

**Think Like a Mountain:
Toward a Perspective for Interdisciplinary Ecosystem Research in Myanmar**

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“What God has created, let no man put asunder.”

This might refer to our relationship with the environment just as well as to that between a man and a woman. Our relationship with the environment requires careful attention for we must take care of it if we want it to reciprocate. Around the globe today, that relationship is being challenged.

We are here in a wondrous and wonderful part of the world. This sketch of Asia’s major rivers flowing down from the Tibetan plateau illustrates just how central our location is, both geographically and in terms of the hundreds of millions of human lives and other biological phenomena impacted by the flow of these waters.

The river of concern for me today is the Salween, in some locations called the Nu Jiang or the Thanlwin. Lately my focus has been on Myanmar (Burma) and its current struggles to emerge from a long period of difficult political and economic conditions. Many, dare I say all of us, desire to help this great country to achieve higher levels of prosperity and sustainable well-being. One focal point for many has become the Salween.

The Salween flows directly through and is of great importance to several ethnic minority states: Shan, Kayah, Kayin, and Mon in which are also found sizable concentrations of Wa and Pa O people, among others. As such, the Salween is, potentially at least, a source of either unity or tension and conflict.

One major hydropower project has China, Myanmar, and Thailand collaboration. China’s Three Gorges Company, Myanmar’s IGE Company, and Thailand’s EGA International are sponsoring and working together to bring it into existence. The stated aim is to generate 7,000 mega watts with an annual output of 34.7 billion KWH. As stated, the intent is to produce power primarily for domestic consumption with surplus being sold internationally, presumably to China and Thailand.

Project documents have stressed that “the companies will discuss with the local population the environmental and social impact of the project and that the project plan will be made public for discussion.” There is reason to believe that, based on past history, this may be a mere precursory action and interaction designed to nip critical reactions and comments in the bud.

I have proposed to Dr. Chayan and others several ideas concerning prospects for an international conglomeration of university-based scholars collaborating on studies centered on the Salween.

Obviously, a “go ahead” from the government of Myanmar would be needed and I believe possible as the country has already demonstrated its interest in and intentions toward the use of the river and its related resources in a projected sustainable fashion. Currently, much attention seems to be centered on the Mongton Township dam project.

I think we could provide assistance that would complement and complete the Myanmar Government’s intention. I think there are several sources of funding support for such an initiative. We would need to craft a coherent proposal. This would require identifying and lining up participants prior to submitting a proposal.

The value of studies involving discipline/issue-based teams followed by follow on studies by interdisciplinary teams building on the initial work could be immense. Just as an example, some of the themes and disciplines for studies might be as I list here. The list suggests a range of types of initiatives that could lead to important insights into the governance of this important river and its surrounding lands, the human population, and biodiversity.

Phase 1: Discipline-based teams

1. **Epidemiologists** looking at disease vectors impacted by the Salween.
 2. **Geographers** surveying the Salween from Tibet to the ocean.
 3. **Demographers** documenting population clusters and small towns along the Salween and the human-ecological connection to the resources provided by the river.
 4. **Natural Resource Economists** assessing economic flows and the Salween as a source of livelihoods
 5. **Sociologists** investigating local communities as social networks cooperating in managing their relationship to the river.
 6. **Hydrologists** measuring fluctuations in stream flow affected by dams and irrigation demands.
 7. **Zoologists and Botanists** assessing the structure and biota of the Salween and its environment with special emphasis on wildlife connections to the river.
 8. **Climatologists** calculating the nature of climate change impacted by the sequestering of the water of the Salween behind dams.
 9. **Aqua-culturists** studying the river as a source of fish-based protein and the impact of dams on fish populations.
 10. **Anthropologists/Ethnographers** studying the patterns of indigenous knowledge-based behaviors, practices, values, and beliefs of the different ethnic groups arrayed along the Salween.
 11. **Political and environmental scientists** studying governance of land use change and governance of forest resource use and its impact on climate change.
 12. **Others** might range from land use planning to water governance to freshwater security and so on.
- This list is simply meant to be suggestive. There are probably many other and/or different possible focal points in such a range of studies.

Phase 2: Interdisciplinary teams

The results of the work of the discipline-based teams in phase 1 and follow on discussions of all concerned, first in face-to-face interactions then by online exchanges, would lead to the identification, design, and conduct of integrated, interdisciplinary field research. The purpose of such studies would be to seek answers to the questions raised by the awareness of possible/probable interactive effects of various components highlighted by the phase 1 studies. The exact make-up of the interdisciplinary teams and the specific focus of their work would be based on the analysis of the collective results of phase 1.

Discipline-based research often yields results which, the interpretation of and value of, are sometimes constrained by the narrow focus of the researchers. Such research, while necessary to uncover and highlight various issues and underlying factors, often leaves us dangling in our efforts to comprehend the larger and more complex reality surrounding the issues. More definitive studies of this larger and complex reality require the collective efforts of representatives from the sciences relevant to aspects or dimensions of the reality. After achieving a certain level of understanding of the components of this reality, it becomes possible to assemble as teams the scientists possessing an appropriate range of required expertise.

Interdisciplinary team research projects have existed since the beginning of the social and health sciences, but developing an effective interdisciplinary team project involves a healthy respect for the multiple disciplines involved and an ability to manage people from diverse backgrounds. This includes creating a productive team environment and managing each step of the research-to-results process to ensure that both the specific expertise of each participating discipline is honored and everyone works together towards a common goal.

While it is easy to state such a perspective, it is difficult to achieve primarily due to the discipline-based rewards and incentive system which motivate many individual scientists and drives their research work. I think it is safe to say that the majority of scientists never involve themselves in interdisciplinary team efforts focused on complex problems. Why should they? The perceived rationale and motivation to do so is just not there.

Assuming success in drawing together a desired array of discipline-based scientists to collaborate in a research undertaking, it would be necessary to stage interactive seminars to provide real-life examples and tactics for effective collaboration and management procedures to achieve the best results. Choosing the correct team members and developing a shared language and a productive team culture, and overcoming publication issues specific to interdisciplinary team projects have to be treated.

An interdisciplinary project draws on methods and understandings from several disciplines, but creates something new that is greater than the sum of its parts. Creating a truly interdisciplinary project involves

fostering an interdisciplinary environment where everyone contributes equally toward common goals. Where there is a will, there is a way.

Toward a working philosophy for ecosystem research and development in Myanmar

But why would we want to undertake such work? In Wisconsin, we are proud to claim as a native son the preeminent ecologist Aldo Leopold who thrived and worked in the previous century. His untiring work has fostered current day thinking and behavior of many scholars and scientists concerned about conservation and the sustainability of our globe's natural resources. His approach views a natural system from a human perspective, inside-out, as open systems embedded in larger systems that change much more slowly. Therefore, to build a viable concept of sustainability, an individual or group must involve themselves in thinking like a mountain or a watershed, in order to adequately protect the natural resources in an ecosystem concept that support our socio-economic desires. Thinking like a watershed links human actions and their impacts to more than one natural dynamic unfolding on different scales in time and space. Decisions today that are evaluated in the short-term calculus of economics can lead to long-term impacts that change the system subsequent generations will encounter. This form of thinking reconstitutes the world we experience as a complex world, where impacts of our actions unfold on different scales and dimensions and where humans are seen as capable of more and more "violence" in the management of the natural system.

We can't stop thinking like a consumer however when we learn to think like a watershed. Thinking like a watershed incorporates our local and day-to-day concerns, but it adds also the awesome responsibility that comes with the recognition that our decisions today can have impacts on longer and larger scales. If we want to manage for human goals from within a dynamic, open-ended ecosystem, we cannot look at only one level of impacts, at only one component to which our managerial actions will be directed. Making such determinations requires both good judgement and good science that can be assisted by thinking like a watershed, like an ecosystem, like a mountain. To build a viable concept of sustainability, we must involve ourselves in thinking like a watershed or like a mountain to adequately protect the natural resources in an ecosystem concept that support our socio-economic desires.

As I think about the challenges facing those with concerns for the Salween and the human population whose lives are so intricately intertwined with this great river, I have a sense of urgency in the need to marshal the necessary intellectual resources to enable the studies which can empower appropriate action and thinking at all levels. Are we up to the task?