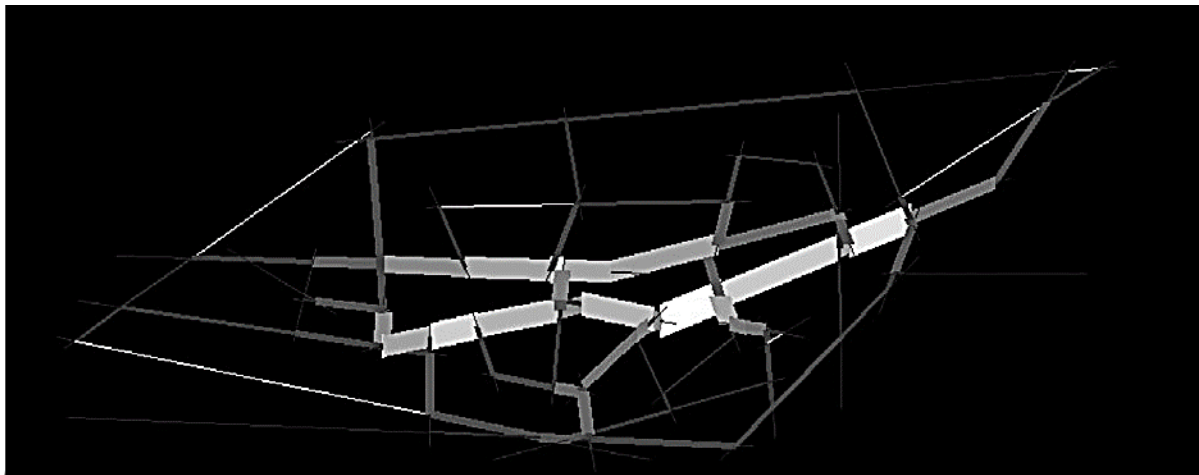


Figure 8: town G's Shortcut-Path Map based on Axial-line Map in Figure 2.

## **Network Compactness**

According to network study of Gassin town, the streets with white and brightest shades (fig. 8) combined with a group of the most central nodes (fig. 7) to form the compact core of the town. The central block that located among these streets should be viewed as the 'networking compact core' of this town.

## Discussion

### Comparison between Space Syntax model and Network Pattern Maps

Space Syntax and Network Pattern are differ both in terms of ‘elements’ and ‘calculation’. Therefore, the analysis patterns and their explanation of the city’s street pattern are different.

#### 1) The Elements:

Axial Map has single element, the Axial line, that calculated, using the Graph theory, as the node in the shortest-path graph.

In contrast, Network Map will break up Axial-line map into the two major elements namely the ‘node’ and the ‘edge’. The node is each street junction or end, that calculated as the node in the shortest-path graph, while, the edge is each street segment that calculated as the edge, i.e. the link, in the shortest-path graph.

#### 2) Calculations:

Space Syntax’s Axial Map calculates the integration of each Axial line from the average depth value as described earlier.

In contrast, the NP’s Central-Node and Shortest-path Maps base on the concept of the single and unique shortcut path from each point, namely street junction or street end, to every other point within the same street network.

Central-Node Map shows the degree to which each street junction and end (node) is being the ‘center’ of the system.

Shortest-path Map shows the degree to which each street segment is being the ‘shortcut path’ among all nodes in the system.

## Case Review

According to Space Syntax, the Kyojima town, with its organic winding street pattern, tends to be less integrated and less intelligible than the Honjo gridiron town. This is because the curving street network would make the Justified maps (Fig.3) of the broken axial lines deeper than the justified maps of the longer and straighter lines of gridiron town such as Honjo. In Kyojima, the correlation values of integration (radius 3) and pedestrian, integration (radius 3) and vehicle and vehicle and pedestrian are 0.368, 0.542 and 0.309, respectively. When we considered further it is easily found that the magnet shopping street of Kyojima, Tachibana Ginza, despite being segregated in terms of Syntax is dense with people and shops. It is very lively. Therefore, the shopping street can be described as having ‘the local effect’ of commercial magnet, but Space Syntax does not specifically illustrate further that what bring such local magnet and liveliness to the city as Kyojima.

In short, Syntax's principle, particularly the Axial Map modeling of urban street network, seems to have some significant limitations.

These include

- 1) Axial Map does not explain any key factor of 'local attractions' for specific type of urban street pattern such as the curvilinear pattern
- 2) Axial Map does not include any metrical structure of street pattern to depict city's space uses
- 3) Axial Map cannot explain why shopping streets locate in less integrated and less intelligible local streets in curvilinear town

From these limitations of space syntax model, the network model is developed in order to explain the specific location-based centrality's significance of each specific street segment and street junction. The application of these the network model includes site selection, particularly for business investment such as planning the commercial and office buildings, the department stores, real estate development for examples. If one can find both the *central integrating place* which can be easily get to by cars, as can be learnt from SS axial map model (fig. 6), and the *central shortcutting place* which can be easily get to by walking and cycling, as can be studied in NP short-cut path map (fig. 8), in the same location, one can invest in the place with high confidence.

## Conclusion

The centrality of urban street network in Gassin town can be studied by both axial model of Space Syntax and central-node map and shortest-path map of Network Pattern. While the axial structure shows Gassin town's integration core, Network Pattern models show the central points and the overall shortcut structure of the town.

As this case research shows the NP's Shortest-path Map and Central-Node Map reveal that the local attractive effect of the winding streets is significantly based on its distance-based characteristic. This should be called the networking centrality and the networking shortcutting capacities of street's junctions and segments. It is in the similar way that Nophaket, N. (2004b) found Tachibana Ginza and other shopping streets provide the shortest-path structure and form the central core of Kyojima town, Sumida-ku, Tokyo. Therefore, these streets and locations are the town center, or the shopping areas, even though the axial structure might seem insignificant.

By contrast to Space Syntax technique, Network Pattern model is originated on a more straightforward conceptual model of the street pattern. It bases on the 'real distance' that people have to commute through and within the city's street network.

In summary, it is clear from this study that for city planning and urban design for specific town we can apply the SS axial map model (fig. 6) to find the *central integrating place* to provide better access by cars, and apply the NP short-cut path map (fig. 8) to find the *central shortcutting place* which can be easily get to by walking and cycling.

This case study give further research questions;

How could integrated streets, central nodes and shortcut patterns combining to form the compact core of city?

Which street segments of real city could attract commercial uses, as being the town center, and by which factors?

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