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慶應義塾大学 環境情報学部兼教授政策メディア研究科 THIESMEYER, LYNN ティースマイヤ・リン
SUSTAINABLE DEVELOPMENT GRADUATE PROJECT (サステナブル・デベロップメントプロジェクト)

“Golden Quadrangle Development and its Effect on Rural Sustainability”

(「メコン川流域の黄金四角での開発や農村地域の持続性への影響」)

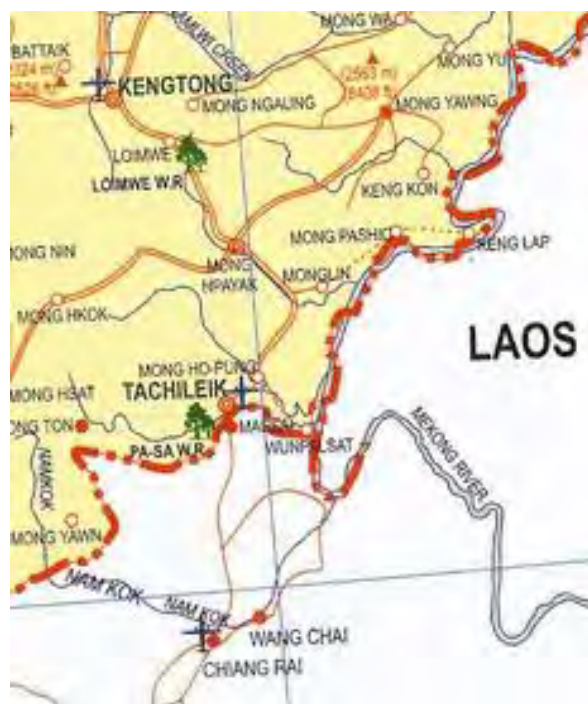
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研究対象地の地図・Map of Project Area



- 1 出張 (現地調査及び会議での発表) On-site Surveys, Meetings and Conferences
 - 1.1 ティースマイヤ 8月4日～8月12日 米国ワシントンDCで、東南アジア(本研究対象地)についての様々な会議や成果発表
 - 1.2 潘賽一 (M2) 8月26日～9月10日 中国雲南省 山間部の換金作物(お茶畑)の持続性
 - 1.3 ティースマイヤ・リン 2月23日～2月29日 タイ北部及びミャンマー東北部シャン州タチレク市タチレク群チェンラッ区、

2 内容 Research Contents and Findings

The effects of the foreign investment in the Golden Quadrangle Development scheme in the Upper Mekong region derive from the 3 major types of infrastructure and energy projects in the region, which includes Shan State of Myanmar, Yunnan Province of China, Bokeo and Luang Nam

Tha Province of Laos, and Chiang Rai Province of Thailand. These 3 kinds of projects are highway construction, water / hydropower construction, and intensified mining. All of these projects are located in rural areas that encompass lowland, upland, forest, and watershed areas. They have impacts, both advantageous and disadvantageous, on the local ecosystem and the rural communities' economic livelihoods.

The highway and overland transport projects in the region include the newest one surveyed for the first time this year, the Myanmar – Laos Friendship Bridge from eastern Shan State in Myanmar to Luang Nam Tha Province in northern Laos and the connecting highways on both sides of the bridge. In Laos the highway is Route 17 from the China border at Muang Singh; this highway, until 2015 a poorly graded and dry weather-only road, has recently been improved and re-paved. On the Myanmar side it is still a narrow county road but it is paved and now connects to Asian Highway 4 between the Shan – Thai border town of Tachileik and the China border north of the state capital of Keng Tung. The bridge itself, constructed through investments by both Myanmar and Laos with investment inputs from the other Mekong countries, opened early in 2016 and is of concrete and steel construction, rising approximately 20 meters above the Mekong River north of the former Golden Triangle area where Thailand, Laos and Myanmar share a border.

The most recent water projects in the area include the large-scale hydropower dams on the Mekong in China near the borders of Laos and Myanmar, and also the planned dams just below the Golden Quadrangle along the Mekong in the Xayabour area of Laos. Some of these are barrage dams. Along with the recent climate change-related changes in rainfall and El Nino, these dams are often blamed for extreme drought and flooding. The crop year 2015 -2016 is currently experiencing a severe drought in which over 500,000 agricultural workers in Thailand are out of work, and the livelihood effects are also felt in neighboring Myanmar and Laos. While such large dams may influence the volume, flow, and sedimentation of river water as well as making navigation more difficult – the Mekong has traditionally been one of the main cargo trade routes of Southeast Asia – China has already blasted open the Mekong's narrower, rocky section just north of the area studied in Myanmar. The effects of the blasting and resulting changes in water flow require further research in the near future.

A second type of infrastructure that affects both waterways and transport highways is bridge construction. Following upon the opening of the newest Thai – Laos bridge across the Mekong at Chiang Khong in 2014 is the first Myanmar – Laos bridge across the Mekong which was completed in late 2015 and is now open to foot and vehicular traffic, though the volume of both is still quite low.

Finally, the entire ASEAN regional shift from local and self-determined food cultivation to high-yield, plantation agriculture is part of the development, and supply of, more globalized markets. The new transport infrastructure as well as the increasing supply of hydropower directly affect the procurement, processing, and marketing of all goods, particularly of agricultural products.

The observable impacts of road, bridge, and dam construction on rural sustainability, including

the supporting ecosystem and agricultural livelihoods, were studied in this research. There are both primary and secondary impacts on the environment and economy of these rural areas. The primary impacts, that is, those coming directly from project construction, are detailed below, beginning with advantages that local populations perceive.

Advantages Perceived by farm workers

- Road and bridge have facilitated greater entry by Chinese entrepreneurs offering cash and goods
- Seasonal contract farming resulting in temporary rise in wages
- Currently no cost for agricultural inputs, which are provided free of charge by the Chinese investor
- Opportunities for former out-migrants to return home due to local wage labor
- Opportunities for other farm workers, including members of other minorities, from deprived areas of Shan State to in-migrate for labor
- Artisanal mining
- Increased capability for consumption, especially of daily needs (purchased food)
- Improved roadways for greater access to local (domestic) markets and jobs

Disadvantages perceived by farm workers or by the researchers

- Road and bridge infrastructure bringing in un-inspected, hazardous products for use in and by farms and food and water supply
- Contract farming and its wages covers only 3 months per year
- Use of child as well as adult labor and continued illiteracy and lack of education among all communities
- Other farm workers, and other minorities, from more remote, deprived, or conflict areas of Shan State in-migrating without adequate housing, health care, or access to appropriate information
- Very high, universal and frequent use of toxic chemicals, especially fertilizers and herbicides
- Local water shows widespread eutrophication
- Deforestation
- Strip mining and cutting-down of mountains and hills
- Lack of land registration system for private ownership resulting in land transfer to outside investors for purposes unrelated to communities
- Improved overland transportation leads to greater and more frequent importing of hazardous agricultural chemicals from neighboring countries
- Agricultural chemicals leaching into all waterways, from feeder streams into the Mekong itself, making toxic impacts more widespread. Some workers working directly with the chemicals reported nausea and vomiting.
- Chemical contamination of the Mekong River in the Quadrangle area is shown in its high oxygen demand and increased content of phosphates, ammonia, nitrates and nitrites. The

resulting issues include observable harm:

- to human health;
 - to water quality;
 - to the large agricultural areas and their products along the Upper Mekong which use it for irrigation;
 - to the soil in these areas, which has quickly become desertified;
 - to the fisheries within the Mekong;
 - to the local as well as the marketed food supply.
- Increasing lack of self-determination in livelihoods and decision-making due in part to the reliance on and tolerance of outside investors and their projects

As can be seen from the above, the impacts of the recent development-related construction in this particular region of the Upper Mekong show a relative leaning towards disadvantages in the present or the near future. This result may be partially due to the preliminary nature of the sample (geographically and population-wise) and the limited scope of the research, although it correlates well with previous years' research findings by this scholar. The results may also show the very recent nature of some of the infrastructure being discussed here, including the new Myanmar – Laos bridge and improved roadway, and also the planned, but not yet constructed, Mekong dams both upstream (at Guangpo in China) and downstream (at Xayabouri in Laos). The third conceivable reason for the perception of advantages by the local community, as opposed to disadvantages perceived by the researchers, can be split into two features. One is that the interviewed local respondents had little or no education, were unable to speak either the mainstream language (Burmese) or that of the investors (Chinese), and had little acquaintance with or understanding the actual infrastructures involved. The second is that the respondents are in a historically deprived situation. Located in an extremely remote, though resource-rich, area of one of the world's least-developed countries, belonging to minority ethnic groups living within a traditional society of non-market, pre-modern agriculture, forestry, and fishing, they were left behind in Myanmar's recent economic development and found themselves vulnerable to increasing poverty including that of basic needs. With the localization of outside investors' projects in such remote, resource-rich areas, the opportunity for relief of the most urgent economic distress through temporary wage labor is one that cannot be refused. In other words the local farm workers do not appear to have a choice.

Choice is some ways a subjective term. Here, it appears that local workers have little or no choice both economically as well as politically. In the very newly decentralized governing system of Myanmar, the possibility for participation of illiterate, minority, and destitute populations in their local economic planning and implementation is still far off.

3 今年度の成果・今後期待される成果 **Current Results and Expected Results**

3.1 2015年7月24日 タイ、チェンマイ国立大学Regional Center for Social Science and

Sustainable Development開催『Myanmar in Transition』学会での発表「Environmental Damage and Poverty Migration to and from Myanmar」

- 3.2 2015年8月末 米国ワシントンDCにてWoodrow Wilson Center for International Scholars, China Environmental Forum及びStimson Centerで、本研究についての打ち合わせ
- 3.3 2016 年近刊 単著論文 “Security and Space in China-Myanmar Transboundary Water Projects.” 学術論集内論文。吳編 *China's Global Quest for Resources: Energy, Food and Water*. London: Routledge.
- 3.4 授業資料への入力 本研究のビデオ、画像、面接結果、先進統計データというデジタル教材は 28 年度の大学院プロジェクト、研究会及び講義（先端研究や社会と資源）で使われる。(Digital Materials for Graduate and Undergraduate Use)
- 3.5 次年度の学際・学術交流の研究や発表で使われる。(Further joint research)

4 参考資料 List of References

Gao, Q. (2014) *A Procedural Framework for Transboundary Water Management in the Mekong River Basin*. Leiden: Brill NV.

堀井伸浩編『中国の持続可能な成長－資源・環境制約の克服は可能か？』日本貿易振興機構アジア経済研究所 2010年

Ishida, Masami, ed. (2013) *Border Economies in the Greater Mekong Subregion*. Palgrave Macmillan IDE-JETRO Series.

Lazarus, Kate, Pierre Dubeau, Channa Bambaradeniya, Richard Friend, and Latsamay Sylavong (2006). *An Uncertain Future: Biodiversity and Livelihoods Along the Mekong River in Northern Lao PDR*. Bangkok and Gland: The World Conservation Union (IUCN).

Lim, Hank and Yasuhiro Yamada, eds. (2014) *Myanmar's Integration with the Global Economy: Outlook and Opportunities*. Bangkok: IDE Bangkok Research Center.

Mirumachi, Naho, and Mikiyasu Nakayama (2007) “Improving Methodologies for Transboundary Impact Assessment in Transboundary Watercourses: Navigation Channel Improvement Project of the Lancang-Mekong River from China-Myanmar Boundary Marker 243 to Ban Houei Sai of Laos,” *International Journal of Water Resources Development*, vol. 23 issue 3, pp. 411 -425.

森晶寿（編）『東アジアの経済発展と環境政策』ミネルヴァ書房 2009年

Nyein Nyein (2014) “Shan Farmers Say Gold Mining is Wrecking their Land.” *The Irrawaddy*, 16 July 2014. <http://www.irrawaddy.com/burma/shan-farmers-say-gold-mining-wrecking-land.html>

The Nation (2016). “Hundreds of Thousands of Farm Workers Left Jobless Because of Drought: NESDB.” *The Nation* (Bangkok), 1 March 2016.

<http://www.nationmultimedia.com/national/Hundreds-of-thousands-of-farm-workers-left-jobless-30280473.html>

Odaka, Konosuke ed. (2016) *The Myanmar Economy: Its Past, Present, and Prospects*. Tokyo: Springer.

Simpson, Alan (2014) *Energy, Governance and Security in Thailand and Myanmar (Burma): A Critical*

Approach to Environmental Politics in the South. London: Ashgate.

Tsuneishi, T. (2009) "Border Trade and Economic Zones on the North – South Economic Corridor: Focusing on the Connecting Points between the Four Countries." Chiba: Institute of Developing Economies, IDE Discussion Paper no. 205.

Vaddhanaphuti, Chayan, and Amporn Jirattikorn, eds. (2011) *Spatial Politics and Economic Development in the Mekong Sub-region*. Chiang Mai: Regional Center for Social Science and Sustainable Development.