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2015 ProSPER.Net Leadership Programme

Field Case Studies showcasing: ‘Transformational Leadership in Implementing and Assessing Sustainability Projects’

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The Leadership Programme content is geared towards contributions to achieving the Sustainable Development Goals (SDGs), which were adopted at the United Nations Sustainable Development Summit in 2015, as part of the 2030 Agenda for Sustainable Development, to end poverty, fight inequality and injustice, and tackle climate change by 2030.

Integrating the principles of sustainability in higher education: A case study of the University Malaysia Sabah

Stateless but not hopeless: Empowering children of illegal migrants of Sabah through basic education

Transformational leadership in the promotion of sustainable practices: A case study of the Palace Hotel, Kota Kinabalu, Sabah

Ecotourism and transformational leadership in Pulau Gaya Island: A stride toward sustainable development

Sustainable Highland Development – A Case of Bundu Tuhan, Kundasang, Sabah, Malaysia

These papers are based on five case studies in the field. Students of the ProSPER.Net Leadership Programme were asked to demonstrate the concept and core principles of Sustainable Development and Education for Sustainable Development as well as arguments on transformational leadership in implementing and assessing sustainability projects.

The aim of the ProSPER.Net Leadership Programme is for participants to gain skills in communication and consensual decision-making processes, gain competencies in adaptive leadership, enhance critical and systems thinking abilities, management and assessment through problem-based learning cases in local communities.

Integrating the principles of sustainability in higher education: A case study of the University Malaysia Sabah

Preeti Aggarwal, *Corporate Social Responsibility Lead, Viom Networks Limited, India*, Ravindra Rattan, *Anthropological Geography, University of Porto, Portugal*, Ruwaidiah Idris, *School of Informatics and Applied Mathematics, University Malaysia Terengganu*, Khalid Hossain, *Head of Climate Change Programmes, Christian Commission for Development, Bangladesh*

Introduction

According to Nelson Mandela, “education is the most powerful weapon which you can use to change the world” (Mandela, 2003). It can aid in building knowledge, skill-sets and competence in individuals, which are prerequisites for national economic growth and sustainable development.

Among the various levels of education, Higher Education Institutions (HEIs) are increasingly playing a pivotal role in addressing global challenges in a more holistic and realistic manner. These institutions educate the next generation of leaders and decision-makers who will bring forward possible solutions for identified challenges. These HEIs provide a microenvironment of diverse and multifaceted social context for their students, where they continue to seek knowledge and truth as well as apply information in solving the complex problems of society (Brubacher, 1977).

Gough and Scott (2007) state that HEIs should aim to cultivate critical thinking among young students with the aim to create a prosperous society. However, in recent years, HEIs continue to face three major challenges, while incorporating prosperity and sustainability concepts in their curriculum and day-to-day

operations. First, the growth agenda of university renders a huge impact on its environmental footprint, owing to an increase in student population and their campus activities. The adoption of systematic measures that control HEIs operational activities can largely aid in achieving the environmental sustainability agenda at the campus level (Jain et al., 2013). Second, the operational activities of existing HEIs have failed to reflect on the impact of a ‘disturbed ecological balance’ on human well-being due to the overpopulation and exploitation of natural resources. The operational set-up such as location, infrastructure, transport, and other, as well as interactions with social enterprises (residential, industrial, and governance) of HEIs play a notable role in helping the students to recognize the importance of the socio-cultural aspect of sustainability within local and global contexts. Third, the implementation of sustainability projects in HEIs may render a huge financial burden on their overall system (Justine, 2015). They would require financial support from the government and private organizations, along with exhaustive stakeholder commitment to ensure the successful achievement of economic sustainability during implementation of sustainability projects, at the organizational level.

HEIs will continue to play a pivotal leadership role in shaping young minds and societal norms (Bowers, 2001; Clugston, 1999). This paper intends to understand how HEIs integrate sustainability as a way of life on campus and underline the possible challenges they may face in the near future. The 2015 ProSPER.Net Leadership Program provides an excellent platform for studying the EcoCampus project of University Malaysia Sabah (UMS), which intends to emerge as a key HEI player in promoting global transition towards sustainable development (SD). With the case of UMS, this paper intends to answer the following

research questions: 1) How can HEIs integrate the principles of sustainability into their campus programmes? 2) Who are the appropriate stakeholders? 3) How do HEIs' sustainability actions effect local and global environments?

This study aims to investigate these research questions through a case study of the UMS campus, with the following three research objectives:

- 1) Understand how the EcoCampus initiatives of UMS aim to integrate sustainability principles.
- 2) Demonstrate how transformational leadership plays a key role in promoting sustainability at UMS.
- 3) Identify key challenges and plausible actions for effective adoption of sustainability principles.

Role of HEIs in Education for Sustainable Development (ESD)

According to the United Nations Educational, Scientific, and Cultural Organization (UNESCO), Education for Sustainable Development (ESD) is defined as "...a learning process (or approach to teaching) based on the ideals and principles that underlie sustainability and is concerned with all levels and types of learning to provide quality education and foster sustainable human development..." (Wals, 2009). The educational centre can continue to imbibe principles of sustainability, which in turn can play a significant role in the revival of educational systems. Furthermore, the inclusion of principles, skills, perspectives and values into academic life related to social, environmental, and economic dimensions of sustainability can help in bringing systemic change in our societies.

In the last few decades, HEIs have emerged as the centres for innovation targeting sustainability challenges and setting up their campuses as living

laboratories for demonstrating sustainable development (SD) actions for society (Mader, 2013). Finger (1995) proposed social-environmental learning pedagogy that emphasizes collective learning as a way to break the vicious social or economic cycles. In this context, HEIs would play a significant role in promoting SD since collective learning in its system can transform the entire organization while facilitating individual learning. Therefore, HEIs can not only introduce the concept of SD to younger generations, but also develop their capabilities to solve global problems while working for governmental, educational and other institutions. Further, HEIs can emerge as a hub of academic experts who continue to provide advice for enabling change towards a sustainable future.

According to the Organisation for Economic Co-operation and Development (OECD) (2007), HEIs continue to facilitate the sustainable development agenda while facing several challenges, as the process of SD integration is quite complicated and exhaustive, especially for institutions in developing countries. HEIs are working for global sustainability needs through a proactive action and youth development agenda while simultaneously encountering the increase of their own environmental footprint, complexity in socio-governance systems, as well as a dearth in financial budgets needed for building green infrastructures and courses. Jain et al. (2013) noted that identification and involvement of appropriate stakeholders during integration of SD strategies into HEIs' curricula could aid in mitigating the above-identified challenges.

Consequently, the above-cited study suggests that the presence of multi-curricula integration of sustainability elements in all spheres of an HEI's education system (general, specialized, graduate, standalone, co-curricular) and adoption of implementation projects would

determine the successful integration of SD at campus level. There is a need to focus on how to evaluate and improve outcomes of education, to promote quality teaching and to build social cohesion through education. Furthermore, there is a critical need to develop a motivated and self-driven workforce within HEIs who will lead the effective implementation of sustainability curriculum and its impact realization (Justine, 2015; Razak, 2014).

In the context of rapidly developing countries, especially India, China, Indonesia and Malaysia, the sustainability challenges are severe. This is due to the current rates of environmental degradation and economic growth, amidst the paradoxical coexistence of poverty and affluence in their multifarious dimensions. These challenges are directly affecting the conservation efforts of our life support systems, including land, water, air and biological diversity.

An in-depth analysis of the early stages of education systems in industrialised regions and environmental impacts during colonial times show a similar association. During the group discussion of this study, it was observed that the colonial education system in western regions primarily focused on promoting economic development through education (Enwo-Irem, 2013), which may have resulted in creating a cultural, economic and social divide among school educated and other sections of society. Alternatively, modern education systems, especially in developing regions, continue to adopt participatory approaches within their innovative framework of delivery. This has resulted in improving intra-department connectivity, and communication and research in the HEIs. This has further equipped HEIs to align young minds to realize their individual responsibility and continuously work to solve green growth issues (Hezri, 2015). Therefore, there lies a huge potential for HEIs in developing

nations to integrate SD and align themselves to solve overwhelming socio-economic and environmental problems.

Five key indicators of defining a green school emerge, from curriculum integration, to better space in the school architecture, community-based education, campus sustainability and administrative support (Tsai, 2013). Many HEIs have adopted these concepts and have started to integrate SD in their educational system.

For instance, Hosei University (Japan) intends to become an open and green university in 2017. This would involve development of conscious leaders, researchers and graduates who will be able to adapt to the changing needs of Japanese society and provide sustainable solutions (Johnston, 2007). The Chalmers University of Technology (Sweden) is driving the mainstreaming process of sustainable development by promoting planetary stewardship. It aims to introduce transformative and lifelong learning. The campus will evolve as a place that inspires creativity in students and helps them understand sustainable development. The Turku University of Applied Sciences (Finland) and the University of Copenhagen (Denmark) intend to be leaders in sustainable development by maximising their global responsibility and leadership roles thereby facilitating knowledge transfer, capacity building and increasing the mobility of staff and students (Johnston, 2007).

In the Indian context, TERI University continues to adopt and promote the concept of ESD. Its campus demonstrates the importance of reducing its energy footprint through green building technologies, which lays a path for students to think about out-of-the-box solutions targeting local environmental problems (Jain et al., 2013). TERI University demonstrates in particular how the active support of various stakeholders,

such as the local community (residential associations), administrative and non-governmental authority, governmental, academia and industrial partners can help in effective SD technology implementation at the HEI level.

On the other hand, the academic literature has argued different aspects of leadership, while laying emphasis on transformation of HEIs leading to imbuing sustainability. It is important to highlight that when an HEI acts as a pivotal focal point to achieve sustainability for its community, then it integrates a sustainable approach where ecosystem and development are technically looked after. This is achievable by continuous recognition and adoption of several competency leadership frameworks at the HEI level.

According to Bolden et al. (2003), the leadership thought of school has evolved from the 'Great Man and Trait theories' to a 'Transformational theory' of leadership, where the latter focuses on the role of followers and contextual nature of leadership. In 1978, James McGregor Burns introduced the concept of transformational leadership as a process where "leaders and their followers raise one another to higher levels of morality and motivation" (Burns, 1978; 530). Several universities were successful in adopting transformational leadership resulting in the holistic integration of sustainable development as part of their programmes (Leal Filho, 2015). It can be observed that most of these institutions identified the need to deal with challenges of changing times, emerging as adoptees of a transformational leadership concept, which is very near to the traditional model of transactional leaders. This type of leadership framework can help HEIs to provide their members and associates with a sense of purpose to attain a sustainable way of life that goes beyond a simple exchange of rewards for effort provided.

Kodoma (2011) emphasized that the mere improvement of the natural environment in HEIs cannot exhibit leadership in promoting sustainability. They must act in a way that the concept of sustainability becomes interdisciplinary and all academic disciplines participate in the process. In this regard, Sibbel et al. (2013) emphasized curriculum innovation to promote sustainability in HEIs. They argued that teaching and research staff could lead sustainability education in local contexts to ensure engagement of all stakeholders. However, Brown (2010) has argued this point by stating that it is not the job of research and teaching staff to promote sustainability in HEIs. He emphasized the role of the university itself.

Recently, Wright and Wilton (2012) interviewed 37 facility management directors of several Canadian universities to capture their perceptions regarding the leadership role of HEIs in promoting sustainability. Most of the directors thought that HEIs should play a 'leading by example' role to show communities the best way to approach sustainability. This example setting has been unpacked by Lozano et al. (2013: 18) as they argued that HEIs can become sustainability leaders and change drivers by empowering university personnel and introducing sustainable development into its curricula as well as all other activities of the HEI. They also emphasized on proper academic recognition of the importance of multi-disciplinary and transdisciplinary teaching, research and community outreach for speeding up the societal transformations towards sustainable development (Lozano et al., 2013).

Based on the above discussion, the present case study aims to identify how the EcoCampus transformation of UMS is reflected in the commitment of its leadership team in order to achieve its sustainability target in the defined period. It also highlights how UMS incorporated

local, national and global environmental challenges during its planning and implementation process.

Research methodology

A qualitative research approach, using a case study of UMS, was used. According to Flyvbjerg (2011), case study research design offers 'depth, high conceptual validity, understanding of context and process, understanding of what causes a phenomenon and fostering new hypotheses and research questions.' Moreover, case study design is suitable in answering research questions posing 'how' or 'why', when 'the investigator has little or no control' and when the focus is on a 'contemporary set of events' (Yin, 2009). In considering all of these factors, this study adopted the case study research method for data collection.

To collect primary data, the researchers used focus group discussion, in-depth semi-structured interviews and observation techniques. To ensure qualitative data triangulation, the case study used document analysis as a data collection technique and incorporated data from secondary sources like reports and expert presentations. All the data collected were manually analysed through thematic analysis by identifying key themes in line with the research objectives. UMS was used as the unit of analysis where higher education and sustainability principles based data were collected and analysed.

Sustainability initiatives at UMS Sabah

The fifth Yang di-Pertuan Agong (King) of Malaysia established UMS on November 24, 1994 (UMS, 2015). It is the ninth public university of Malaysia spread over an area of 999 acres in Kota Kinabalu, Sabah (Malaysia). Currently, it has 2,000 staff members and more than 19,000 students enrolled in ten science and humanity faculties. The university's vision is to emerge as an innovative university of global standing and as a key player in

promoting ESD. They understand that their decisions and actions will have a significant impact on environmental, economic and social aspects of the population (UMS, 2013).

Being one of the top 15 universities in Malaysia, UMS shares an academic legacy of more than 20 years in the field of science, arts, commerce and future research. Recently, in the year 2013, the leadership team at UMS recognized the need to change their philosophies and align them to promote education inspired by the concepts of SD. Subsequently, they introduced an academic transformation process that recognizes their responsibility to educate all stakeholders on the aspects of responsible stewardship (Justine, 2015).

In order to promote the concept of environmental sustainability at the HEI level, the EcoCampus project started in 2013 with the objective to provide a platform for active and systematic actions. The key indicators of the EcoCampus project shares similar characteristics when compared to Leal Filho's 'green campus', as discussed in the following section. The integration of SD at UMS is in fact two-faceted by evolving UMS as an EcoCampus, a living embodiment of sustainability principles and promoting Campus Ecotourism, through preserved artefacts and museums.

Key features of EcoCampus

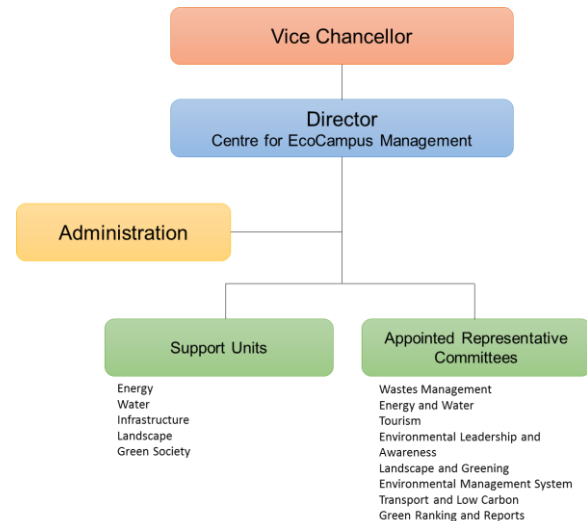
According to Justine (2015), the EcoCampus concept of UMS aims to integrate environmental excellence in teaching and learning, research, infrastructure development, management and operational practices, and in overall campus experience. Under the guidance of the Chancellor and the Board of Directors, the university's Vice Chancellor defined ambitious target of making UMS a green university within the span of 5 years. The first key step of the transformation process was to identify six key elements which

determine and measure the success of the transformation.

A new 'Centre for Eco-Campus Management' was established with key stakeholders from various faculties, research centers and administration of UMS. This center holds primary responsibility of identifying the core work plan for effective implementation of the EcoCampus project. After exhaustive brain storming and stakeholder consultation, the EcoCampus committee decided to work on five core values: sustainable development, ecological protection, resource conservation, environmental stewardship and environmental compatibility (Eco-Campus Management Centre, 2014). These core values were adopted to arrive at 1) increasing environmental awareness and climate change adaptability, 2) motivating social change and actions, 3) cultivating environmental leadership, 4) driving sustainable economic benefits, and 5) attaining global recognition.

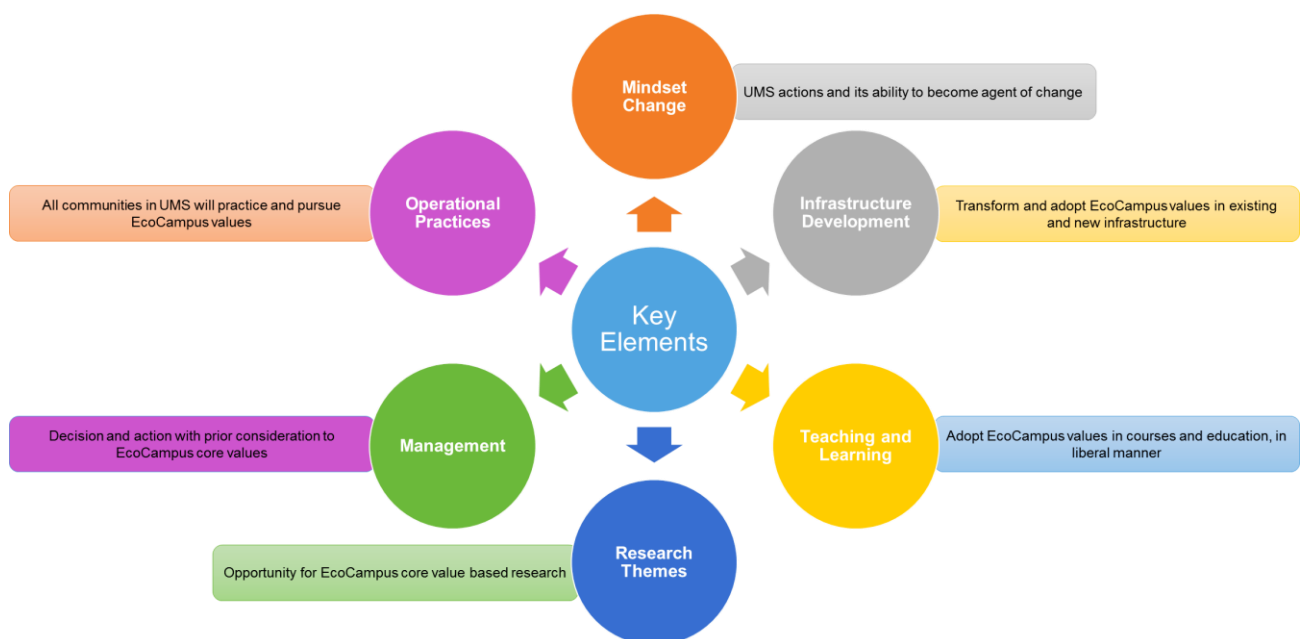
Subsequently, this center became responsible for continuous development, implementation, monitoring, assessment and review of the planned core activities.

Among the EcoCampus Committee members and stakeholders, the director of the EcoCampus center was responsible for implementing the transformation plan by active involvement and support from identified departments.



Organization of UMS EcoCampus transformation plan (UMS, 2013)

Eight representative committees were established to work on specified thematic areas ensuring appropriate task allocation and mass participation at campus and local community level.



Key elements of EcoCampus transformation plan (UMS, 2013)

The group discussion showed the need for demonstration of strong ‘transformational’ leadership skills by the leadership team of UMS and its faculty members in order to get involved in direct implementation and collaboration with other stakeholders/institutions. Further interactions and exchange of ideas with the research community and its partners can aid in successful implementation of an SD strategy. The group discussion of the study revealed that there was a need to emphasize on taking ownership and setting examples for young faculty members and researchers to motivate them to imbibe sustainability values within their activities.

On the other hand, student’s involvement in this project was largely limited to exposure to the principles of sustainability through curriculum and infrastructural changes happening on the campus. Sharp (2002) noted that student partnerships is one of the many approaches which can maximize the survival and expansion of greening campus initiatives. This untapped potential of UMS students could be utilized by identifying interested and exceptional individuals, mentoring future leaders through representative committees and making them responsible for research and implementation of green projects on campus (as suggested by Lozano et al, 2013).

EcoCampus actions and plans

According to an interview with Professor Justine (Director, EcoCampus committee) and detailed group discussions, the UMS commitment to imbibe the sustainability principles of higher education resulted in defining its EcoCampus strategies. In 2013, the UMS leaders made some strategic decisions based on their interactions with identified stakeholders and implemented several programmes.

The group discussion with the UMS implementation faculties revealed that the initial phase of implementation involved

the alignment of several schools at UMS into ten specific centres. Alongside this activity, the modification of the existing curriculum resulted in the integration of SD components, post exhaustive review and departmental consultation. This action was led by higher management at UMS supporting a top-down approach to sustainability project implementation, which was later followed by actions from mid-line leaders (centre and faculty heads) and teachers. The observed downward delegation of responsibility resulted in acceptance of SD integration among faculty as well as better knowledge, understanding and leadership skills among the students of UMS. With a basic understanding of sustainability, student employability, external funding and recognition are expected to increase. Additionally, the added benefits of cost saving and closer engagement with local and international communities were observed during project implementation.

However, Justine commented that there was an initial resistance in adopting the modified curriculum by current researchers and faculty members. Hussin and Kunjuran (2015) have noted that instructors can play a significant role in translating the concept of sustainability through effective educational methods. However, Krizek et al. (2012) noted that successful implementation of sustainability projects requires active support of leadership and extensive mind-set change among the involved stakeholders.

During group discussions, identification of local champions among faculty members emerged as an important factor in order to lead a mind-set change initiative and increase the acceptability of the new curriculum among peers. For instance, heads of faculty can become local champions who work with their faculty members and emphasise the need to adopt new SD principles in their teaching and research.

Phase/ Year	Main Activities
Phase 1/Year 1 (Jan-Dec 2013)	<ul style="list-style-type: none"> • <i>EcoCampus initiative launched</i> • <i>Governing body for EcoCampus established.</i>
Phase 2/Year 2 (Jan-Dec 2014)	<ul style="list-style-type: none"> • <i>Environmental Management System (EMS) initiated towards MS-ISO 14001</i> • <i>Energy, Water, and Paper Saving programmes reinforced</i> • <i>Research proposals on environment and sustainable development</i> • <i>Outreach programmes established</i> • <i>Emphasis on the environment and sustainable development programme contents reviewed. Introduction of environmental perspectives in the curriculum</i> • <i>3R project/5R (Reduce, Reuse, Recycle, Renew and Respect), emission reduction project, and energy conservation project implemented</i> • <i>EcoCampus seminars and workshops organised</i> • <hr/> <p><i>Carbon footprint reduced (greening of the campus)</i></p> <ul style="list-style-type: none"> • <i>Milestone projects implemented</i>
Phase 3/Year 3 (Jan-Dec 2015)	<ul style="list-style-type: none"> • <i>Progressive training of staff in environmental management system</i> • <i>Environmental audit carried out (conformance of environmental procedures documented)</i> • <i>Green investment mechanisms established</i> • <hr/> <p><i>Environmental Management System (EMS) implemented.</i></p> <ul style="list-style-type: none"> • <i>International recognition and accreditation</i>
Phase 4/Year 4 (Jan-Dec 2016)	<ul style="list-style-type: none"> • <i>Audit and management review conducted</i> • <i>Results through international frameworks engaged and shared</i> • <i>Networks to discuss best practice and exchange ideas set up</i> • <i>Continuous improvement reviewed</i> • <hr/> <p><i>Environmental solutions to other institutions of higher education to achieve EcoCampus status provided</i></p> <ul style="list-style-type: none"> • <i>Procurement policy in place</i>
Phase 5/Year 5 (Jan-Dec 2017)	<ul style="list-style-type: none"> • <i>Continuous improvement reviewed</i> • <hr/> <p><i>Continual improvement reviewed</i></p> <ul style="list-style-type: none"> • <i>EcoCampus status declared</i>

Phases of UMS EcoCampus implementation (Adapted from Justine, 2015)

Along with the revival of the curriculum, the EcoCampus committee conducted energy consumption, waste generation and water consumption reviews/audits on campus. This resulted in the identification of several action points and gaps in the environmental footprint of the university. The interactions with several faculties such as the Faculty of Engineering and the Faculty of Science and Natural Resources helped in both the identification and introduction of green and waste management technologies. For instance, a pilot project at the Chancellery building with an automatic electricity-use data logger continues to monitor energy consumption in order to plan for future energy consumption plans. In addition, the construction of solar power and rainwater harvesting structures are integrated features of the EcoCampus. A recycling centre at the UMS EcoCampus-BinaPuri Learning Centre is in progress.

The EcoCampus committee realised the need for more financial support to introduce these green technologies and actively engage the UMS management, governmental agencies and other external partners for funding research. Further, the Malaysian Ministry of Higher Education has promoted and continuously recognised UMS's efforts through financial and intellectual support.

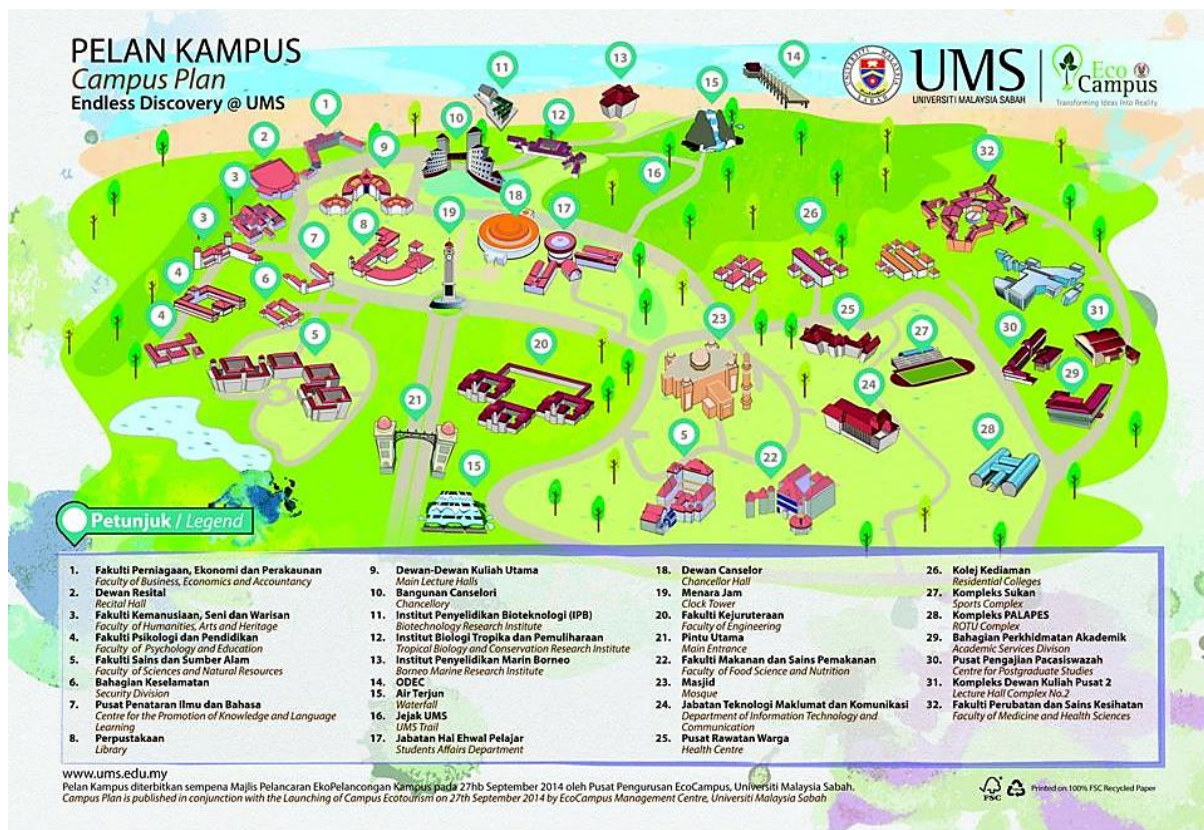
Sustainable practices are integrated in the daily operational practices at UMS through several checklists, awareness sessions and student campaigns. These include a green office checklist, a student living checklist, sustainable kitchen and restraint guidelines and awareness campaigns for students. To date, student awareness on environment protection and resource conservation issues has increased due to EcoCampus Committee actions. However, there is a need to proactively involve students in providing innovative solutions for sustainability challenges on campus.

For instance, students can lead projects on sustainability and community engagement at the UMS campus by using traditional knowledge aimed at conserving energy, water and biodiversity. This would promote the adoption of a bottom-up approach to ensure better implementation of desired sustainability projects.

It is important to note that UMS has received several recognitions for its EcoCampus and sustainability initiatives, which reiterates the commitment of the leadership team in transforming educational practice at the HEI level through an active and effective implementation scheme. They have adopted a *Plan, Do, Check and Act* (PDCA) approach during the implementation of sustainability actions. However, a strong need to adopt methods for 'checking' or 'monitoring' the impacts of these sustainability initiatives should be emphasised. For instance, planned maintenance and routine checks of the solar power systems, rainwater harvesting structures and other proposed green infrastructures in initial phases can provide a learning opportunity for the expansion and new constructions in different blocks of the campus. This would pave the way for incorporating desired changes prior to full-phase implementation of an EcoCampus plan at UMS.

Community engagement and ecotourism

Beyond systemic change at the UMS campus, the EcoCampus committee has recently introduced the concept of ecotourism in order to create awareness among other stakeholders (students and the community at large) and to generate financial support for on-going projects. The Faculty of Science and Natural Resources leads this initiative by developing an extensive layout of the EcoTour, which is available to individuals visiting the UMS campus.



Ecotour map of UMS (Justine, 2015)

According to Justine, from early 2014 to June 2015, nearly 50,000 tourists visited the three museums at the UMS campus. This footfall of eco-tourist should increase manifold as soon as the EcoCampus Tourism Centre becomes operational at the end of 2015. During the UMS sight visit and focus group discussion, the UMS campus emerged as a micro-ecosystem in itself – blessed with an exceptional landscape (a natural beach, a waterfall, and impressive built terrain) as well as a rich biodiversity (natural and specimens preserved in the museums). This place will not only provide a rejuvenating experience to any visitor, but also educate them about the significance of flora and fauna in the Malaysian part of Borneo.

The tropical biodiversity and marine museums help spread awareness on biodiversity and conservation. The Tropical Biodiversity Gallery displays many endemic insects, mammals, birds and reptiles.

This includes art and biological specimens, as the museum displays a mural of the Borneo Orangutan, an endangered species of great apes native to the region. Further, the visit to museums, galleries, Chancellor Hall and the Pink Mosque provides an insight of the rich academic, cultural and environmental conservation initiatives undertaken by the EcoCampus initiative.

The leadership team at UMS were keen to promote the EcoCampus as a one of its kind 'Eco-tourism location' in Malaysia. One of their active interventions is to generate income from the Eco-tours by introducing an 'entrance' or 'conservation' fee. They are also developing a social media app 'Tourist Map & Guide' that identifies places of interest and provides information on basic amenities (such as water, food and restrooms). This initiative also aims to focus on 'active student participation' by mentoring them as tourist guides. It would provide a platform for students to grow professionally by 1) learning and educating about the concept of sustainability, 2) interacting with

national and international tourists, 3) provide a source of income; 4) develop a sense of ownership and helping them become agents of change. This introduction of ecotourism in a HEI will be a novel concept, with higher perceived awareness impacts on students, researchers and visitors.

However, the increasing footfall of people might disturb the sanctity of the educational system, exposing students, researchers and faculty members to unwanted intrusions and frequent disruptions. During the field visit, the UMS campus emerged to be less than friendly for disabled and elderly individuals, making it necessary to rethink infrastructure, signage as well as other systems. The group discussion suggested a strong possibility of ethical violations such as unwanted capturing of fauna/flora for live and mural displays at several museums for educational purposes. However, this could be avoided, as the introduction of ecotourism presents an opportunity for the sustainability leaders at the UMS EcoCampus to think beyond the concept of 'museology' (as suggested by Chang, 2015). This can present a prospect for becoming leaders in preserving 'natural ecosystem and cultural heritage' within university campuses with the active support of students, faculty members and the local community.

Conclusion and recommendations

Several HEIs in Asia, including Malaysia, are working on integrating sustainability principles into their education pedagogy and daily operations. However, it is critical to emphasize the difference between successful project implementation and institutional transformation. According to Sharp (2002), several efforts of transforming universities to green campuses can help us in successfully implementing the goal of systemic transformation. UMS EcoCampus has started its journey of becoming an

exemplary green university for peers and new education institutions. They have adopted sustainable strategies and are undergoing rapid transformation in the face of changing environmental dynamics. With the implementation of mandatory programs on sustainable development, they have ensured that every student acts as an ambassador when they return to their villages or communities. Therefore, for UMS to remain truly competitive over time, as the environment changes, it will need to learn to adapt and reorient to the changing environment.

In its second phase of implementation, it can adopt the following recommendations for effective sustainability implementation at the institutional level:

1. Increase student partnership in driving ESD at UMS
2. Identify champions among faculty and researchers to increase acceptability for new SD based curricula
3. Develop monitoring and evaluation methods of the impact of sustainability projects at UMS
4. Eco Tour project to be reassessed in order to maintain educational sanctity of HEI
5. Rework the existing infrastructure and make the campus more disabled-friendly

The discussions reveal that the EcoCampus concept has emerged as an effective method of creating awareness on sustainability issues among every level of the society. However, UMS may be slightly behind in assuming a leadership role among HEIs as it is yet to imbibe all of the dimensions of sustainability. The current transformation plan of UMS seems to focus more on environmental and economic aspects of sustainability while broadly missing the social aspect of it. According to Razak (2014), it is important for HEIs to adopt the 4Ps of sustainability:

Prosperity (economic aspect), Planet (environmental aspect), People (socio-cultural aspect) and Politics (geo-political aspect). Moreover, scholars like Wright and Wilton (2012) emphasized that HEIs should 'set examples' for the community to be sustainability leaders. Therefore, it is very important for HEIs to engage in policy advocacy and disseminate their best practices to influence policy. However, the study showed that UMS needs further improvement in this area. There is an inevitable need for the UMS to increase effective policy advocacy, both at the local and the global scale, in order to influence policy planning and decision making with increased adoption of sustainability aspects.

While some literature highlighted the role of academics and others the role of management in promoting sustainability, this study finds it imperative to have joint and coordinated actions by all involved in a HEI to become a sustainability leader. At the moment, as the process is driven by a section of academics at the UMS without broader engagement of everyone concerned, it is important that the leadership, faculty members, researchers, staff and students are actively involved in solving local community issues, especially on environmental degradation, biodiversity conservation, livelihood generation and immigrant settlements to make UMS a sustainability leader.

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Stateless but not hopeless: Empowering children of illegal migrants of Sabah through basic education¹

“What if the cure for cancer is trapped inside the mind of someone who cannot afford education?” - Unknown

Chiden Balmes, Global Green Growth Institute, Jusiah Idang, Universiti Malaysia Sabah, Nor Omaina Harun, Universiti Malaysia Terengganu, Mohamadu Boyie Jalloh, Universiti Malaysia Sabah

Introduction

The children’s cheerful laughter was contagious, pervading the cramped halls of the Numbak Vision Center. Built in a village above water, near the coast of Borneo, this learning center is home to around 300 students, whose smiles would make any visitor feel at home, despite the draining heat and humidity inside the classrooms.

These children share a common story: their parents are mostly from Mindanao in the southern part of the Philippines but took the chance to settle down in Sabah. Due to the conflict in Mindanao and the prospect of economic opportunities in neighboring Malaysia, the number of illegal Filipino migrants in Sabah is approximately 80,000. Being born and raised in Malaysia, most of the children can only speak Bahasa instead of their parents’ native tongue. Most strikingly, these children are neither considered Filipino nor Malaysian citizens due to lack of proper registration (birth certificates or proof of legal residency). Simply put, they are undocumented.

¹ This article is dedicated to the children of the Numbak Vision Center. May this paper shed more light on the issue and help spur more transformative actions in uplifting the rights and welfare of undocumented children.

Problem

The children’s status as illegal migrants is no doubt problematic, making it difficult for them to avail of even the most basic public services to meet their basic needs. Access to education and health services is paramount to ensure a sustainable livelihood for the residents of Kampung Numbak. While gaining access to these vital services is already a challenge for the urban poor, the struggle is much harder for those without legal citizenship.

Amid the transboundary nature of illegal migration, the number of undocumented children in Malaysia who do not have access to public education services is staggering and this situation may lead to perpetual problems. When these children become adults, they will suffer from a form of poverty trap, due to minimal opportunities to land a decent job, and will most likely succumb to exploitation in various forms.

Objectives

The 2015 ProSPER.Net Leadership Programme selected the Numbak Vision Center as one of the programme’s case studies. The Center was examined through the lens of sustainability and transformational leadership in the context of providing education services to marginalized communities. Our group was grateful to be assigned to write about this pressing issue as it resonates in many countries facing similar dilemmas brought by the influx of illegal migrants.

To address the challenge of fostering sustainability in a marginalized urban area like Kampung Numbak, this paper tackles the question on how leadership transformation can promote social sustainability in the context of education

development. It explores the current initiative of the Numbak Vision Center in providing an alternative form of education for undocumented children, delving into how it addresses the gaps in providing access to education for marginalized students and the possible recommendations to enhance the effectiveness of the program.

Research methodology

The group conducted a field visit to the Numbak Vision Center to observe the classroom activities and interact with the pupils and teachers. The brief talks with the pupils were carried out during classroom hours upon the permission of the teachers and school authorities. During the field visit, in-depth interviews with the teachers were also conducted to obtain more firsthand information about the overall condition of the learning center and its day-to-day activities. The information gathered was then analyzed based on thematic issues to answer the objectives of the paper.

The humble stage of Numbak Vision Center for



everyday activities.

Aside from conducting participant observation during the classes and interviewing the students and teachers, a panel discussion with South Korea's Food for the Hungry International (FHI) representative, Mr. Lee and other key stakeholders was held to obtain more personal information from the people on the

ground. Thus, the succeeding analysis in this article – complemented by desktop research on the plight of illegal migrants in Malaysia – is largely based on the qualitative data obtained during the field visit and panel discussion. The experience revealed how transformative actions can make a significant impact in the lives of the migrants' children despite the seemingly unsurmountable challenges.



The students of the learning center are ethnically Filipinos residing in Malaysia but without any legal citizenship.

The universal right to basic education

The Universal Declaration of Human Rights (Article 26: 7) highlights education as a fundamental human right. Specifically, it guarantees that “education shall be free, at least in the elementary and fundamental stages.” Since it is deemed universal, it applies to all people, regardless of differences in nationality, gender, ethnicity, religion, and socioeconomic status.

Upholding Article 21 of the Malaysian Federal Constitution – which recognizes the right of a child to gain access to education regardless of location and economic status – as well as the Education Act of 1996 – which mandates the provision of free education for every school-aged child – Malaysia has an impressive achievement of providing access to primary education for both boys and girls, with 96% of its children enrolled in school as of 2005. This is crucial

for Malaysia to realize the objectives and targets of the *Eleventh Malaysia Plan 2016-2020* (“Anchoring Growth on People”), which aims to transform Malaysia into an advanced nation that is inclusive and sustainable by 2020.

Despite these remarkable strides in basic education, some disadvantaged groups are unfortunately left behind. Notable gap remains in terms of reaching out to underprivileged and vulnerable children, specifically from the indigenous groups within the country, as well as undocumented migrant children. In the UNICEF Annual Report 2014, the UN High Commissioner for Refugees (UNHCR) and the Federal Special Task Force (Sabah/Labuan) estimates that approximately 20,000 of the 30,000 children coming to Malaysia from countries such as the Philippines, Indonesia, Vietnam, Bangladesh, India, and Pakistan are school-aged, and that only 7,000-10,000 illegal migrants’ school-aged children have access to basic education programs.

The UNICEF Annual Report 2014 describes the weak legal enabling environment for marginalized children in Malaysia. The country has not acceded to the 1951 Geneva Convention on Refugees, a key legal document that defines who a refugee is and their rights as well as the legal obligations of states. Malaysia is also not a signatory of the 1967 Protocol, which removed the geographical and temporal restrictions of the Convention. Furthermore, the UNHCR notes that Malaysian law makes no distinction between refugees and undocumented migrants. Against this backdrop, it is evident that the country’s legal and institutional framework is still inadequate to deal with the challenges brought by illegal migrants. This makes their life an everyday struggle for survival and amid this chaos, the

children become the most hapless victims. Many of them are out of school and forced to do child labor. Worse, some of them resort to drug abuse, petty crimes, sexual slavery, and even terrorism.

How transformative leadership fosters education for stateless children in Sabah

Established in 2002 by Food for the Hungry International (FHI), the Numbak Vision Center has a total of six teachers who teach basic subjects, namely English, Math, Science, Malay, and Morals. Mr. Simon Lee, representative of Korea’s FHI, and his group of staff and volunteers warmly welcomed us to the school. During the field visit, we enjoyed observing the classes, playing with the kids, and even participating in the class activities. Having a chat with the children was an eye-opening experience. We asked them what they dream of becoming someday and perhaps due to their limited exposure to other professions, we only heard two answers – children stated they wanted to be either a policeman or a teacher. Most of the boys wanted to be as powerful as they perceived policemen to be upon witnessing many times how the local police would threaten their parents to leave Kampung Numbak because of their illegal status.

The most inspiring moment of the field visit was to learn about the relentless energy of the teachers and staff of the learning center in making sure that despite the lack of adequate resources, the children could still make the most of their childhood by learning useful skills in basic education and participating in extracurricular activities.

Although the scarcity of available resources puts the quality of teaching and learning at risk, the teachers have learned how to be resourceful. In desperate situations, they even have to spend their own money for teaching materials and other school

expenses. Despite all these difficulties, the teachers emphasized the need to stay positive and enthusiastic, especially in front of the children, who also have to suffer every day from the lack of proper ventilation (the lack of ceiling in the classrooms makes the temperature unbearably hot, especially during summer), overcrowded classes, and limited school supplies. Based on our class observation and interview with the children and teachers, the wide range of age in one class should be a cause for concern. For instance, one class had students aged 5 to 14 years old. There were even young girls in their early teens who are taking care of their babies while in class. Apparently, teenage pregnancy is common in Kampung Numbak due to the lack of reproductive health education, thereby perpetuating the vicious cycle of poverty in the community.

The center also attracts a number of volunteers from time to time by word of mouth to outsiders about the advocacy of the center. During the field visit, we were fortunate enough to witness one of the activities of the volunteers. A group of philanthropists from a local NGO visited the center and it was very moving to see how they brought so much fun to the kids by simply reciting a poem to them, singing hymns and songs, and sharing food together. Mr. Lee emphasized the importance of inviting volunteers who could spare some time in the center. He believed that the children's learning experience, notwithstanding how deprived they are of material comfort, should not just be confined within the classroom. By exposing them to people outside the school, the children learn how to socialize and develop local community awareness.

During the stakeholder discussion, Mr. Lee shared the everyday struggles on how to sustain the operations of the school by

exhausting all possible funding mechanisms, how to convince parents to send their children to school, and how to eliminate the social stigma of the local people toward illegal migrants. Despite the difficulties, he is driven to make a difference in the lives of the children and the local community as a whole and he exudes a level of confidence and charisma within his team that drives its members to stay put and do their job with passion. The commendable efforts by the Numbak Vision Center would not have been possible without his strong leadership. Creating positive change among the individuals of his team, he inspires them to become leaders in their own right, by simply putting their best foot forward in everything that they do, whether it is a simple act of spending additional time with the kids to help them understand the lessons better or helping in the everyday maintenance of school facilities. Mr. Lee emphasized that these simple acts of kindness can significantly boost each other's morale, motivation, and performance.

When working in a challenging environment like the Numbak Village, the importance of having a vision cannot be overstated. What drives Mr. Lee's team to continue what they do and do it well is the long-term aspiration to enable the stateless children to contribute to society in the best way possible. There have been some success stories, although not well documented, where a few students from the center were able to move on and find good opportunities elsewhere. This is the end result in mind that Mr. Lee hopes to replicate going forward, and he and his team are driven not to fall short of this goal. He stressed that if the focus and conviction toward this vision was strong enough, the setbacks and shortcomings along the way could be overcome.

Apparently, the list of challenges seems endless. One salient problem that was raised during the stakeholder consultation was the hostile attitude of the village population toward their children's education. Specifically, parents are hesitant to support their children's schooling because they do not see the point of doing so, as they would rather send them to work for additional income, do household chores, or look after their siblings. There is an apparent lack of appreciation for the importance of education and lack of a nurturing around learning, primarily because the parents themselves are not educated and they only think of education as a burden instead of a long term investment. Mr. Lee's team has gone the extra mile, despite the security concerns, by paying house visits to personally convince parents to send their children to the center. They are also trying to provide food for the children while in school as an incentive to boost attendance, and since feeding 300 mouths is spreading their resources too thin, they have to look for more sources of funds to sustain this.

The struggle with funders is as daunting as the struggle with the children's parents. Grappling with limited resources, Mr. Lee shared their constant battle to mobilize resources for the center. There is a lack of long-term funding as current financial support is based on seasonal availability of funds from private corporations and individuals. Some funders do not understand the local context of FHI's operation, making it difficult for the NGO to accommodate the demands and conditions imposed by the donors. Thus, Mr. Lee and his team have tried many fund raising strategies such as putting up a shop selling donated toys primarily to Chinese customers, writing proposals to big corporations, and even collecting from families and friends. Admittedly, these measures remain

unsustainable, which prompts them to explore other innovative ways to chase funds from other sources aside from the current donors.

Unfortunately, mobilizing resources within Sabah to support the activities of the center has never been easy due to the hostile perception of the local community toward illegal immigrants. Such an attitude is rooted in the fact that the inflow of illegal migrants causes security problems and competition for allocation of public resources and services in Sabah.

Taking their efforts further in making sure that the graduates of the center can move to regular schools (state-run and private) when they reach high school, the center is continuously improving its curriculum to be at par with the mainstream program in order to be legally accredited. Mr. Lee noted the urgency to go beyond basic literacy and catch up with the latest changes in educational program design to equip its students with sufficient knowledge and skills that will enable them to continue their education outside the center. He acknowledged the sad reality that the above-mentioned dismal conditions raise the question about the quality of education in the center, especially in comparison with national standards, considering the center's lack of structured learning in comparison to the standard curriculum of primary education within Malaysia's school system. So far, there has not been a systematic assessment of the status of students from the center who decide to continue at the secondary and tertiary levels within and outside of Sabah. Even if the curriculum is upgraded in line with the national standard, the capacity of the teachers is another pressing concern. Most of the teachers in the center are high school graduates with no teaching diploma, while licensed teachers

are not willing to teach in the center for a longer period due to low salary and better opportunities elsewhere.



Most girls of the center would like to become teachers, while boys dream of becoming policemen.

During the panel discussion, the audience was distressed by the overwhelming challenges faced by the Numbak Vision Center but on a positive note, the determination of the whole staff in overcoming these hurdles is definitely a celebration of humanity and a genuine practice in transformative leadership. Considering the painful sacrifices that they have to go through, we could not help but wonder what keeps them going.

Mr. Lee's response underscored the importance of having good role models starting from his childhood days and the propensity to pay good acts forward. Specifically, he shared his own inspiration from teachers who helped him appreciate the little things and believe in his own capabilities. He recalled how poor Korea was after the Korean War and how other countries helped his country recover from the ruins. He wanted to pay it forward so he left his comfort zone and found his new home in the less privileged community of Numbak. On his journey to Malaysia leading a small team of educators and volunteers, he made sure that he connected his followers' sense of identity and values to the mission. He allowed them to explore what they are capable of achieving so that they can take ownership of their work. He

understands their strengths and weaknesses and by doing so, he can support them in order to achieve their optimum performance.

The way forward

The importance of FHI's operations in Kampung Numbak cannot be underestimated, because in the face of uncertainties for undocumented children, the quality and relevance of their education will determine the kind of opportunities available for them in the future. Fostering sustainability in the context of providing basic education services to undocumented children is a challenge as the issues affecting illegal migrants are not meant to be sustained given their deplorable condition.

The current initiative by the FHI is essential to manage the transition toward the integration of illegal migrants into the local community over the long term. Innovative funding strategies thus need to be explored to look for other sources of funds but for this to be possible, FHI should enforce a solid culture of demonstrating its results and outcomes based on a robust documentation and communication strategy to win the buy-in of the donors for longer term funding support.



Students smiling at the Numbak Vision Center

The thrust of FHI should also extend beyond extending assistance to the children but also influencing the parents on the value of education not just from an economic

standpoint (i.e., getting a decent job in the future) but also from the perspective of value formation, personality development, and civic engagement. Although this will entail tremendous effort of sensitization to gain the support of parents and help them overcome their short-term focused mentality, the outcomes will be far reaching especially when the parents realize education can become a long-term investment with a range benefits. Since getting this message across to parents is a tremendous challenge, a robust communication strategy should be designed as a way to appeal to the concerns of the parents and their children. The communication strategy should also be extended to helping the local people better understand the plight of the undocumented migrants in order to foster respect and understanding, instead of xenophobia and hate. This will entail comprehensive awareness campaigns at the community level, as well as reaching out to local authorities to positively influence people's perception toward the undocumented migrants.

Aside from rethinking its fund raising strategy, another way for FHI to enhance its leverage in winning the trust of donors is for the NGO to expand its advocacy beyond its traditional basic literacy model and move toward stronger advocacy for the rights of illegal migrant children to access public education services. This involves lobbying more proactively at the policy level for the provision of educational rights for undocumented children. It also entails expanding its services from being service providers toward supporting the acquisition of vocational and entrepreneurial skills to have a more direct impact on income generation, capacity building, and community development.

It is sad to know that while some privileged children would not appreciate the education that is provided to them, other unfortunate ones (such as those who are undocumented migrants) can only dream of such opportunity. The longer they are deprived of citizenship, the more they suffer from limited opportunities for educational advancement. At the end of the day, all of society loses. The Numbak Vision Center educates children, but eventually, these children will grow up to become adults who will also wish to contribute to their own community and society. We hope that the world will be much more welcoming for them when that time comes.

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Transformational leadership in the promotion of sustainable practices: A case study of the Palace Hotel, Kota Kinabalu, Sabah

Elizabeth J. Taylor, *Centre for Urban Research, RMIT University, Melbourne, Australia*, Zarina M. Nor, *School of Distance Education, Universiti Sains Malaysia, Penang, Malaysia*, Adeel Tariq, *Asian Institute of Technology, Thailand*, Binyam Atsebeha, *Tongji University, China*

Introduction

Kota Kinabalu, capital of the Malaysian state of Sabah, and home to a competitive hotel market. As a gateway point for biodiversity-based tourism in nearby Kinabalu Park, the city has many hotels under construction, in addition to its already established accommodation market.

Since 2008, one Kota Kinabalu hotel, The Palace Hotel, has sought to reposition itself as a niche hotel offering a ‘green’ concept – rebranding itself in response to an apparently growing demand for such accommodation as part of ‘eco-tourism’. This strategic decision came under a period of new ownership and management, and was initially centred on a programme of renovations to attain recognised accreditation. Based on sustainability principles – both as a mean to brand the hotel to a niche market, and as a guiding

principle in itself – the hotel has sought to integrate building and management features to achieve recognised green certifications, and to provide a new branded ‘green’ experience to tourists. The hotel’s shift has meant changes in technology, as well as seemingly more significant changes to ongoing practices, and to the presentation of the hotel and its features.

In August 2015, the Malaysian Government’s Natural Resources and Environment Ministry announced it was reviewing the National Biodiversity Policy to refer to “the importance of and challenges to the growing eco-tourism industry”. In the report, the Ministry noted that eco-tourism sites accounted for over one million visitors to Malaysia annually, with visitors willing to pay more for biodiversity preservation and for “a unique experience” (Borneo Post, August 26 2015).

The Government’s strategic support for eco-tourism is also found in The Eleventh Malaysia Plan (2015), which as well as nominating “green growth” as one of six strategic thrusts, also identifies eco-tourism as a key positioning opportunity for “re-engineering economic growth” in Malaysia. The Ministry of Tourism and Culture also released a National Eco Tourism Plan in 2011.

The Palace Hotel's venture into eco-tourism now sits within a broader trend supported by government policy, but seems to have proceeded without specific implementation support. The hotel's experiences in some ways illustrate the challenges of working without coordinated support for sustainability transition. Additionally, the hotel's experiences point to the pivotal role of leadership in instigating and sustaining change. In a commercial venture such as a hotel, any transition that is not mandated by government policy is ultimately measured by - and vulnerable to - the marketability of the idea to consumers.

Problem statement

The above context forms the starting point for researchers to study and explore how the Palace Hotel has navigated this challenging shift. The hotel appears to be balancing two sometimes contradictory messages – one justifying sustainability principles on the basis of economic returns; and the other justifying economic returns on the basis of sustainability principles. Transformational leadership in the hotel industry recognises that long-term sustainability and growth is contingent on the adoption of green policies and practices, given that care for the environment is the basis for the expansion of eco-tourism. Eco-tourism is a broader concept, including nature-based activities,

within which green accommodation is a key component.

It is critical to understand the challenges faced by the hotel leadership in the implementation and integration of sustainable practices in their daily operation. Moreover, already existing understanding about the nature of and role played by transformational leadership in the private sector in committing to environmentally friendly practices is limited. This case study of transformational leadership of the Palace Hotel is designed to explain the model of sustainability it has promoted; and to identify implications for the wider adoption and expansion of sustainable practices at hotel industry.

Research questions

This paper seeks to:

1. Identify the role of transformational leadership in the integration of sustainability concepts by the Palace Hotel;
2. Examine the success factors of the Palace Hotel in integrating sustainable concepts into its business;
3. Discuss the challenges that the Palace Hotel faces in its efforts to shift towards sustainability; and
4. Critically assess how to maintain sustainability practices, with a view to providing a roadmap for others.

Literature Review

Hotels are a mainstay of travel and tourism activities, thus playing a critical role in addressing and mitigating the environmental threats raised by the tourism industry. Erdogan and Baris (2007) reported that the hotel industry, due to the nature of its services, consumes large quantities of resources like water, energy and non-durable products (consumables). Mensah (2004) argued that because of excessive usage of non-durable products, energy, water and the emission of hazardous materials into water, soil and air; the hotel industry created a large impact on environment.

Mensah (2006) suggested that international and chain hotel management were more likely to address concerns related to environmental threats from the hotel industry. Though addressing environmental concerns should be the priority of hotels (IH & RA, 2004), it is difficult to identify an individual hotel paying sufficient attention to sustainability (Cummings, 1997). This represents a key reason for examining moves toward sustainable practices at an individual hotel, such as the Palace Hotel in Kota Kinabalu.

In addition, incorporating sustainability into business philosophy is highly dependent on hotel leadership attitudes toward reaping

benefit from environmental friendly practices; relationships with the external environment; and organizational level factors like size, location and financial strength (Bohdanowicz, 2006; Dewhurst and Thomas, 2003).

Top management and leadership is identified as the main factor influencing motivation to adopt sustainable practices at the organizational level. Chen and Chang (2013) claimed that dynamic leadership had strong capabilities to influence the adoption of organizational sustainable practices. Chassagnon and Haned (2014) reported high correlations between innovative leadership and firms' abilities to develop sustainable practices. Qi, Shen, Zeng, and Jorge (2010) indicated that leadership commitment at both individual and corporate levels were required to embark on sustainable practices. Moreover, Ramus and Steger (2000) argued that supervisory attitude was highly conducive to initiating sustainable practices among employees.

The literature suggests that leadership could play a key role in the adoption of sustainable practices that could be advantageous to a hotel. Porter and Van der Linde (1995b) reported that pollution was related to wastage of resources and Li (2014) claimed that adoption of sustainable practices led to efficient utilization of

materials and reduction of wastage of resources. More sustainable hotel practices can help reduce consumption of non-durable products, water and energy resources, and can enhance efficiency and thus lead to cost reductions, adding to the competitive advantage of the firm. Porter and Van der Linde (1995a) argued that reduction of waste and pollution substances indicated better resource management, and allowed companies to lessen the threat to the environment, in addition to enhancing value for customers and thus adding to competitive advantage by offering differentiated services.

Triebswetter and Wackerbauer (2008) indicated that sustainable practices may assist in creating new market opportunities, improve firm image and enhance sales. Further, Chiou, Chan, Lettice, and Chung (2011) showed that sustainable practices contributed to and bolstered the competitive advantage of a firm. Organizations offering sustainable products have been found to be more competitive and successful as compared to their rivals (Chen, 2008).

Potential benefits from shifting toward sustainable tourism practices are not limited to the environment or to the economic interests of a firm. Sustainable tourism can contribute to the betterment of the livelihood of the local community in

addition to the business. It can also indicate the contribution of the service industry to the environment (Tao and Wall, 2009; Teresa and Geoffey, 2007). However, Akis (2001) suggested that the tourism industry would adopt sustainable practices only if it could help to reduce operating costs. Therefore, it is imperative to understand the effect of sustainable practices and the role of leadership in the service industry because understanding of how transformational leadership contributes to the adoption of sustainable practices in the hotel industry is lacking (King and Lenox, 2002). This study investigates the role of transformational leadership in adoption and integration of sustainable practices within the daily operation of the Palace Hotel.

Methodology

This case study employs a mixed qualitative approach: observation by researchers, focus group discussion, and in-depth interviews. The organization studied has been selected using a purposive sampling technique and the Palace Hotel was chosen among other hotels in the vicinity of Kota Kinabalu, Sabah due to its relevant criteria in sustainability practices. The researchers observed the green efforts around the hotel area, focusing on practices in managing and operating sustainably. A focus group discussion with the managers and well as other stakeholders (farmers and a fertilizer

producer) were carried out where further questions and information were gathered. Different venues have been visited to gain a broad perspective on sustainability leadership efforts by the Palace Hotel.

Findings

Sustainability concepts at the Palace Hotel

The Palace Hotel, an older Kota Kinabalu hotel, has sought, since 2008, to reposition itself as a niche hotel offering a ‘green’ concept – rebranding itself in response to an apparently growing demand for ‘eco-tourism’ in Malaysia. The decision to reposition the Palace Hotel came under a period of new ownership and new management through the Pataya Group, a Thai management company. Based on a review of the literature, as noted, and on stakeholder comments, the impetus for this decision can most likely be understood as stemming from a financial interest in an emerging market, within the context of a locally competitive hotel market.

Eco-tourists are a niche market: like backpackers, they have differing expectations of tourism facilities and experiences. Some of these expectations translate to cost savings and to increased revenues – a willingness, as noted by the Malaysian Ministry of Natural Resources and Environment (Borneo Post, 2015), to pay more to support locations and

sustainable practices. Other facets of eco-tourism can translate to significant outlays, particularly in upfront investments. One key expectation bought by eco-tourists as compared to mass market tourists is the need to be informed and assured of sustainability credentials: meaning social, economic, and environmental sustainability. In seeking to attract eco-tourism, The Palace Hotel’s first step was to specifically seek a visible accreditation of its changed operations, in part through renovations to the hotel building.

Within the fairly new concept of “sustainable tourism” the Palace Hotel has sought to innovate mainly on the management side, putting the hotel in the ranks of “green hotels”. Although sustainable tourism is a widely debated term and concept with many indicators (Liu, 2003), it has shown a tremendous amount of growth in the past few decades.

For hotels to advance in sustainable tourism, and become competitive on the market, there are push and pull factors from the market side. The factors which contribute to hotels’ ability to move towards sustainable tourism can be advancement in awareness of customers on environmental issues, supplier side sustainability, and cost savings as a result of new technology (although the initial costs are high).

The Palace Hotel works on the innovation side of the management of sustainable tourism. The management spent nearly 10 million MYR (Malaysian ringgits) on renovation of the hotel which encompass its greening. Much of the investment went to the installation of equipment related to energy saving purposes. The other major investment where the new leadership role exceeds has been on the training of staff on skills and awareness related to operating the hotel sustainability. These include cleaning practices, hotel decoration, waste minimization and avoiding/minimizing plastic materials. These efforts have led to awards for the hotel from local authorities, with recognitions like “Litter Free” hotel and “Green Hotel”. This creates a branding opportunity to market the hotel as a green hotel.

Renovations of the hotel took place over two years, of which half was on green components, specifically in the interests of attaining an “Earth Check” certification. According to accounts from those working at the hotel, it took four years until the hotel sustainability credentials were officially recognised in Earth Check, where they were benchmarked with bronze status. Based on sustainability principles – whether as a means to brand the hotel, or as a guiding principle in itself – the hotel has integrated changed building and management features,

and provides a branded ‘green’ experience to customers. Green certification is embedded into the features and practices of the hotel, and is in turn used in marketing. Rooms are festooned with messages to customers about sustainability – regarding the regularity of towel and linen changes, the importance of saving water and energy, avoiding the use of plastic bottles, and the use of recycled bags.

Green investment at the hotel has entailed significant investment in technology to reduce energy and resource consumption of the hotel, including both ‘hardware’ and ‘software’. At the ‘hardware’ level, the hotel has installed energy saving devices, a renewable heat pump system for hotel hot water, water-saving cisterns, and low-toxic fixtures. These changes occurred during major renovations that were scheduled to occur regardless, and were relatively straightforward in comparison to the ‘software’ changes then instigated in hotel management practices and in relations with suppliers.

At the ‘software’ level, the hotel has significantly changed its cleaning practices, using recycled citrus products in cleaning, and in some cases reducing the amount of visible cleaning (such as towel changes). It has introduced a no plastic bottle policy, a significant point of difference given that

plastics – and bottles especially – are a major pollution issue in Sabah. The hotel also features environmental branding in the form of art works, decorations, and messages (often on recycled materials), and through its featured on-site herb and vegetable gardens. Vegetables and vegetable waste form the focal point of the hotel's key sustainability initiative. The hotel has sought a closed circuit between the waste it produces, new waste recycling technology, and local organic farmers supplying vegetables to the hotel.

Among the tangible innovative practices on sustainability of the hotel, organic waste recycling is the major one. The hotel partners with Glomus, an organic fertilizer factory, to process all the organic waste from the hotel via new technology. Furthermore, the hotel creates a supply chain of fresh vegetables from the nearby region, Bundu Tuhan, grown with enrichment from the organic fertilizer supplied by the plant. The hotel has partnered with 20 farmers who can supply fresh organic vegetables using the organic fertilizer. This creates a guaranteed market for the farmers – providing social and economic benefits – which leverages substantial agricultural output while at the same time assuring the delivery of fresh organic vegetables. Approximately 11 metric tons of organic waste is being

recycled per year which was previously destined to go to the landfill. This particular example showcases the leadership role of the hotel in reducing its own footprint on the environment. In addition, the fertilizer can be used as a pesticide and an herbicide.

The waste management programme is a measurable physical improvement in the sustainability performance of the Palace Hotel. Through recycling and the reduction of waste, the hotel has reduced its waste sent to landfills to 10.8 metric tonnes per year – a significant improvement on other hotels in Sabah which produce over 20 metric tonnes of landfill waste per year. Reducing solid waste is important in a context where solid waste pollution is a serious concern – including contamination of waterways and the ocean – and where there are, as in Sabah, reportedly difficulties in enforcement of solid waste disposal practices. In addition to direct savings and waste diversion, the hotel arrangements with the fertilizer factory and with contracted farmers underscore a model of improved social and economic sustainability for agriculture in the region, and a reduction in nitrogen run-off and other agricultural farming impacts.

In addition, the hotel also are also involved in campaigns to promote green values and community engagement programmes within the local community. These projects

include a Green Cycling City Tour; a Promote Green Dining Programme; Sustainable Fishing; and, Recycling of Grey Water. In addition, the Palace Hotel also implements social responsibility projects by reaching out to the disabled, orphans, elderly and the poor. This is done by organising visits, donation and sponsorship to 15 homes such as, CHILDS (Caring and Helping Individual Learn and Develop) Sabah, Taman Didikan Kanak-Kanak Kurang Upaya in Sembulan, Bondulu Orphanage Home in Toboh Tambunan, Don Bosco Orphanage Home in Bundu Tuhan, Palliative Care Intensive Unit in Kota Kinabalu and so on.

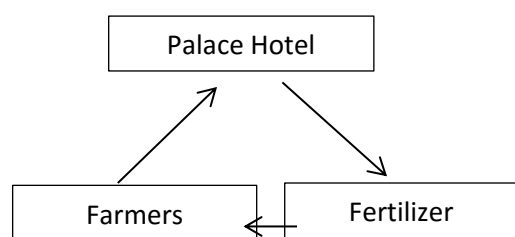


Figure 1: Waste recycling: vegetables and organic waste at the Palace Hotel

Key challenges

The prevailing explanation given at the focus groups discussing the Palace Hotel's transition was that, the General Manager was passionate about sustainability as a concept and about "giving vision and substance" to EarthCheck ideas. Both the General Manager and the Head of Training had had previous experience in eco-tourism

hotels elsewhere. This may mean they were hired at the Palace Hotel with this specific purpose in mind.



Plate 1: Waste recycling facility as part of the hotel's management



Plate 2: Organic vegetable production supported by the Palace Hotel

Clearly there were some critical aspects for the hotel in enlisting sustainability principles, but there remained a level of ambiguity about these. For example, there were mixed messages about whether the hotel and fertilizer company had approached farmers or if they had been approached by farmers.

The hotel is a commercial venture in a country with few other examples of eco-

tourism hotels, albeit with growing government interest in supporting an eco-tourism industry (as in the Eleventh Malaysian Plan). Ultimately the success of the hotel's changed direction has been measured – explicitly or implicitly – through terms of financial security.

Leadership within the hotel appears to constantly balance two sometimes contradictory messages – one justifying sustainability principles on the basis of economic returns; and another justifying economic returns on the basis of sustainability principles. In justifying the changed practices at the hotel, management referred to the niche advantage and “added benefit”, saying that they “offer something other hotels do not” and “a 4-star hotel at a 3-star rate”. They emphasised savings in running costs resulting from, for example, energy saving fixtures and waste reduction, with savings amounting to 81,000 MYR per year. Justifying the different operational model that the hotel runs, however, measures well beyond cost savings.

The hotel has invested heavily in training and value-changing of staff (and farmers), with the General Manager saying that a challenging “mind-set change” was needed. The sustainability model of the hotel has depended on retraining and on the capacity building of various stakeholders. Hotel

management stated that “the most costly asset is human – the training to impact their mind”, and getting staff “believing what we want to do”. This (somewhat autocratic) emphasis on “believing” seems to have been pursued in light of widespread scepticism about the viability or purpose of sustainability changes.

Likewise, participation of the vegetable farmers has been built on a combination of financial assurances, technological demonstration, and instilled values – again originating from the hotel. The resource challenges of doing so may explain why large chain hotels are more known to address environmental concerns than are individual hotels (Mensah, 2006). The Palace Hotel takes a direct role in guiding farmers' decisions: promoting the use of Glomus (in various applications – as fertilizer and pesticide) through its contractual relationships.

As a comparatively isolated eco-tourism venture, the hotel is exposed on the one hand to risk - the risk and effort involved in seeking to change values and to convince stakeholders of the viability of alternative practices. The vegetable farmers, for example, emphasised in interviews that although their crops were slower growing under the hotel's system, the resultant crops were better quality and bought at a higher

price. The nature of the relationship between the hotel, fertilizer factory, and farmers points to critical elements of leadership and training. It shows that the hotel has had to make particular decisions for this to happen, and that the hotel is critical to leveraging the actions of other stakeholders. In the absence of the hotel incentives, farmers would – they acknowledge – default to intensive farming: with long term risks to the viability and environmental quality of their land and water.

Conversely, the farmers and others incorporated into the hotel's model remain reasonably isolated, with some risk of exploitation through the monopoly buying position of the hotel. Being confined to only one hotel and a small number of vegetable farmers, the sustainability merits of the model are vulnerable to poor transparency and innovation. Were local competition in the eco-tourism space to increase, the hotel might be under quite different pressures. We return to this point in our recommendations.

The Palace Hotel, styled as a 'green' hotel is dependent on external consumer demand for its product, further emphasising the importance (and vulnerability) of marketing to the hotel's position. Previous studies emphasise the critical importance of

customer experience and firm efficiency to motivating and maintaining sustainable practices in industry (Porter and Van der Linde 1995a; Chiou, Chan, Lettice & Chung 2011; Triebswetter & Wackerbauer 2008). The validation for pursuing major technological changes at the Palace Hotel, as well as for instigating processes of mind-set change for staff and suppliers, comes back to hotel management and to their assessment that eco-tourism has potential for economic advantage. The hotel's performance in this regard actually remains a key challenge: the hotel has clearly had some turnaround in business following the redesign and remarketing. However, examples of hotel reviews show limited references to the green features.

The Palace Hotel model is relatively new to Malaysian tourism – although it may grow given government interest in the area – and there is limited feedback from hotel customers to indicate to what (if any) extent that green marketing is affecting decisions to stay at the hotel. This points to limitations in the extent of the hotel's repositioning – falling short, for example, of recognisably high-end eco-tourism such as on nearby Pulau Gaya. Customer marketing issues also point to the potential value of alliances with other eco-tourism interests in Malaysia, to promote and improve the concept more broadly.

Limitations to the accreditation model:

An example of chicken

Although the Palace Hotel has achieved considerable improvements in resource conservation and solid waste management, the sustainability accreditations achieved by the hotel are quite limited. For example, although vegetables are showcased as a waste management and sustainable organic food model, most of the other food supplied in the hotel restaurants is not part of this circuit. Only vegetables and seafood are specifically sourced based on sustainable practices. There are many other food items on the menu with unknown origins. A case in point is chicken.

Chicken meat is a fixture at the Palace Hotel, as in the rest of Kota Kinabalu, and throughout the country. Chicken consumption in Malaysia is around 40 kilograms per person per year and “among the highest in the world, and can’t grow much higher” (The Poultry Site, 2014). Chicken is the main meat offered in fast food outlets, and fried chicken outlets are prevalent. Jayaraman et al (2013) describes an upward trend of chicken meat consumption in Malaysia alongside rising incomes, with chicken consumption increasing from 36 to 39 kilograms per capita from 2000 to 2011. Jayaraman et al (2013) point to the religious diversity of Malaysia’s population, with “poultry meat

highly consumed due to its religious acceptance” (p. 165) throughout a diverse population.

The significance of chicken to Malaysian menus, including at the Palace Hotel, is significant given that although Malaysia’s chicken meat is mainly grown locally, chicken feed is from imported soybean and corn. A U.S Department of Agriculture (USDA) poultry report on Malaysia notes that “imported soybean meal and corn account for 65 percent of the production cost” of broiler chicken farms in Malaysia. Imported soybean and corn are intensive, genetically modified, monocultural crops embodying significant food miles: grown for example in South American countries undergoing significant deforestation. The global interconnectedness and environmental impact of chicken production were highlighted early in the 1990s by Constance & Heffernan (1991). The global footprint of intensive poultry production is even larger today, and offsets the sustainable agricultural practices promoted in the model of vegetable farming at the Palace Hotel.

Within Malaysia, chicken meat is produced in intensive factory farms. The Poultry Site reports that Peninsular Malaysia has “about 3,200 broiler farms”, almost all of which are in large, chemically intensive, vertically

integrated farms with very narrow breeding stock. There remain concerns about cleanliness and the impact on surrounding farm areas through flies. Despite the wistful popularity of free ranging ‘village chicken’ in Malaysia, it is reported that “backyard and free-range poultry production has declined significantly” in Malaysia, as in most developed countries.

Chicken thus presents one example of how the sustainability practices of the Palace Hotel could be improved by moving toward a more comprehensive standard. The hotel could move toward ISO14035 – total supply chain integration. In this case, suppliers of chicken (as for example other food products at the hotel) would be explicitly audited for sustainability accreditation. There are some (albeit very few) organic free-range (that is, not factory intensive) poultry suppliers in Malaysia. The proposition for expanded accreditation, including food products like chicken, is again dependent on the market for organic and environmentally sustainable products. There is some prospect for this: free-range organic chicken meat in Australia, for example, is a visible and expanding niche market - with a portion of consumers valuing its ethical, environmental, or health credentials.

Entering into supply chain arrangements with local organic poultry farmers is one

example of how benefits to sustainable agricultural industries could be expanded as a result of changes to hotel operations. Morrison et al (2006) review how in neighbouring state Sarawak, “contract farming is used as part of an affirmative action programme that trains indigenous smallholders in commercial poultry production”. That case referred to standard intensive poultry production – but the model of affirmative action could also be adapted to integrate sustainable practices, for example by using locally produced feed or by integrating energy-from-waste facilities. The fertilizer produced by Glomus includes chicken manure as a key active ingredient – suggesting another potential integration between suppliers.

Conclusions and recommendations

This case study points to the pivotal role of leadership in instigating and sustaining sustainability transitions in the Palace Hotel. Commitment to sustainability practices has to be embraced by managers and employees alike in order to inculcate sustainability culture across the organization. In addition, the relationship with other stakeholders outside the hotel itself is important. The Palace Hotel’s engagement with organic farmers and the producer of organic fertilizer creates synergy in adhering to their pledge to sustainability causes whilst at the same time

trying to minimize waste of resources and promoting sustainability practices amongst the hotel guests. This study finds that the leadership roles in transforming a hotel towards sustainability are plausible, demonstrated by visible efforts and changes happening in the hotel. However, moves towards holistic sustainability practices in this hotel are still circumscribed.

The hotel case study is fairly limited in its sustainability accreditations and in its customer experiences. It suffers from lack of transparency about some of its supplier arrangements. One recommendation is that the hotel could strive to obtain organic certification for products used in their menus and sanitation products for hotel guests.

The hotel's experiences in some ways illustrate the challenges of working without coordinated support for sustainability transitions, as well as the challenges presented from lack of a sustainability mandate and/or implementation mechanisms from the government. Also, given the surrounding areas of Kota Kinabalu which are still struggling with irresponsible waste disposal, being an eco-friendly hotel within this environment is a challenge in itself. Therefore the hotel may also benefit making contact with other local green enterprises (e.g. the Department of

Public Work) or with local universities (e.g. Universiti Malaysia Sabah) to help find ways to improve their sustainability related activities and to collaborate in environmental science research.

Customer satisfaction is one of the determinants in hotel industry performance and practices. Information and feedback are freely circulated throughout the internet and despite their effort in promoting a sustainability concept for their hotel, most of reviews for the Palace Hotel do not reflect this mantra. Therefore, the hotel would benefit from closer attention to the reviews feedback from the customers in particular when they want to position themselves as an eco-friendly hotel. As eco-tourism is a relatively untested, but expanding, concept in Malaysia, future opportunities for accreditation and marketing will be critical leverage points.

Most of the sustainability practices of the hotel come from its own initiatives through voluntary practices. Implementing practices like best environmental management or Eco labels are however available worldwide, the leadership effort to achieve the goals in a sustainable way is unique.

The policies which the management implements could/can be as a result of many incentives including a better market position, personnel (owner or CEO), or to

boost the image of the hotel. The World Tourism Organization (UNWTO) has drafted a document which provides the major tools for sustainability in the tourism industry, suggesting the main innovation remains with the leadership of a particular business to implement those recommended policies or new ones (UNWTO, 2002). The hotel's main success on the leadership aspect is being voluntarily innovative, including training staff with sustainability concepts, creating a social environmental code of conduct for staff and customers (including water usage, changing of bedding, minimizing plastic products and less chemical usage), environmental information bulletins for customers, and market niche with a local recycling company and local farmers in order to recycle waste and produce fresh organic vegetables respectively.

The management of the Palace Hotel with its innovative leadership implements already existing sustainability tools and policies at a practical level. In addition, they also possess creative policies and practices for better achievement of their goals. Though the cost of changes are higher, they can bring medium and long term benefits in cost savings, market attraction and recognition from local society and government.

As the hotel engages with this innovative management in leadership for sustainability, it faces many challenges. Since most of the staff members are accustomed to the 'grey hotel' sector, changing the attitude and awareness creation to the concepts of sustainable tourism is a major one. During the focus group this issue was raised as the most crucial demand – changing minds. The manager of the hotel said “the biggest challenge was on the software investment”, that is, the training of staff and changes in behaviour. Moreover, training of farmers which are linked to the hotel under the loop of vegetable supply and waste recycling was also a test of the leadership role to lead on sustainable tourism.

On the part of customer inclination and choice of the services provided by the hotel, there are not many formal ways to collect feedback to strengthen the ongoing greening of the hotel without affecting the needs of the guests. This can potentially be traced if customers are satisfied and also possibly by measuring to what extent customers are coming back as the result of green initiatives taken by the hotel. The responses, if any, can help to improve any shortcoming practices of the hotel. The reviews and responses can also be used as marketing strategies which can attract more customers, and leverage expanding

government support of and interest in eco-tourism in the region. Since the hotel seeks to get a certificate which recognizes its contribution to sustainable tourism, it should look more to the international ones in addition to the one it already has. The accreditation can expand its market and reach out to new customers.

Customer marketing issues also point to the potential value of alliances with other eco-tourism interests in Malaysia, to promote and improve the concept more broadly. Chicken thus presents one example of how the sustainability practices of the Palace Hotel could be improved by moving toward a more comprehensive standard. The hotel could move toward ISO14035 – total supply chain integration. Entering into supply chain arrangements with other suppliers beyond vegetable production – for example local organic poultry farmers - is one example of how benefits to sustainable agricultural industries could be expanded as a result of changes to hotel operations.

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Ecotourism and transformational leadership in Pulau Gaya Island: A stride toward sustainable development

Christmas Baduria de Guzman, *Institute for the Advanced Study of Sustainability, United Nations University, Japan*, Pasicha Chaikaew, *Department of Environmental Science, Chulalongkorn University, Bangkok, Thailand*, Shafiquzzaman Siddiquee, *Biotechnology Research Institute, Universiti Malaysia Sabah*, Sobri Ismaili, *Faculty of Psychology and Education, Universiti Malaysia Sabah*, Syaiful Rizal, *Faculty of Technology Management and Technopreneurship, Melaka, Malaysia*

Introduction

The terms sustainable tourism, community-based tourism, and ecotourism are well-established and have often been interchangeably used since the 1980s, however, the concept of sustainable development is currently drawing universal attention. Ecotourism is one of the fastest growing industry and research areas. Between 1990 and 2015, the literature on both ecotourism and sustainable tourism has increased rapidly within the SCOPUS academic research database, with currently

4,168 and 5,772 respective results for the two terms (Elsevier, 2015). A large number of ecotourism organizations have been established as evidence of this growth (Dowling, 1997a; Dowling, 2013); for example, the Ecotourism Society (TES), the Ecotourism Association of Australia (EAA), the World Travel and Tourism Research Centre (WTTTRC), the International Centre for Ecotourism Research (ICER), and the International Ecotourism Society (TIES). Lindberg and McKercher (1997) have defined ecotourism as tourism and recreation that is both nature based and sustainable. By this definition, ecotourism has the potential to expand as a market segment and to promote nature-based tourism among, Southeast Asia Nations in particular, such as Indonesia, Malaysia, and Thailand (Dowling, 2013).

The diversity of tropical rainforest ecosystems in Malaysia is well-known for contributing to the popularity of ecotourism, and one of the top listed rainforests in Malaysia is in Sabah. Sabah has been heavily promoted as an ecotourism destination with an increasing number of hotels and adventure activities since the 1990s (McNeil, 1997). Pulau Gaya Island,

offshore from the city of Kota Kinabalu in Sabah attracts tourists worldwide.

Geographically, the island is considered a very vulnerable system due to climate change and intensive development. Thus, there is a need for island development to be sustainable, well-planned and designed to cater to the sensitivity of the island's ecosystem. In the context of sustainable development, there is a need to understand the complexity of the problems faced by Pulau Gaya and to identify the direct and indirect drivers of environmental change. Various social issues include (1) illegal immigrants; (2) slum housing and sanitation; (3) waste management; and (4) education and health problems. Despite the efforts made by the government and other agencies to address these problems, not much improvement was made. Therefore, it is important to identify key challenges and barriers to the realization of sustainable island development on Pulau Gaya.

Problem

Towards the western shores of Pulau Gaya, three top class resorts are in operation, namely – Gayana Eco Resort, Bunga Raya Resort & Spa and Gaya Island Resort. However, on the eastern shores, a very large and growing number of stilt villages can be

observed from the Kota Kinabalu waterfront. The eastern shores are comprised of 11 villages (Kampung Lok Malom, Kampung Lok Urai, Kampung Lok Baru, Kampung Lobong, Kampung Kasuapan, Kampung Selamat, Kampung Ubian, Kampung Lok Parru, Kampung Simalak, Kampung Pondo and Kampung Pulau Gaya) and some of the villages are occupied by illegal immigrants from the Philippines and are considered a dangerous high crime area by locals and government officials. This may be a consequence of poverty and other socio-economic pressures (e.g., inequality or perception of people towards illegal immigrants) present in the locale. Several social and environmental issues drive residents' livelihood to unsustainable conditions.

Nonetheless, it remains a fact that there is a high potential for Pulau Gaya to attain sustainable development through ecotourism, owing to its pristine natural environment. Ecotourism can be a catalyst for change and can improve the current living conditions of the islanders/villagers. The down side is that many attempts towards sustainable tourism development shift back to a business-as-usual in a short period of time (Weinberg, Pellow, & Schnaiberg, 2000) unless a

specific model is developed to balance all aspects of the environment, economy, and the community. Prior to implementing such management approaches and other related options, the complexities and inter-relationships in the system should be understood as well as the limitations, constraints and tradeoffs associated with the proposed solutions.

Objectives of the study

The main aim of the study is to understand the complexity of the issues related to achieving sustainable island development of Pulau Gaya. Specifically, it attempts to:

1. Identify and enumerate existing issues on socio-economic and environmental aspects as they relate to the conditions of the community living in the island;
2. Identify relevant stakeholders to the operationalization of ecotourism on the island while at the same time introducing transformational leadership; and
3. Investigate on the potentials of ecotourism development on the island.

Literature review

The Tourism Policy by the Tourism Ministry in the 10th Malaysian Plan for year 2011-2015 had set out policies to encourage the promotion of culture and heritage

tourism as one of the new niche products to be developed extensively for the next ten years. Despite this, the real potential of culture and heritage tourism resources is not fully realized. In order for government agencies to address sustainable tourism development, it is important to identify and enhance the cultural products produced by the local community and promote this industry transformation to be transmitted from the elders to younger generations (National Economic Advisory Council–Malaysia, 2010).

Radam and Abu Mansor (2005) stated that the Tunku Abdul Rahman Park attracts divers and tourists because Pulau Gaya and other islands are surrounded by clean waters and coral reefs. Tunku Abdul Rahman Park widely provides natural habitats for aquatic species with approximately 500 species of coral reef fishes (Townsend, 2015). The adjacent island, Pulau Manukan, showed a fivefold increase in the number of visitors from 12,355 in 1988 to 65,602 visitors in 1998. In terms of the valuation of visiting the island, it was shown that visitors are willing to pay about MYR 5.02 per person per visit as entrance fee (Radam & Abu Mansor, 2005). The marine life on the island boasts a diversity of coral reefs, fishes

and clear blue waters with long stretches of white sandy beach. The island possesses high potential to attract ecotourism and other recreational and educational activities. However, to maintain ecosystem integrity, ecotourism development in the area must take into consideration economic, socio-cultural and environmental implications.

After almost two decades, the main pillar of ecotourism remains oriented towards achieving a nature-based resource, coupled with environmental education and sustainable management (Diamantis, 1999; Dowling, 1997b). The principles of ecotourism are characterized as follows: (1) nature-based; (2) ecologically sustainable; (3) environmentally educative; (4) locally beneficial; and (5) generates tourist satisfaction. The key success factors can vary depending on the situation.

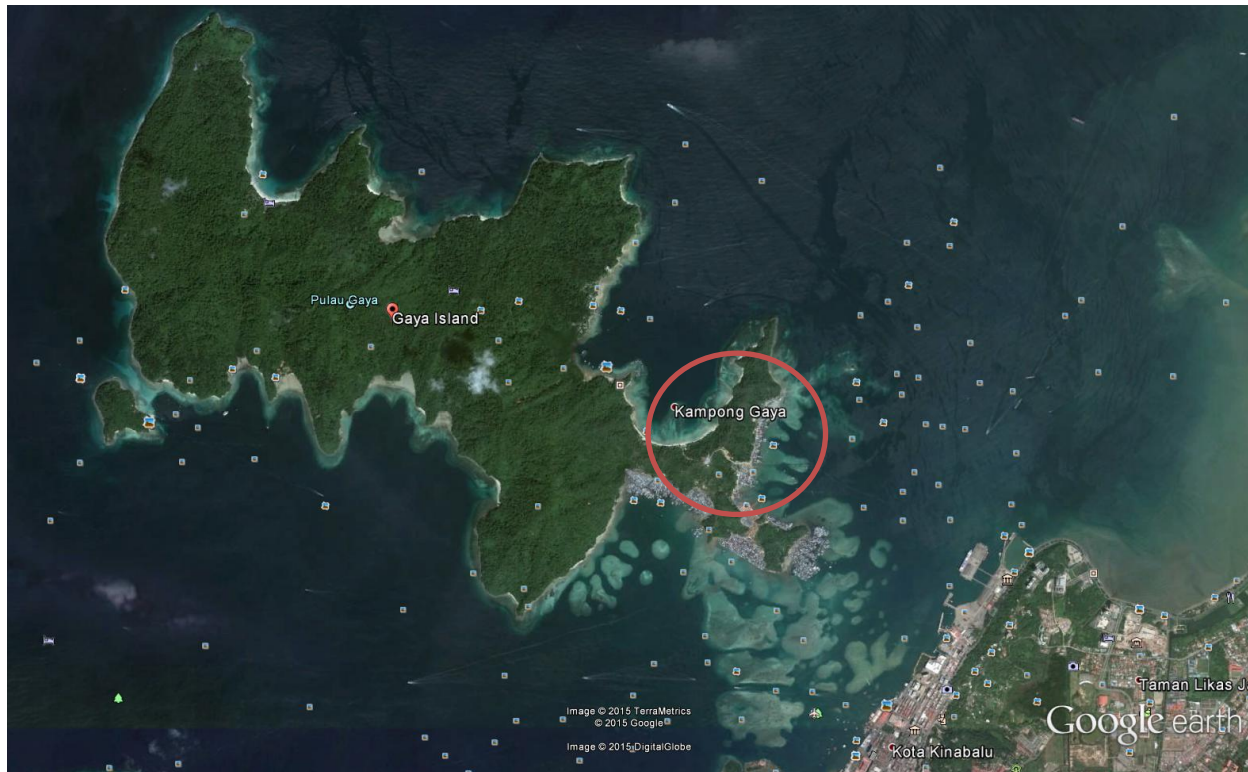
Kontogeorgopoulos et al. (2014) summarized three essential factors driving successful sustainable tourism which include the role of luck, external support, and local leadership. Leadership is important and can determine a community's success in fostering community-based tourism but is often neglected in the literature as a success factor (Armstrong, 2012; Moscardo, 2008).

Community-based tourism is different from ecotourism; ecotourism might need the involvement of a community, but while community-based tourism must have community involvement, it does not necessarily involve any nature-based assets. For example, the attraction can be culture or part of the architecture. Despite the lack of research on the importance of leadership, various studies have shown the necessity of having a transformational leadership or an individual champion to motivate community members in developing sustainably (Aref, 2011; Blackman et al., 2004).

Pulau Gaya is a Malaysian island, 1,465 hectares in size, and is part of the Tunku Abdul Rahman (TAR) National Park. Situated off the west coast of Sabah, 10 minutes off Kota Kinabalu by boat, Pulau Gaya stands 300 meters above sea level (masl) and boasts beautiful natural scenery and rich marine biological resources. Its name was derived from the Bajau word "Gayo" which means big land. With an area of 12,185 acres of surrounding sea water and the islands of (1) Pulau Gaya, (2) Pulau Mamutik, (3) Pulau Sapi, (4) Pulau Suluk and (5) Pulau Manukan, these islands are renowned for their coral reefs and calm turquoise water. Among the five islands,

Pulau Gaya is the largest island in the TAR

Marine Park.



Map of Pulau Gaya, showing the location of Kampung Pulau Gaya.

Methodology

Data gathering was conducted on 26 August, 2015 at Kampung Pulau Gaya, which was considered the most active village on the island in regards to implementation of government-supported initiatives related to the environment and the community's livelihood and living conditions.

The study employed the use of purposive sampling in its sampling design. Primary data were gathered through qualitative approaches such as observation, focus group discussions and in-depth key informant

interview. The study used descriptive statistics such as frequency counts and percentages. Results of the visitor interviews were analyzed.

Scope and Limitations

This study focused mainly on assessing the applicability of ecotourism principles in Pulau Gaya through examining current practices. The study was limited to only one selected study site (Kampung Pulau Gaya) and with a time constraint for observation.

Results and Discussion

According to the focus group discussion, and an in-depth interview, the outcomes of socio-economic status, education, current challenges, and existing tourism are explained below.

Socio-economic Profile

The population in the island is comprised of 80% local Malaysians. The remaining population is a mix of residents holding dual citizenship and illegal immigrants. The villages along the beach front are wooden traditional houses built on wooden pillars erected from the ground. These stilt pillars, some being located directly above the sea, are facing the South China Sea. Pulau Gaya has a total population of an approximately 10,000 (group interview, August 26, 2015) – largely Bajau, Suluks, Ubian and Filipinos, and provides Kota Kinabalu with cheap labor at various business and service establishments. Arranged side by side in a peculiar manner, the houses on the island are linked by wooden walkways.



The study site.

Kampung Pulau Gaya, the study site, is predominantly occupied by Bajau Laut, or known by the locals as “sea gypsies” for their sea-dwelling lifestyle and skills in seafaring.



The study site.

Aside from providing labor to the mainland, the source of income for men on the island is primarily marine-based such as fishing. Some work as transport vehicle drivers or boat operators also exists. As locals do not have a regular source of income, the average

monthly income is 500-800 MYR per household. Employment opportunities are limited in Pulau Gaya, thus encouraging the younger generation to leave the village in a quest to find better jobs outside.

Education

Most of the elderly have no formal education, while the younger generations go

to the nearest school on the island. However, the incidence of drop-outs is high (about 50%). From the latest school record of 1,400 primary students enrolled in 2015, only 700-800 students continued and moved on to secondary education. Of all 50 teachers, 30 are primary school teachers. No teacher lives on the island.



Data collection at the research location.

In terms of school facilities and activities, there is a lodging house available for rent on the school premises. This provides

additional income for the school. As for the strategy, the school places importance on environmental conservation /protection, and

waste segregation, topics which are incorporated in the school's co-curriculum and teachers include these in their lectures in order to raise awareness on climate change.

Governance at the Village Level

One Village Head is selected by the village people. Under the Village Head's authority, he or she leads activities and programs that are in line with the municipality's vision. Among these is include participation in the "model village" competition spearheaded by the local government, Dewan Bandaraya Kota Kinabalu (DBKK). Such a mechanism is a rewarding system to encourage villages and communities in promoting environmental protection. The Village Head also represents the villagers and brought grievances of the villagers to the government, as discussed during the focus group discussion regarding water supply.

Current Challenges: Key Issues and Challenges in Pulau Gaya

Socio-economic Issues – Aside from a lack of livelihood opportunities, the following issues are impacting the lives of the islanders:

a. Health and sanitation

- b. Difficulty of changing the mindset of people from unattainability to sustainability
- c. Attitude of the people in terms of protecting the environment (no sense of ownership and stewardship)
- d. Inequality (perception of illegal immigrants) or stereotype bias
- e. Education (high rate of student drop outs)
- f. Lack of coordination among stakeholders and governance issues
- g. Migration issue (people leaving the island)

Water Access and Security – In terms of water resources, fresh and clean water are not available in Pulau Gaya and the people are very dependent on fresh water supplied from Kota Kinabalu. They use the clean water for drinking and cooking, while seawater or rainwater is used for other daily domestic usage. The water supplier from Kota Kinabalu delivers fresh water in barrels daily to the community the water is bought for 7 MYR per barrel. Sekolah Kebangsaan Gaya has, with assistance from the state government, installed a water treatment facility to cater to the needs of the school community. Clean water shortage is

common in the island as the price for clean water becomes a burden to the villagers.

Improper Waste Management – Garbage is disposed of by burning it on open grounds or burying it underneath the soil. Currently, there is neither proper sewage, or a disposable system nor a facility to treat

unwanted things go back to the sea. At the school compound (Sekolah Kebangsaan Gaya and Sekolah Menengah Kebangsaan Gaya), the garbage is collected and burnt at the rear of the school compound. The garbage is sometimes collected and put on a bamboo raft. During high tide the garbage will float until the authorities from Kota



waste in Pulau Gaya. The villagers address these issues at the individual level; most

Kinabalu arrive to ferry it back to Kota Kinabalu to be disposed of.

Plate 3. Challenges in Pulau Gaya (Top: coastal pollution; below: Water tank as the sole source of drinking water in Kampung Pulau Gaya, and daily water delivery from Kota Kinabalu).

During low tide the garbage, in particular non-biodegradable waste such as plastics, food wrappers, containers will float and if left lying on the beach becomes food for roaming goats; when the tides come in again, it carries the garbage back to the sea. There are no septic tank sanitation systems in Pulau Gaya - even the school toilet flushes human waste back to the sea.

A proper waste management system is critical to ensure the sewage pollution in the surrounding waters do not halt the breeding of marine organism populations in the waters of Pulau Gaya.

Environmental Protection (Environment)	Well-being of People (Social)	Livelihood/Local economy (Economic)
<ul style="list-style-type: none"> - Burning of solid waste - Recycling of plastic bottles - Hiring of people to collect floating rubbish - Rainwater harvesting through tank (for washing only) - Environmental awareness in co-curriculum 	<ul style="list-style-type: none"> - Reward System - Affordable Housing Project (PPR) - Supply of clean water (once a day, 1L=7 MYR) - Mobile clinic – supported by Tzu-Chi NGO Group 	<ul style="list-style-type: none"> - Few villagers work at the resort - Community people goes to mainland for labour job - Small-scale livestock farming - Women-based hand crafting

Table 1. Current systems in place that aim to improve environmental protection; Well-being of people; and the local economy.

Problems related to environmental Resources

Degradation of marine and coastal resources will affect the potential of the island for sustainable ecotourism. Issues which were observed included the following:

Problem of floating rubbish (garbage at the shores)

- a. Indiscriminate waste disposal into the sea
- b. “Transboundary garbage” from Sepanggar, Likas, and Kota Kinabalu

Existing Tourism in Pulau Gaya

As per the Key Informant Interview conducted on the island, it was found out that three top class resorts (Gayana Eco Resort, Bunga Raya Resort & Spa, and Gaya Island Resort) are operational and employ local residents as resort workers. When asked about the rate of the accommodation in the mentioned resorts, prices ranged from 2,500-6,000 USD per day, including activity packages. Both Gayana Eco Resort and Bunga Raya Resort & Spa are monitored by

DBKK and their operation license was given by the Ministry of Tourism.

The current workflow was derived at the interview and is illustrated in Figure 2. Government officers and NGOs provide funding and manpower to improve the quality of islanders’ well-being, while tourists spend money directly in the business sector such as hotels during their stay. NGOs also play a vital role in the education system by offering funds and teachers in the local school. Some islanders work for the business sector for an additional income.

According to the in-depth interview and focus group discussion, the illegal migration situation in Kumpung Gaya is different from other touristic islands. The islanders in this context included indigenous locals and illegal migrants. This, in fact, creates the complexity in terms of management.

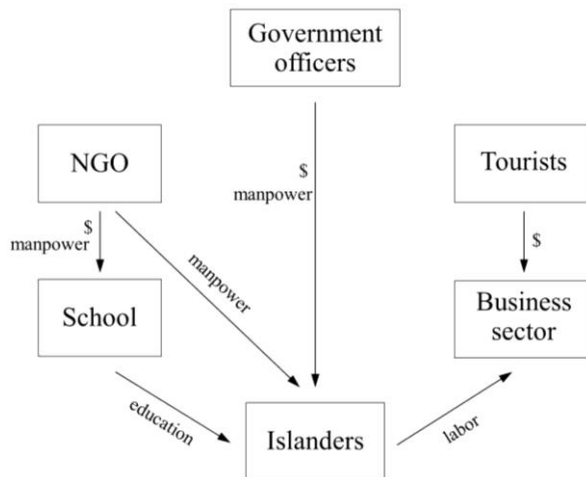


Figure 2. Flowchart showing key players and actors on the island with respect to existing tourism practice.

Conclusions and recommendations

Ecotourism is one potential way to integrate local community and stakeholders in the protection of Pulau Gaya and to create tourism revenues for the community. As per our observation, despite the migration issue, the merits of this include attempts in promoting environmental and sanitation education, bridging the gap between mainland government officers and islanders, and zoning the areas into proper ecotourism sites.

However, a large amount of management is needed, especially transformation leadership for further solving the existence of current

issues. The main problem is changing people's mind set and behavior rooted in their existing knowledge, attitudes, and practices. Specific issues in different dimensions can be observed as great opportunities to improve the island. Lack of transparent systems, in terms of provision of environmental services through conditional payments (e.g., resorts are not directly contributing some sort of environmental fees to communities) is another explicit issue but the implementation of Payments for Ecosystem Services (PES) could be applied (explained in Farley & Costanza, 2010; Kosoy & Corbera, 2010). Lack of sufficient livelihood opportunities and lack of ownership can be reduced by micro-financing, handcrafting, small-scale fishing and livestock farming (explained in Parvin & Shaw, 2013; Peque, 2005). The problem of mobilizing private-community partnerships can be solved through cultural programmes, as well as cooperation programs with resort owners and local government.

Proper waste management is crucial because it directly impacts islanders' health. It requires a strong system of solid waste management approaches such as waste management at the household level, and

taking responsibility for garbage (Chen, Ruijs, & Wesseler, 2005; Douglas, 2006; Skordilis, 2004). Weak development plans at the village level can be reduced by establishing strong short-term and long-term development plans. Zoning management in the island should be clearly stated, such as tourist zoning and marine reservation sites.

For further recommendations, the following workflow should be considered and/or incorporated in the actualization of any future tourism facilities or establishments in Pulau Gaya. Figure 3 explains the possible additional workflow based on the existing tourism demonstrated in Figure 2. Islanders could have more opportunities to earn revenues by providing local goods and services from ecotourism. The business sector could connect the community through the Corporate Social Responsibility (CSR) program. The CSR activities motivate employees and communicate the values of the business and can lead to a tourist's satisfaction. It is also suggested that a sense of conservation and ownership be inculcated in any type of program related to natural resource utilization and management, so that the value system of the islanders shifts towards sustainability. A sense of conservation and ownership is the ultimate

goal because it emphasizes the feeling of a sense of belonging and stresses the risks of losing their resources, emphasizing that the island is an important place to be sustained.

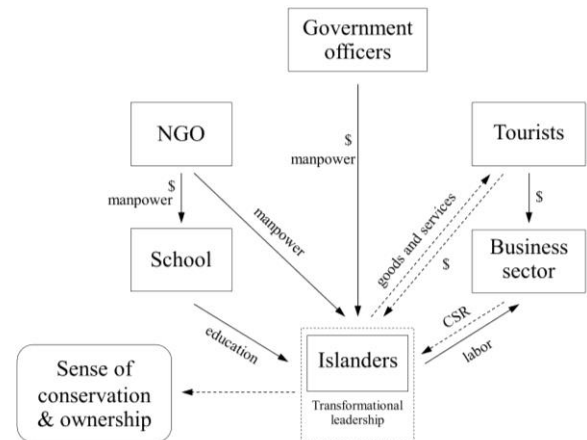


Fig 3. Proposed workflow for applying ecotourism in Pulau Gaya, with indicated key players/actors and stakeholders.

It should be noted that transformational leadership in this context has advanced beyond the process of empowering leadership or a reward-based system. Transformational leadership engages the connection and bonding between the leader and the follower. Through the development process, transformational leadership should increase trust, motivate people, and increase morality in the island and leads to positive mind shifts in those who follow. Members of the Pulau Gaya should be allowed to participate and make judgments about their own goal and success. Even though one

could expect impossible outcomes from ecotourism, slow but firm moves among stakeholders, support from external agencies, and a good quality of leader would bring light to Pulau Gaya.

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Sustainable Highland Development – A Case of Bundu Tuhan, Kundasang, Sabah, Malaysia

Nina Yulianti, ¹*University of Palangka Raya, Indonesia*, Pham Thi Hoa, *International University, Vietnam National University, Vietnam*, Keshav Jha, ^{1C}*LEI – Local Governments for Sustainability-South Asia, India*, Azwan Bin Awang, *University M Malaysia Sabah, Malaysia*

Abstract

1,200 metres above sea-level in the district of Ranau, Sabah, Malaysia, Bundu Tuhan is populated by farming communities who primarily produce important temperate crops. Recently, pressure from market demands for organic products has forced some local farmers to stop chemical fertilizers and pesticides and adapt their agricultural practices to more sustainable practices such as the use of organic fertilizers. The adoption rate, however, is still low.

This article identifies the challenges and efforts towards sustainable development in Bundu Tuhan's agricultural communities, based on the information collected during a field visit and three multi-stakeholder discussion sessions, held with the farming

community. The roles of the private sector, government and farmers through transformative leadership were shown to be very important for the shift from traditional to organic farming practices in Bundu Tuhan.

Introduction

Bundu Tuhan is one of the 14 sub-districts of Ranau, in Sabah, Malaysia, in the mountains of Northern Borneo. The village is in one of the highlands facing Mount Kinabalu, a UNESCO World Heritage Site since 2000. Bundu Tuhan includes a large Native Reserve of 1,263 hectares. Accommodating approximately 1,000 households within its borders, Bundu Tuhan has an estimated population of 4,000 (Sung et al. 2012).

The geography is rugged, mountainous terrain, making it an inconvenient location for agricultural practices (Figure 1). The elevation of the entire area exceeds 1,000 meters and is largely covered with thick equatorial rainforest. The area is connected to the rest of Sabah by the Kundasang Highway, and built into the mountains' slopes. The highway has a high potential to erode (Roslee et al. 2011), as instability of soil is a considerable problem in this particular highland area.

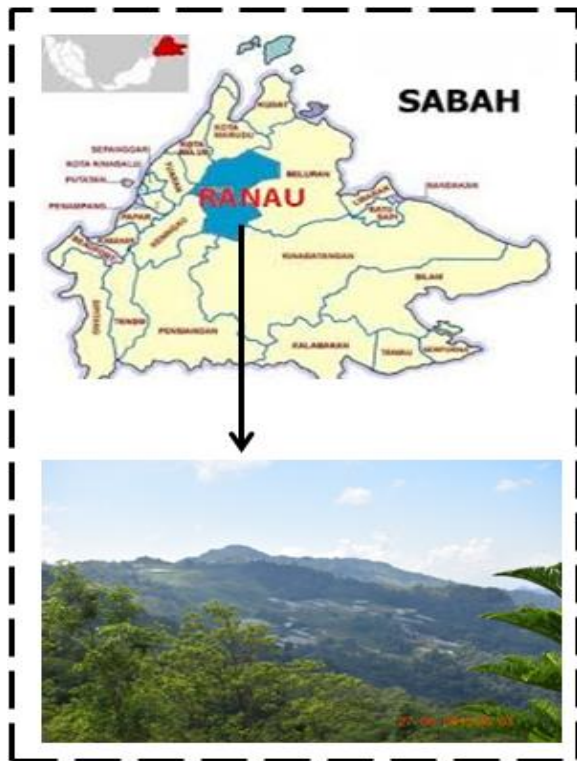


Figure 1: Geographical map of Bundu Tuhan

The demographics were collected during a visit to the Mari-Mari cultural village in Kota Kinabalu City, on August 27, 2015. The major tribe populating Bundu Tuhan is the Kadazan-Dusun people, with most of the community engaged in agriculture. Within the Kadazan-Dusun culture, there is one key ceremony - the Tadau Ka'amatan, or harvest festival. As rice farmers, they believe the spirit of the paddy should be honoured after a year's harvest. Other minority populations in Bundu Tuhan include the sea gypsy community (Bajau), the hunter community (Murut), as well as Malay and Chinese

communities. These different cultures also influence the social life within and between the communities of Bundu Tuhan.

The two main economic backbones for all communities of the village are agriculture and tourism. Much like the other highlands in Malaysia, one of the major tourist attractions in Bundu Tuhan is the cooler weather and the unique Bornean biodiversity that thrives in highland areas. As the highlands are so biodiverse, they are particularly ecologically sensitive to the use of unsustainable agricultural practices that utilize chemical ingredients, such as those found in pesticides and fertilizers. Recently, Bundu Tuhan faced environmental issues as well as social and economic problem of the farming population. Issues included land and water pollution, and a high influx of migrant workers coming to work in the vegetable farms.

According to the local farmers, there is a high population of migrants from Indonesia and the Philippines working on farms and in the tourism sector. The immigrant issue has not yet posed a significant problem in Bundu Tuhan, compared to the other places such as Pulau Gaya and Kampung Numbak.

However, the locals worry that this may lead to even more unsustainable use of land. At the same time, Sabahan farmers are being forced to change their conventional methods of farming due to the increased demand for organic products and government regulation (WWF Malaysia, 2007). During this process of change, farmers need to learn new techniques at a high cost.

In Bundu Tuhan, both the private sector and local authorities have approached the community in order to help farmers readjust and practice sustainable farming, including the introduction and use of organic fertilizer. Many farmers are reluctant to accept the new technology and practices. Therefore, there is a need to understand the issues involved and find solutions to mitigate these. Understanding how transformational leadership among the stakeholders and farmers and their struggle may help achieve sustainable agricultural development.

Purpose of the Study

1. To study the current farming practices in Bundu Tuhan
2. To identify challenges in promoting sustainable agriculture through the introduction of organic farming

3. To understand how leadership transformation and sustainability concepts can contribute towards environmental sustainability and promote socio-economic well-being of the farmers.

Methodology

Documentary research was used in combination with a qualitative approach for data collection. The documentary research included a review of the literature on existing development practices such as the sustainable livelihoods framework and participatory impact assessment approaches. It also examined sources that evaluate the limitations of past and current impact assessment approaches to sustainable highland initiatives, implemented by various national research institutions. The purposive sampling method was used for the selection of participants of both the Focus Group Discussions (FGDs) and in-depth interviews, in order to include the major participating researchers, extension staff and farmers of Bundu Tuhan that formed the focus of the study. Three FGDs with five farmers in each group and five in-depth interviews with local village and communal leaders were conducted on 27 Aug, 2015 (Figure 2). In this study, the main instrument for both the FGDs

and the in-depth interviews is a “guide” (all open ended questions, which are semi-

structured to ensure the session does not go astray to other topics).

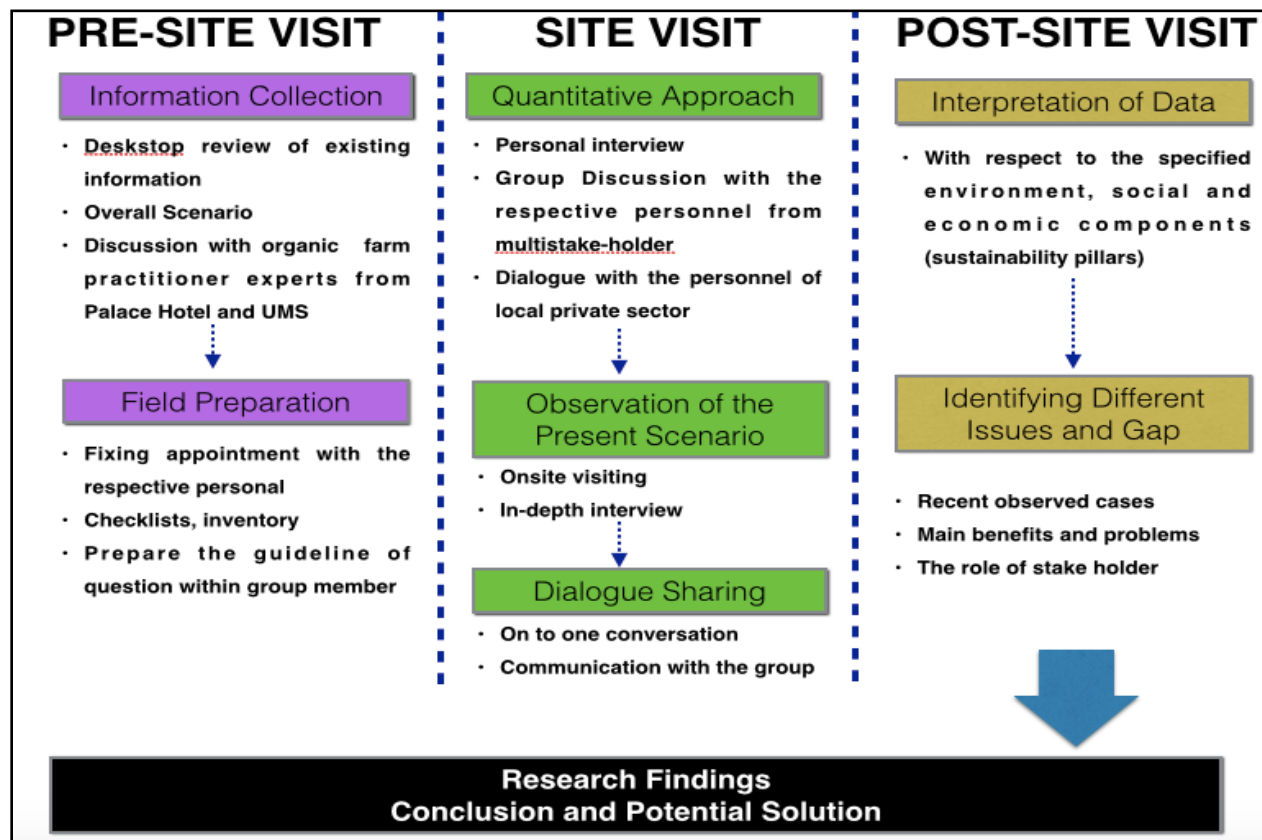


Figure 2: Flow of Methodology (pre-site, on-site and post-site assessment)

Literature Review

Sustainable agriculture is a growing phenomenon since the 1980s with the emergence of environmental understanding within modern framing (Jakson, 1980). This term should not only be viewed from the ecological, but also from a socio-economic perspective. The following are some example of indicators for sustainable agriculture, namely (i) sustainable use of land resources

(soil, water), (ii) risk reduction of chemical inputs, (iii) community empowerment, and (iv) the improvement of well-being in rural areas (Schreinemachers et al. 2013, Saint-Macary et al., 2013).

Sustainable development, in addition to sustainable agriculture, is particularly relevant for agriculture practices in the highlands. In Malaysia, an earlier adoption of

sustainable agriculture are popular tourism sites and for example as many tea farms (Barrow, 2006).

In recent years, the organic farming approach has gradually developed as a preliminary model of sustainable agriculture in Southeast Asia, including Malaysia (Bellon and Penvern, 2014). The basic principle of this farming technique is the use of organic material and crop systems to avoid the toxicity of synthetic fertilizers and pesticides (Lotter, 2003). Many farmers, however, still use conventional farming practices with chemical inputs to accelerate the growth of plants. The main reason is related to the slow pace of organic crop production compared to the increasing market demand. The Malaysian Government is promoting organic farming in a national regulation for the Malaysian Organic Certification Program, known as Sijil Organik Malaysia (SOM), which has been published by the Department of Agriculture Malaysia. The SOM is a standard that sets out the requirements for production, post-harvest processing and its impact to the natural environment and human health (DoA, 2007; Tiraieyari et al., 2014). SOM is a costly process that can only be implemented by wealthy agribusiness

companies. The large price-tag is currently too big of a risk for small-scale farmers.

So far, there is a small number of farmers (subsistence and company) who are willing to change from conventional to organic farming techniques in the highlands of Malaysia such in Sabah. To increase the interest in sustainable agriculture, the Sabah authorities propose different strategies in a detailed action plan and management system (WWF, 2007).

In addition, the community needs support from other stakeholders such as the private sector and NGOs to live sustainably. One of the most important matters is how to improve the lack of essential knowledge and skills of those related to business management and marketing strategy in the community. Someone to inspire and help a learn by doing approach may be a good way to trigger the interest of farmers. Kets de Vries et al. (2008) stated that transformational leadership is a key point for enacting significant changes within a community. As other research by Taylor (2011) and Visser and Courtice (2011) showed, the leader can also be an agent to promote sustainable practices and who can inspire and support actions towards

a better world. The transformational leaders may be the answer to the challenges in organic farming in Sabah.

Findings

The findings of the study showed that the local authorities, the local community and the private sector, as well as consumers generally agreed that agro-ecotourism can bring environmental, social and economic sustainability to the Bundu Tuhan Highlands and to the province at large. Rapid uncontrolled development and land use change are perceived as having negative impacts on the environment and biodiversity of the region. Being the village closest to the Kinabalu Park, sustainability practice should play an important role in Bundu Tuhan. The preliminary assessment provided a brief insight into the need for the Bundu Tuhan Highlands to use wise development planning of the area; particularly in agricultural and tourism decision-making.

(1) Current Organic Farming Practices

During the field visit in Bundu Tuhan, Sabah in 2015, the authors observed three farms locations around Mount Kinabalu, which were practicing organic agriculture. Almost all the farms were small-scale (less than one

hectare) and managed by family members, sometimes over several generations. The organic farming practices in this report refer to low soil tillage and fewer chemical inputs. The primary sources of organic fertilizer were compost from *Glomus* and chicken dung, both obtained from local suppliers in Sabah. There are three example cases with two type of organic farms, namely open field and greenhouse practices. The observed farms were part of a group of farmers supported by the Palace Hotel and the *Glomus Ecology* Company, which are also the main buyers and the main compost suppliers.

The first organic farm was owned by Mr. Martin Dalambun (a 63-year-old retired teacher) and his wife. In their open field farm, they raised several commercial highland vegetable crops such as lettuce (*Lactuca sativa*), cabbage (*Brassica oleracea*), chinese cabbage (*Brassica rapa*) and common bean (*Phaseolus vulgaris*). For additional soil nutrients and organic pest control, Mr. Martin chose the organic fertilizer Glomus Ecology. According to his experiments, one of the best formula to repel the pests is a mix of Glomus, big-sage flower (*Lantana camara*, read in Malay: *bunga tahi ayam*), and lemongrass

(*Cymbopogon spp.*), soaked in sugar water for several days (Plate 1).



Plate 1. Organic fertilizer “Glomus Ecology”

This small organic farm also used traditional tillage with simple hand tools such as a hoe. Before planting the vegetable seeds, the farmer loosens the soil with the hoe and mixes the litter (crop residue and weeds). This way is cheap (no additional labour) and easy (no need for special skills) for a small area such as Mr. Martin’s family farm.

The second observation was at Mr. Lukas’s farm, located more than 500 meters from the first site. This farm was close to a small river, its source of water supply. There were several terraced plantings with a length of approximately 100 cm and a width of approximately 60 cm as showed in Plate 2.

Vegetables raised on the farm include spring onion (*Allium fistulosum*), lettuce (*Lactuca sativa*), tomato (*Solanum lycopersicum*), and common bean (*Phaseolus vulgaris*). The farm applied a multi-cropping method (polyculture), which was the growing of more than two crops in the same area during a single growing season (Plate 2). This practice is also found in many other Southeast Asian countries. The main reason for this practice is to optimize the use of land and to prevent pests. As evidence of pest control, the farmer said that insects do not attack the vegetables due to the fact that they do not much like the smell of spring onions nearby.



Plate 2. Open land organic farming

The last observation was at a plastic greenhouses farm (Plate 3), which was owned by Mrs. Dusun. She recounted that the

vegetable farm had existed since her parents' time. Commodities planted here include three types of mustard and its family, namely white mustard (*Sinapis alba*), green mustard (*Brassica juncea*) and pakcoy (*Brassica rapa*, chinese cabbage). This farm was quite modern compared to the other farms and used pipe irrigation and *plasticulture* (the practice of using plastic materials in agricultural applications).



Plate 3. Plastic houses organic farming

This type of farming requires considerable capital and intensive maintenance such as replacing plastic roofs and walls of gauze periodically (2-3 years). According to the profit of these vegetables is quite favorable. She and her family have regular customers because they are members of the farming community, supplying crops to the Palace Hotel and buying fertilizer from Glomus Ecology. They deliver the vegetables directly

to the hotel. In addition, overproduction or low quality vegetables can then be sold to tourists or locals.

The three above-mentioned cases are pioneer farms in Bundu Tuhan which still need encouragement for both the improvement of productivity and the accomplishment of added value to environment, social and economic systems. Nowadays, the demand for organic products is increasing, not only in Sabah, but also in other parts of Malaysia. Therefore, the sustainability of organic farming practices can be achieved by strengthening the advantages and reducing the recent challenges as discussed in the next section.

(2) Advantages and challenges in facilitating and promoting organic farming

This study found that the organic farming is more sustainable for the highland regions. Even though challenges are apparent for the practice of organic farming, it has brought several environmental, social and economic benefits to local communities, as well as perceived benefits to customer's health according to interviews with local stakeholders. Advantages included: i) the

long-term environmental benefit; ii) the eagerness to change expressed by segments of the local communities, iii) the availability of technical support from both the local authority and private sector, and iv) the market for organic products is currently ensured by the private sector.

Several challenges for these farmers remain, including: i) problems in the cultivation and the post-harvest process, ii) sustainability of the workers due to an aging society, (iii) the potential to expand the market for organic products, and iv) price competition with conventional farming products.

2.1 Environmental

The long-term benefit of organic farming compared with conventional farming became clear during the site visit. Organic farming produced a higher yield and better product quality, was better at pest control, and protected human health. Based on the discussion with Mr. Edward (the coordinator at Glomus Ecology Company) at the site, the organic products were less tasty to insects compared with traditional products. Organic farming can maintain the soil fertility, ensuring the productivity of the soil in the long-term compared with using synthetic

fertilizer which only capitalizes in the short term.

According to the chief of the farmers' group, organic farming is not yet widely practiced in the highland village. This was evident by the small number of farmers who so far had adopted these practices. Most villagers were still practicing non-organic farming. Many locals also blamed the immigrant population for not practicing organic farming. One of the reasons may be related to capital and habits. For a small-scale farmer, the transition from non-organic to organic can be expensive, particularly for soil remediation and receiving the certificate from the government. Organic farming also needs intensive attention, which can impact the rising cost of labour. The most common way to nourish the soil and protect the crop remains the usage of chemical inputs (the Borneo Post, 2013).

And yet, there are benefits to organic input compared to non-organic chemicals. The cost of buying chemical fertilizers is more expensive. Chemical fertilizers need to be purchased separately with four different types of chemicals being used during and applied separately. In comparison, organic is

cheaper as there is a 4 in 1 substance that can be used. Chemical fertilizers with pesticides contribute to insects generating immunities to the very same pesticides used to kill them; this leads to pesticide resistant offspring that produce even more pesticide resistant progeny. However, as organic fertilizers cause avoidance rather than mortality, the insects exposed to organic control measures do not go through a bottle neck event which creates more resistant offspring (as evidence in Mr. Lukas's case).

Advantages remain to using non-organic techniques. Vegetables grown with chemical fertilizers require a shorter time to grow.



Plate 4: Holes in cabbage from pests

As seen in Plate 4, pests can have noticeable effects on the quality of organic vegetables and in turn consumer interest. When consumers are given the choice, they tend to

prefer vegetables that look perfect and are nevertheless cheap, even though they may contain pesticides or other chemical residue.

Meanwhile, organic vegetables are usually less smooth and relatively expensive. Pests are apparently still difficult to control, even though the farmers here were trying various forms of organic pesticides and herbicides (Plate 1) and intercropping planting patterns (Plate 3). One of the principles of organic farming is to create harmony with the environment. This is one of the reasons organic farmers tolerate that vegetables are grown side by side with weeds in order to avoid the use of herbicides. Unfortunately, weeds tend to expand across the land and compete with the vegetables for soil nutrients. Based on observations at the two open land farms, weeds also can cover the vegetables, which can affect the process of photosynthesis and impact the quality and quantity of the vegetables produced.

Many farmers in Bundu Tuhan still used chicken dung solution for soil nutrients as opposed to using the Glomus product. This chicken dung is considered as organic fertilizer by most of farmers. However, its overuse has led to problems such as soil

compaction, the growth of harmful microbes, and air pollution. The changes in land for conventional versus organic farming also require special treatment or time remediation to remove chemical residues from the soil. Another side effect of the long term use of conventional farming in this area is the possibility of contaminated irrigation water. One farmer noted that a team from the Sabah Government checked the water quality condition and the result was useable for the organic farms, but there was still the possibility of contaminated water being distributed to farms in the lower areas. The highland region generally has steep topography and high rainfall, which brings with it the great potential for the occurrence of catastrophic erosion and landslides. Changes to agricultural land could exacerbate this situation.

2.2 Social

The eagerness to change became clear during the discussions with the farmers at the sites. They all had started with a low interest in organic farming, but still accepted the idea and tried it for a year. After recognizing the benefit of organic farming, they were actively learning by participating in several trainings organized by the Agricultural Extension

Officers from the Department of Agriculture, and practicing techniques to produce some examples of bio-pesticide such as in Mr. Martin's case.

These farmers were committed to organic farming for the past three years, and intended to continue. Currently, there are 20 farmers (13 from the Bundu Tuhan area) engaging with organic farming practices led by Glomus Ecology. In the near future, the company plans to expand to another five to seven farms in line with increasing market demand.

A high level of technical support from both the public and the private sector was found during both, the site visits and the multi-stakeholder discussion. Glomus Ecology and the Palace Hotel are both strong leaders, that supply organic fertilizer and ensure the market for organic products. Technical support also comes from the Department of Agriculture, which provides short-course training for farmers. Organic certification is another technical support provided by the local government to advance organic farming practices. Furthermore, farmers will be fined by the Health Department at RM 1, 000.00 or sent to prison for three months if they sell

vegetables which were grown using chemical fertilizer.

As with other areas in developing countries in Southeast Asia, however, the number of farmers in Bundu Tuhan is declining year by year as fewer young people stay on farms to work. About 80% of the farmers are senior citizens (over 55 years old) and the remaining 20% of them are middle-age. An elder farmer said most young people from the village had migrated to Kota Kinabalu, the biggest city in Sabah. Recently, there was a strong focus on the needs of businesses actors (Glomus Ecology and Palace Hotel) rather than the needs of the community. The younger generation showed no interest in farming - organic or otherwise. Even among the agriculture students, many do not intend to make a career in farming. This aging problem and lack of inspiring leaders could be solved by finding innovative channels to engage the youth in agriculture.

Reducing the chemicals to grow produce by switching to organic products could provide benefits to the consumer such as poison-free foods, better nourishment and improved taste in the vegetables. Those who are concerned about health problems or are experiencing

health problems may be safer by consuming organic food. Many studies prove that the various diseases that impact humans are derived from food sources that are not healthy. Production of organic produce is also partially driving the increase in demand for organic products, especially in Malaysia.

Finally, most of the land that was studied did not yet have a legal organic farming license. Consumers that care more about health may still not be convinced and buy the products from Bundu Tuhan without legal certification. It is necessary for organic certification to be awarded legally to both farmers and distributors.

2.3 Economic

The market for organic products is currently ensured by the private sector through a contractual farming agreement among the Palace Hotel, Glomus Ecology and the farmers. This factor provides certainty for a ready market and is important for the success of organic farming in the area. From the FGD session, it was found that the price of some organic products was slightly higher than the conventional products, about a RM 4-5 difference. The potential to expand the market as well as competing with

conventional products are the current challenges faced by the highland farmers.

The promotion of organic farming has many positive impacts on the environment but the farming community needs the market to be ready for their organic products. There is a serious problem related to the price differences between organic and non-organic products in the market. According to the farmers, the higher price of organic produce leads to many local consumers to avoid buying organic products. The organic product not yet being the first choice of local consumers. In the case of the contracted farmers, they deliver the product to the Palace Hotel in Kota Kinabalu. Packaging under inappropriate conditions supports the uncontrollable growth of microorganisms on the surface of fresh-cut vegetables causing them to perish. Farmers should be trained to handle the vegetables during packaging to ensure their quality.

During the interviews, some farmers revealed that there was a tendency towards a monopoly market. Adoption of farmers indeed is initiated by the private sector (Glomus Ecology and the Palace Hotel) so that the majority of peasant production could

be bought by the hotel at a flat price. For the time being, this practice has not become a major problem for farmers who are contract members. In the future, especially in the era of the ASEAN Economic Community (AEC), this could be a serious problem for the Palace Hotel and the domestic consumers but a benefit for the farmers.

The global market can offer a wider choice of types of organic materials at a cheaper price. In addition, AEC could have an impact on the Palace Hotel because they could lose the main supplier. In this scenario, the contracted farmers would have the option of selling produce to other buyers. This potential trend is already indicated in the interview with Mr. Martin. He said that buyers from Brunei have started buying products from organic farming in Bundu Tuhan for higher prices than those of the local market. However, there is no suitable system or good insurance for any farmer who is selling produce abroad. Without a guaranteed buyer, farmers require time and capital to deliver their vegetables. In addition, farmers who are inexperienced will have difficulty in competing with non-organic products in local markets. The high cost of production and post-harvest handling is reflected by the higher price tag. Thus, the

consumers who are more concerned with quantity than quality would choose non-organic products as their first choice.

(3) The contribution of leadership for sustainable organic farming

A leader in a community is expected to bring significant change for a better future. Based on the results of the focus group discussions (FGDs), a trend from non-organic to organic agriculture in Bundu Tuhan was strongly supported by influential leadership provided by the government, businessmen and elders in the rural communities. The role of the three will be described in the following subsection.



Plate 5: Discussions with the Palace Hotel owner and Glomus Ecology developer

The Malaysian Government's strategic action plan for the conservation and preservation of the plateau in Sabah and Sarawak is implemented by the Department of Agriculture (DOA) in Sabah by encouraging organic farming through counseling activities, courses and monitoring of these activities (DOA, 2007). The leadership role of the local government is mostly on the policy level and should be improved in the future. It is a typical bureaucratic apparatus, following rules rigorously, and ensuring that people follow procedure.

The private sector, in this case Glomus Ecology and the Palace Hotel, have initiated the contract farmer program. They are not only doing the regular training for new members but also selling the compost "Glomus". There is a tendency to encourage farmers to depend on the Glomus fertilizer, which could indicate the presence of exploitation of the farming community. The manager of the Palace Hotel has also worked to increase market demand for organic food in Kota Kinabalu by promoting the product to both hotel guests and staff. Among thirteen adopted farmers, they elected Mr. Martin as

chair of the farmer groups. Changing the farmers' viewpoint was strongly influenced by Mr. Martin during their regular meeting at the weekly market where new members are also invited. This type of leader can inspire members and hold himself accountable for his actions.

Conclusion and recommendations

In the case of organic farming practices in Bundu Tuhan, there are both advantages and challenges to the environmental, social and economic spheres of sustainability. Long-term benefits to the environment and senior citizen empowerment (post-retirement age) are important issues here. In addition, organic products support a healthy lifestyle for consumers, especially in urban areas such as Kinabalu City. The findings in this study show that the local authorities, communities and the private sector support the idea that organic farming can boost the economic value of Bundu Tuhan Highlands and the province at large.

However, there is the continuous challenge with the use of chemical inputs that have not been controlled in farming practices, and which have resulted in various environmental problems and issues such as soil degradation,

as well as an influence on human health. This will lead to a negative impact on the entire ecosystem and eco-tourism businesses in the Bundu Tuhan Highlands, which are highly dependent on nature.

It is important for all stakeholders to frequently discuss pertinent issues and play a role in ensuring sustainability in highland development, especially in regards to agriculture. For example, the local authorities should take more serious steps to preserve the environment, and be open to public views, as well as work on sustainable solutions with a focus on the agricultural sector. Local communities should come together to not only drive the economy of the Bundu Tuhan Highlands, but to take part in environmental community projects in order to meet social community needs and care for the environment. Tourist awareness of carrying capacity and limits of change, as well as sensitivity to the needs and privacy of the local community, especially the indigenous people, should be increased and emphasized. In conclusion, protecting the environment is not the sole responsibility of the local authorities, but local communities and the private sector should also play a

transformative role in caring for the natural environment.

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