

EnviroLab Asia

Volume 1
Issue 3 *Science, Economics, and Policy*


Article 6

2017

Transformation

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Recommended Citation

Meyer, Wallace M. III (2017) "Transformation," *EnviroLab Asia*: Vol. 1: Iss. 3, Article 6.
Available at: <http://scholarship.claremont.edu/envirolabasia/vol1/iss3/6>

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Transformation

Cover Page Footnote

Wallace M. (Marty) Meyer III is the Director of the Robert J. Bernard Field Station (BFS) and Assistant Professor of Biology at Pomona College in Claremont CA USA. He has research interests in conservation biology, invasion biology, biogeography, and ecology, including aspects of population, community and ecosystem ecology. Enviro-Lab Asia has provided him with an opportunity to explore how human modifications are influencing biodiversity and ecosystem functions in tropical Asia expanding his perspective on Anthropocene.

Transformation

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Abstract: Prior to leaving for Claremont Colleges' Envriolab Asia trip to Malaysia and Singapore, I was conflicted by the question: Do we have the moral authority to interfere with resource extraction and oil-palm development in SE Asia? At that time, the trip seemed imperialistic. Why should people from Malaysia, Indonesia or any developing SE Asia country listen to a group of liberal arts college faculty from a city where widespread habitat modifications have led to significant loss of native habitats, declines in biodiversity, and changes in how these ecosystems function? Many observations transformed my opinion and have inspired me to advocate for transformative environmental and social change both in SE Asia and at home.

Witnessing how extensive habitat modification and resource extraction has been in developing SE Asian countries is critical. It is easy to read about rates of oil-palm expansion and deforestation without truly comprehending its magnitude. For example, net deforestation rates are estimated at 1.44 million hectares per year. Our minds, even scientific minds, are ill-prepared to comprehend such numbers, but the trip to Borneo Malaysia provided the context. After arriving in Miri, we drove for two and a half hours and saw nothing but oil-palm plantations. On the second day, we drove for another 3 to 4 hours into higher elevations and saw heavy logging activity and only secondary forest. In more than five hours of traveling, we had not witnessed one piece of land that had not been modified by a human in at least 20 years.

The environmental outcomes of these transformations were visible. The most obvious one was the significant amount of sedimentation in the river. According to conversations with local people, sedimentation has deleteriously influenced fish stocks and river transportation. Less obvious was the low vertebrate diversity. In the three days I was in rural areas and secondary forests of Borneo Malaysia, I saw only three birds and no mammals other than dogs and humans. After my first day, I thought the lack of birds and mammals were just an anomaly associated with me not being focused on this component of the biota (I am an invertebrate biologist) and hanging around a large group of extremely talkative humans. So for the next few days, I made extra efforts to look for birds and mammals. I got up early and went for walks. When we took breaks, I escaped and systematically scanned the sky. I also asked our guides to alert me if they saw anything. Three birds are what I recorded despite my efforts. I will admit I heard more, but still the forest was largely lacking bird and mammal life relative to other tropical areas I have visited (northeastern Australia, Belize and Guatemala, and Palau to name a few).

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What is the cause of the lack of birds and mammals in these forests? It seems that the native people get most of the blame. While native people do forage for bush meat, they have done this for centuries. In addition, most of the younger generation is currently in cities working, reducing impacts. On peninsular Malaysia, poaching of some animals like pangolins for export to China for food and medicine is also blamed on native people. The numbers of collected individuals is sickening and a poaching is a significant threat to many animal populations/species. While I do not doubt that some native people are associated with the trade, I imagine others are also involved considering the economic gains from such practices. While bush meat harvesting and poaching receive significant attention, I cannot help but think that wide-scale landscape disturbances and modifications are playing a more significant role, but receiving less of the blame. This becomes especially apparent when you combine my observations with the ecological literature. For example, a meta-analysis, which synthesizes multiple studies, examined the effects of oil-palm plantations on many taxonomic groups, including lizards, birds, bats, primates, ants, bees, mosquitos, beetles, moths, forest butterflies and isopods showed that only 15% of the species recorded in forests were also found in oil palm plantations. Other studies show that following logging, it takes at least 30 for significant components of the biodiversity to recover.

Despite all the environmental damage, the most striking observation was coming to the realization that understanding land rights is a critical component of any conservation program. Land rights of native people were largely disregarded in Sarawak Borneo which has multiple consequences. First, it means that large portions of the landscape are controlled by the government. As such, development and resource extraction can occur quickly, or can be slowed and become sustainable (more on this term later), if there is political will. Because much of the land associated with various tribes are near rivers, expansion further threatens the health of river and marine systems. Second, it means that habitat modifications not only influence biodiversity, but also threatens native human cultural diversity. This is most relevant to construction of mega-dams where whole villages will be lost due to flooding. In Borneo, mega-dam construction is slated for 10 rivers. On this trip, our guides were native people who will lose their village if the Baram Dam is built. I understand that people will be critical that our opinions were shaped by the opinions of our guides. While I admit that a broader survey of people of Sarawak is needed to determine a complete picture of perceptions associated with dam building in the region, it was deeply moving to witness the passion, community strength and organizational effort of the native people as they tried to preserve their native homelands. The risk and rewards of fighting against dam construction are significant. If native people oppose dam construction, and it is built, they may receive no reparations. However, losing their culture, which is so concretely tied to place, was clearly such a bad option for those involved that no reparation is being considered.

Following the trip, I have dedicated significant time to reflecting on how I might advocate for and influence transformative environmental change not only in SE Asia, but at home in Los Angeles. In this process I have also reflected on what it means to be sustainable and what it means to be a developed nation. Several things have occurred to me:

First, the term sustainable has no meaning. Sustainability is usually defined as actions that satisfy the needs and aspirations of the current generation without diminishing the needs and aspirations of future generations. While such a statement sends a powerful ethical message, it is extremely human centric and does not provide an operational definition that allows one to measure and

objectively determine if an action is “sustainable”. For example, this definition does not quantify how many species/populations can go extinct or how much carbon can be released into the atmosphere despite the fact that both may influence the well-being and aspirations of current and future generations. Without strict definitions, an industry or country is allowed to use the term however they please.

If you had asked me before this trip if I would prefer sustainable oil palm or un-labeled oil palm, I would have championed the sustainable oil-palm. But, what is sustainable oil-palm? It seems that the only criterion for oil-palm to be sustainable is that the plantation is on land that was not a “forest” previous to plantation implementation. The term forest, in this case, does not include secondary forest, only primary forest. Once logged or disturbed in anyway, the land is considered degraded and sustainable oil-palm can be grown. While this may seem logical, the proportion of land dedicated to logging concessions is so extensive that expansion oil-palm and permanent transformation of the majority of the landscape seems eminent. It also undermines conservation efforts because secondary forests, despite my inability to find birds, are important habitat. After 30 years, secondary forests can recover ~ 80 % of its diversity. Logging in the area of Sarawak we visited were on 20-year logging rotations. In addition, sustainable oil palm does not address if a plantation deleteriously affects biodiversity or anything with regard to pesticide, herbicide, or fossil fuel use. In addition, sustainable oil-palm does not address if plantations negatively influence native people, or if the plantation treats its workers fairly.

Second, being developed means you consider social and ecological issues. If you agree with this statement, then wouldn't the logical next assertion be: if you want to be a developed country you should be considering social and ecological impacts. I am not going to argue that consideration of these issues isn't tied to the privilege of wealth. But if developing countries are suggesting that they or the industries they are directly supporting are sustainable, i.e., considering the need and aspirations of the present and future generations, more attention should be given to these issues as their country develops.

My most disturbing realization was that while these multifaceted environmental and social issues seem daunting, answers to many of these ecological and social issues are known and only require implementation. As such, liberal arts college professors from developed nations with a wide breadth of knowledge and experiences are exactly what the region needs. Implementing the collective knowledge of such a group can both support future development and economic growth while mitigating environmental and social degradation. The task is to persuade governments and industries to develop a new model for the developing world. This model should incorporate environmental and social concerns, adopt quantifiable long-term sustainability practices, and preserve diverse biological and human communities while expanding economic interests.

Reflections on the Reflection:

I wrote the reflection above in the spring of 2016. When asked to edit the reflection prior to publication, I decided that editing it now would change the tenor of the reflection likely rendering it unauthentic. When I read what I wrote, I saw how naïve I was at the time, and I was surprised at my unconscious bias for the developed world, which I clearly held in a higher

standard than I do now. As I write this in January 2017, I still believe answers to many of these daunting ecological and social issues are known, and only require implementation and compassion. However, lack of implementation is not just a problem associated with developing countries. Governments of developed countries do not adequately consider social and ecological issues. For example, the United States of America is currently discussing placing a cap on the total number of listed endangered species, despite being in the midst of the sixth mass extinction event. It is also currently propagating xenophobia and supporting extractive industries that intend to move fossil fuels across a sovereign native American nation without permission, and at times, with brutal force.

The current disregard in the USA for social and ecological issues, particularly native land rights, is not only alarming, but leaves me looking for models of how best to advocate for a sustainable future. As such, I have come to realize that the experience in Sarawack was critical to my preparation to become an effective advocate for the environment and related social issues. I am happy to report that the Baram Dam is not currently slated for construction. The native Dyak people won by conducting a sustained, dynamic and passionate resistance incorporating legal and public opinion campaigns. The effort must have been exhausting, but the joy of success must have been overwhelming satisfying. As environmental protections erode in my country, this model of success is uplifting. Success demands passion and a tireless effort. The task no longer is just to effectively articulate a sustainable model, but to demand implementation. This is true for people from every nation. The fate of our planet and future generations that require the planet for their survival, as well as, their aspirations, require that we act.