



CHAPTER VI

CONCLUSION

Mankind has reached a point of both unprecedented human development as well as unprecedented environmental destruction, which left unchecked could pose a threat to the survival of our species. Although a technological solution to this dilemma might someday emerge, we already possess the knowledge and tools to preserve our environment while promoting economic development around the world. Sustainable development, despite stemming from a movement seeking to show the seeming incompatibility between growth and the conservationism actually does the opposite, providing the principles and guidelines towards making sustainable growth a reality.

The purpose of this study has been to propose a framework for sustainable infrastructure development in the Greater Mekong Subregion, incorporating knowledge gained from the experience of road construction in Lao PDR. Indeed, the main research question has been to discover what knowledge can we glean from past infrastructure development in the Greater Mekong Subregion and Lao PDR which would facilitate the creation of a more sustainable development model.

Analysis of both infrastructure and sustainable development reaffirmed the value of infrastructure towards the improvement of human welfare, yet also highlighted its deficiencies, notably its strain on the natural environment. However, after further analysis the concept of sustainable development, with a definition that focuses on maintenance of the natural capital stock, is explored, and has proven to be an attractive path towards mitigating infrastructures harmful side-effects.

Based on both the literature analysis and a case study of Lao PDR's Highway 9, a framework for sustainable infrastructure development has been presented. This framework focuses on the four dimensions of a project, as observed in the case study: Sound planning,

sound implementation, effective monitoring, and accountability. Recommendations were proposed which would introduce the maxim of sustainable development to each development phase. By applying principals of sustainable development, notably the preservation of natural capital, I have provided ways in which these four phases, planning, implementation, monitoring, and accountability can be improved. My recommendations are as follows:

1) Sound Planning

- A. Environmental impact assessments need to be conducted for every infrastructure project and findings should influence project design
- B. Alternatives for projects proposed by the EIA should be seriously considered if the impact of the original design is judged to be too high
- C. Environmental valuation should be incorporated into the environmental impact assessment process
- D. Said valuation must be included in a project's cost-benefit analysis, which should actually have bearing on the projects decision-making process

2) Sound Implementation

- E. Construction contractors should employ environmentally friendly construction methods which minimize a projects impact on natural capital

3) Effective Monitoring

- F. Effective monitoring needs to ensure that the above point is followed
- G. In addition to third-party monitors governments must train and equip regulators to monitor the projects within their borders

4) Accountability

- H. In order to promote good governance regarding infrastructure decentralization and capacity building at all levels of government must be implemented
- I. To counter corruption transparency and competition must be introduced into the contract bidding process, while private sector participation is also essential
- J. Finally, infrastructure regulators themselves must be regulated through transparency and independence from the political process

These measures if combined into a consistent approach will go a long ways towards providing positive and measurable change in making modern infrastructure development a more sustainable endeavor. In formulating these recommendations it has been my hope that they

would be applicable not just to road construction in Lao PDR, but rather to any type of infrastructure development in any location. In order to accomplish this goal however, the challenge remains to determine how to operationalize and apply these points in practice and under diverse circumstances. The future sustainability of human development will be determined by our successes.