

Pathways to Sustainable Development Goals: Vision, Identity, and Behavior Change

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The UN adopted the 17 Sustainable Development Goals (SDGs) in 2015, which is a very important accomplishment. But these goals will be difficult to reach for many reasons. How we can meet the critical challenges of finding and following pathways to sustainable futures for all of humanity in the many different cultures and rapidly changing social and bio-physical contexts across our world?

We need to develop and employ a more integrative, holistic approach to science and education in order to address the deep complexity of these global to local challenges. We need to use effectively both the depth and breadth of expertise, perspectives, and methods from social sciences, natural sciences, and humanities (e.g., law, history, art, philosophy, ethics). Equally importantly, we need to engage openly and respectfully with the knowledge and creativity of the peoples of the world.

Narrative expressions are an important lens that connects us with the sense of identity of people and their creative visions of past, present, and future. Narratives provide insights into social cohesion in communities, visions of desired futures, and motivations for action by individuals and groups. We are using this information to understand collective behavior change in communities and to develop agent-based models that can help us expand our creative thinking about possible pathways to sustainable futures appropriate to people in different cultures and communities.

Empowerment of the hotel sector to disseminate information on dengue prevention and control to international travelers: an initiative for sustainable development of Bali, the Republic of Indonesia

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Increasing media attention on the emergence of infectious diseases in the current decade has heightened the concern regarding travel destinations. Travel cancellation negatively impacts the bottom line of the travel and tourism industry. The subsequent business downturn could result in increased unemployment and may give rise to social issues. We recall that in 2016, the media intensively covered outbreaks of Zika virus infection in Brazil, as well as the challenging control efforts for the vector – the *Aedes* mosquito. A prominent academic journal even published an article advocating cancellation of the summer Olympic Games in Rio de Janeiro (Attaran, 2016). It is thus essential for tourist destinations to prepare for, and respond to, threats of emerging infectious diseases.

Infection caused by the Dengue virus is the most rapidly spreading mosquito-borne viral infection in the world today. Mainly mediated by *Aedes* mosquitoes, dengue has a spectrum of disease ranging from asymptomatic, mild febrile illness to severe and occasionally fatal haemorrhagic fever. The disease has sustained transboundary transmission, including tourist destinations such as Hawaii, the U.S.A. (Johnston *et al.*, 2016) and Bali, Indonesia (Yoshikawa and Kusriastuti, 2013). Researchers caution that travelers are a key factor contributing to the global spread of dengue (Gubler and Clark, 1995).

Travelers to tropical resorts tend to be unaware of the health threats due to mosquito bites. The Capital City of Denpasar and Badung District account for the majority of the reported dengue cases in the Bali Province (Yoshikawa and Kusriastuti, 2013). These popular tourist areas also attract local labor force. While health authorities offer health education to local people, international travelers often remain out-of-reach in Bali, largely due to the language barrier. Other countries like Italy (Rovida *et al.*, 2011; Zavattoni *et al.*, 2016), Japan (Yoshikawa, 2011; Fukusumi *et al.*, 2016), and Australia (Ernst *et al.*, 2015; Warrilow *et al.*, 2012) continue to report dengue among travelers returning from the world famous tourist destination. What can be done in Bali to help travelers gain knowledge of local disease patterns, high-risk areas for current dengue outbreaks, and personal protective measures to prevent mosquito bites?

The purpose of this study, traversing the disciplines of Entomology, Travel Medicine, and

Marketing, are two-fold: advocating the proactive role of hotels in Bali in providing information on dengue prevention and control to international travelers; as well as identifying gaps in mosquito control measures implemented at hotels. Such an initiative aimed at improving public health to benefit both travelers and locals in Bali, which could thus support Bali's efforts in advancing "Good Health and Well-Being", one of the Sustainable Development Goals. Indeed, promoting population health is essential to achieve development (Yoshikawa and Surjan, 2016). Maintaining and/or improving such an effort is necessary to sustain development.

We hosted a workshop in Nov 2014, collaborating with the local health authority and a hotel association that involved over 200 hotels in Bali. The workshop shared information, including: governmental operations of dengue control in Bali, reported dengue cases in Indonesia, the global burden of dengue, and practical advice on mosquito control. Prior to the workshop, we conducted a survey to understand the levels of knowledge on dengue among 32 managers and staff. Information on existing control measures and mosquito incidence at the participating facilities was also collected. The results of the survey revealed that 81% of the participants understood that dengue could be life-threatening, but only 67% knew that the disease was mosquito-borne. Mosquito nuisance problems were reported at 83% of the facilities surveyed; and 81% of them utilized fogging as a control measure to prevent hotel guests from being bitten by mosquitoes. The consequence of such high prevalence of routine fogging could lead to mosquitoes developing resistance to the chemicals used, which could then undermine the control efforts of the local health authorities. Only one facility mentioned the conduct of larval surveillance or control, which is an indispensable measure for mosquito control. An overview of the situation in Bali indicates that improved efforts in reducing mosquito bites is essential.

Following onsite inspection for mosquito control at eight accommodation facilities in 2015, we directed our attention to analyze the roles of hotels in Bali vis-à-vis the surrounding communities, as well as their experiences in dealing with other local health- and life-threatening risks. Social implication of tourism in Bali has been controversial; luxurious hotel development in Bali has been contentious. On the other hand, Bali's travel and tourism industry, including the hotel sector, has shown resilient recovery from two bomb explosions, the global outbreak of SARS, and the Iraq War, due in part to the promotion of international tourism marketing and efforts to improve safety and security on the resort island.

We hope to encourage hotels bordering the local communities to contribute to the protection of the communities by conducting effective mosquito control operations in and around their accommodation facilities in addition to assume a proactive role in reaching out to international travelers on dengue prevention and control. Our follow-up studies include capacity building for risk communication and mosquito surveillance at hotels.

Title: “Work Experience Education” in the Secondary School in India: The perspective of Women’s Empowerment

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Abstract

SDGs 5, “gender equality” is the premise to promote achieve all SDGs and the global issue which both developing and developed country must contribute. According to the Ministry of Women and Child Development (MWCD), India, “there has been recent concern about the decline in women’s workforce participation in India. Simultaneously, women have become more aspirational and are ready to contribute equally to the economy”. To promote all women’ and girls’ empowerment, various factors, e.g., language, religion social status should be examined. Therefore, interdisciplinary study of education in India, one of the multi-cultural nations is needed to push out women and girls for work participation in the world.

This study examines “Work Experience Education” in the secondary school in India. It has been a unique part of the Indian curriculum, with its origin being Mahatma Gandhi, who was the activist of the Indian independence movement against British rule to create new education system to overcome colonial governance by Britain. First, it was a policy of Basic Education in the 1930s called “Education through the manual work”. It has been basically continued until now, changing its name as “Crafts”, “Work Experience”, “Socially Useful Productive Work (SUPW)” and “Work Education”.

Previous research has shown the concept of “Work Experience Education” and its history. However, the current status of how and what they teach and how students accept the class has not been examined. Therefore, I conducted a survey in secondary schools in X city in Maharashtra three times in 2017. The survey included interviews for teachers and questionnaire for students from the perspective of gender empowerment.

First, both teachers and students had expectations for teaching/acquiring disciplinary knowledge and multi-skills through “Work Experience Education.” However, in detail, male students recognize the possibility to

access labor market more than female students. Teachers describes acquiring skills and high salary work would lead to overcome the economical gap and discrimination. Based on this idea, male students who selected “acquiring skill” for their aim of the subject had relatively same idea with the teacher more than female students.

Second, female students in girls’ high school recognized the possibility to redress gender gap of labor market more than female students in coeducational school. Based on teacher’s idea, students in girls’ high school who selected “acquiring skill” for their aim of the subject had relatively same idea with the teacher more than female students in coeducational school.

In conclusion, first of all, from the perspective of women’s empowerment, “Work Experience Education” could contribute two of three aspects of Women’s Empowerment, access of resources and job opportunity and acquisition of decision making. However, enhancing self-esteem was not clearly shown. Second, following the result of expectation of this subject, male students might have more possibility to access labor market than female students. Additionally, female students in girls’ high school might have more possibility to access labor market than female students in coeducational school.

Therefore, for enhancing women’s workforce participation in India, the curriculum should lead females especially in coeducational schools to have the career-related motivation for learning “Work Experience Education.”. And, as MWCD mentions that women in India “have become more aspirational and are ready to contribute equally to the economy”, “Work Experience Education” should keep girls’ motivation for their study and future goal with education environment promoting women’s empowerment.

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A Challenge for Rural Road Construction and its Impact in Myanmar

: Toward Achieving Community Empowerment and Sustainable Maintenance

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CORE roads, constructed with Do-Nou technology (a Japanese term for soil bags) by NPO Community Road Empowerment, is one of the participatory approaches through raising the motivation to improve their life leading to poverty reduction, and it is closely related to end poverty in all its form everywhere (United Nations Sustainable Development Goals, Goal 1). However, the exact relationships between CORE road construction, community empowerment, and sustainable road maintenance remain a key topic to be investigated. Therefore, this study aims to examine the impact of CORE road on the villagers' lifestyle and to make a policy implication for sustainable project.

The authors conducted a field survey in 3 villages along CORE road, located near Nay Pyi Taw, the capital of Myanmar (Table. 1). Results obtained from the interview survey showed that the CORE road has increased connections between villages, reduced costs in key industries such as agricultural activities, and improved access to not only to health services and schools, but also Nay Pyi Taw and other cities to work for the service industry after the road construction. Those effects are varied and affect people differently depending on their occupation, income, etc. Analysis also implied that development in this area is the mutual effect of both road construction and the development of the nearby urban area. Considering a policy implication for a challenge toward achieving community empowerment and sustainable maintenance, whether to be able to sustainable development for the villages and maintain the road in the future, it depends on how the villagers as well as the road committee member perform and manage the road maintenance.

Table.1 Survey Abstract

Survey Date	13th August 2018. - 19th August. 2018 (7days)
Location	3 villages (K Village, T Village, Z Village) Lewe Township, Det Khi Na District, Nay Pyi Daw
Completion of the road	October 2015
Length of the Road	1,000m