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“Ostrom Center for the Advanced Study in Natural Resource Governance”
(OCeAN@AIT.ASIA)

Natural Resources Management Field of Study

School of Environment, Resources and Development (SERD)

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Context

Elinor Ostrom received the 2009 Nobel Prize in Economic Sciences for her research proving how the commons are vital to the world based on the rhetoric of the “tragedy of the commons”, which focused on private property and centralization as ways to protect finite resources from depletion. She turned over the “conventional wisdom” by validating by what means local resources could be effectively managed by commons without ruling by central government or privatization. Ostrom identified 8 design principles for how common-pool resources could be governed sustainably and equitably in a community. Similarly, the Institutional Analysis and Development (IAD) framework summarizes the ways that institutions function and adjust over time. The framework observes institutions to be created by humans whereby individual choices made render consequences of particular choices made. This is one of a “multi-level conceptual map” that may offer to study a specific hierarchical section of interactions made in a system. The part of the framework includes action arena identification, formed through interactions between actors and actor situations.

As a political scientist, Ostrom has been a source of inspiration for many researchers and social scientists, including the faculty at the School of Environment, Resources and Development of the Asian Institute of Technology (AIT) in Thailand. Colleagues at AIT have recently signed a book contract with Elsevier for four volumes with chapters based on Ostrom’s theories and approaches. She changed the method of inquiry among economists that earlier ignited with a hypothesis and then put on to statistical tests; she initiated with a concrete reality as a replacement for. Following in her footsteps, these book series are based on ground information that is then analysed rather than formulating an assumption of reality. The speculative issues linked to the management of environment and natural resources are presented in the series to bring about understanding of the mechanisms in managing natural resource base in the regions and how different stakeholders interact with each other in managing the natural resources. The detail of the book series is as follows:

	Book Title	Editors
Series Title:	“Redefining Diversity and Dynamism of Natural Resource Management in Asia”	Ganesh Shivakoti, Shubhechha Sharma and Raza Ullah
Volume 1	Sustainable Natural Resource Management in Dynamic Asia	Ganesh Shivakoti, Ujjwal Pradhan and Helmi

Volume 2	Upland Natural Resources and Social Ecological Systems in Northern Vietnam	Mai Van Thanh, Tran Duc Vien and Stephen J. Leisz
Volume 3	Natural Resource Dynamics and Social Ecological Systems in Central Vietnam: Development, Resource Changes and Conservation Issues	Tran Nam Thang, Ngo Tri Dung, David Hulse, Shubhechhha Sharma and Ganesh Shivakoti
Volume 4	Reciprocal Relationships between Governance of Natural Resources and Social Ecological Systems' Dynamics in West Sumatra, Indonesia	Rudi Febriamansyah, Yonariza and Raza Ullah

These books are made possible with due collaborations among diverse stakeholders and intellectual bodies. The intellectual support provided by Elinor Ostrom and other colleagues through the Ostrom Workshop in Political Theory and Policy Analysis (Ostrom Workshop) at Indiana University over the last two and half decades has provided solid foundation for planning and implementation of such an academic endeavour. AIT colleagues have been actively collaborating with the Ostrom Workshop since the creation of the Nepal Irrigation Institutions and Systems (NIIS) database (Ostrom, Benjamin and Shivakoti, 1992; Shivakoti and Ostrom, 2002; Lam, 1998; Ostrom, Lam, Pradhan and Shivakoti, 2011). The International Forestry Resources and Institutions (IFRI) network carried out research to support policy makers and practitioners design evidence-based natural resource policies based on the IAD framework at the Ostrom Workshop, which was further mainstreamed by the School of Natural Resources and Environment at the University of Michigan. Recent publications by Sage on the policy outcomes of decentralization on forest and rural communities in South and Southeast Asia based on doctoral dissertation research of students from the region using IFRI research methods have an imprint of Ostrom's IAD framework (Shivakoti and Ostrom, 2008; Webb and Shivakoti, 2008). Our intellectual partnership with the colleagues from the Center for the Study of Behavior, Institutions and Environment (CBIE) at Arizona State University has further solidified understanding of Ostrom's economics through a grant supported by NSF (Shivakoti and Bastakoti, 2006; Bastakoti and Shivakoti, 2011; Kamran and Shivakoti, 2013). In order to support this technology transfer, the Ford Foundation (Vietnam, India and Indonesia country offices) provided grants for capacity building and concerted knowledge-sharing mechanism in integrated natural resources management (INRM) at Vietnam's University of Agriculture (HUA) and Hue University of Agriculture and Forestry (HUAF); Indonesia's Andalas University in W. Sumatra and Asian Institute of Technology (AIT) for collaboration intended to assist curriculum development and generate body of knowledge for mutual learning environment in the form of masters and PhD fellowships. In addition, we have been collaborating with colleagues from the laboratory of Global Forest Environmental Studies of the University of Tokyo on issues related to design guidelines and collaborative governance (Inoue and Shivakoti, 2015). Recently, AIT has received support from the Toyota Foundation in examining local preparedness of the community in adapting to the REDD+ mechanism in the context of climate change. The upcoming four volumes have several chapters supported through this grant. Earlier, the MacArthur Foundation explored ways to support natural resource-dependent communities through long-term monitoring on biodiversity, domesticating valuable plant species and embarking on long training programs to aid communities in managing natural resources.

Background

Throughout Asia, degradation of natural resources is happening at a higher rate and is a primary environmental concern. Recent tragedies associated with climate change have clear footprints on the deforestation, land degradation and water course changing. A significant proportion of land use conversion is undertaken through rural activities, where resource degradation and deforestation are often the result of overexploitation by users who make resource-use decisions based on a complex matrix of options and potential outcomes.

Asia is among one of the most dynamic regions of the world. The fundamentality of political and socioeconomic settings has been altered following the financial and economic turmoil in the region. The economic growth, infrastructure development and industrialization are swelling impacts on natural resources in the form of resource degradation and social turmoil at many stances (World Bank, 2011). The basic natural resource bases are decreasing at the cost to produce economic output. In a way, a part of these challenges have been offset by enhancing natural resource use efficiency and technology extension. However, the net end results are prominent in terms of increasing resource depletion and social unrest. Furthermore, climate change impacts have demanded further the need for adaptation and mitigation measures to consequences of erratic precipitation and temperature fluctuations, salt intrusions and sea level increases, which ultimately affects the livelihood of natural resource dependent communities.

Governments, NGOs, and academics have been searching for appropriate policy recommendations that will mitigate the trend of natural resource degradation. By promoting effective policy and building the capacity of key stakeholders, it is envisioned that sustainable development can be promoted at both the top-down and bottom-up perspectives. Capacity building in the field of natural resource management and poverty alleviation is then an urgent need and several policy alternatives have been suggested (Inoue and Shivakoti, 2015; Inoue and Isozaki, 2003; Webb and Shivakoti, 2008).

The importance of informed policy guidance in the sustainable governance and management of common-pool resources (CPRs) in general have been recognized due to conflicting and competing demand and uses of these resources in the changing economic context in Asia (Inoue and Shivakoti, 2015; Balooni and Inoue, 2007; Nath, Inoue and Chakma, 2005; Pulhin, Inoue and Enters, 2007; Shivakoti and Ostrom, 2008; Viswanathan and Shivakoti, 2008). This is because these resources are unique in its respect, management of these resources are public in partnership with state and local community but the benefits are at the individual and private level in day-to-day basis. In the larger virtual environmental context, however, the benefits and costs have global implications. There are several modes of governance and management arrangement of these resources in partnership of private-public range. Several issues related to governance and management need to be addressed that can directly feed in the ongoing policy efforts of decentralization and poverty reduction measures in Asia.

While there has been a good amount of study and management prescriptions for natural either from national development point of view or from the community perspectives at local level but there are hardly any study that point towards the interrelationship among other resources

and CPRs as mediated by institutional arrangement and what will have the implications for management of CPR in an integrated manner vis-a-vis poverty reduction. In our previous research, we have identified several anomalies and tried to explain these in terms of better management regimes for CPR of several Asian countries (Dorji, Webb and Shivakoti, 2006; Gautam, Shivakoti and Webb, 2004; Kitjewachakul, Shivakoti and Webb, 2004; Mahdi, Shivakoti and Schmidt-Vogt, 2009; Shivakoti et al., 1997; Webb and Dung, 2008; Yonariza and Shivakoti, 2008). But there are still several issues, like failure to comprehend and conceptualized social and ecological systems as couple systems that adapt, self-organize and is co-evolutionary in dynamics. The information obtained through these works tends to be fragmented and scattered making decision making incomplete as they do not reflect the entire scenario. These shared vision among diverse complexities that natural resource management has to offer needs to be fed in the governance and management arrangements for management guidelines for integrated management of natural resources and CPR as a whole.

Specifically, the following issues are of interest to seek answers to:

- a. How can economic growth be prudent together with holding natural resources intact?
- b. How has decentralization of natural management rights affected the resource conditions, and how have concerns of gender and social inclusion been incorporated in the process?
- c. How can the sustainability of efforts to improve the productive capacity of CPR systems be assessed in the context of current debate on the effects of climate change and initiative and implementation of new programs such as PES and REDD+?
- d. How can multiple methods of information gathering and analysis (by multiple methods, we mean both triangulation of methods to get the true picture as well as the combination of socioeconomic methods with the biological science through a combination of micro-macro analytic methods such as remotely sensed data over time verified by ground-truthing and additional GPS sample point verification process) on CPRs be integrated in the national natural resource policy guidelines and the results used by local managers and users of CPRs, government agencies and scholars?
- e. What are the effective polycentric policy approaches for governance and management of CPRs that are environmentally sustainable and gender balanced?

Objectives of OCeAN:

At each level of society, there are stakeholders both at the public and private levels that are of primary concern for efforts of management enhancement and policy arrangements. Current theoretical research indicates that whether it is deforestation, resource degradation, and conservation of biodiversity hotspots or climate change adaptation. The real struggles of these local-level actors that directly affect CPR and additionally hundreds of people who are dependent upon them for living. This series is about their decisions on managing natural resources during situation of mishap. Basically, we tend to explore outcomes after decentralization and economic reforms respectively. Post situation after rights were handed over to the people, the Center scrutinizes the variations and relations between communities, local administration and the CPR. It's built more on autonomous mechanism and use of natural resources together with day-to-day undertakings of local practice and routinely trying to add up to the prospects made available to them. The two-digit economic growth is every country's desire. But in the context of Asia, much of the economic growth is through natural

resource overuse. In a way, economic growth affects the environment while, with focus on environment economic advancement cannot be made; construction of highways and hydro-powers can be some of the examples, and conversion of subsistence farming areas to rubber and oil palm plantation is another example exclusive to Asia.

Speculative research also indicates that the above-mentioned levels are sometimes highly interactive and overlapping. For that reason, it is justifiable to undertake coordinated activities that lead to information capture and capacity-building at the national, district and local levels. Given that the impacts of earlier intervention efforts (various policies in general and decentralization in particular) for effective outcomes have been limited due to unwillingness of higher administrative officials to give up their authority, lack of trust and confidence of officials in the ability of local communities in managing CPR, local elites capture of decentralization benefits in their favour, and; higher occurrences of conflicts among multiple stakeholders at local level (IGES, 2007).

Natural resource management particular to wildlife ecology monitoring and climate change adaptation merging traditional knowledge with science is likely to pursue better management results. Society, their daily practices and ways of life are changing and constantly adapting. Information from these rehearses although not precise and qualitative but is valued for the reason that they are built on explanations over time, adds in larger samples, are reasonably priced, calls local practitioner's participation as researchers, and every now and then fits in multivariate solutions for ecological change. Few ideologies proposed by traditional knowledge renders options for better natural resource management consistent to uncertain thinking; to which science can backstop through number of scientific based research on spatial and temporal scales. On the contrary, scientific studies are least trusted by locals but amalgamation of both may aid to powerful input to policies directed towards nature conservation and livelihood improvements.

Ethnic minorities living in the vicinity of giant infrastructures have unequal access and control over resources among diverse other groups. Subsistence agriculture, fishery, swiddening, and few off-farm options are livelihood supports for these individuals. But unfortunately, these livelihood options are areas mostly affected by changing climatic scenarios and thus least equipped to cope; further aggravated by failure to diversify livelihood options. Though science foretells climate change to be mitigated through tree sequestrations; but, these require technical, social and political dimensions possible through decentralizing powers to local communities to prevent issues of deforestation and degradation while simultaneously adapting to change. The role of traditional institutions hence becomes crucial to revive social learning, risk sharing and diversifying reduction options, formulating adaptive plans and their effective implementation and fostering stress tolerance and capacity building against climate change effects.

Though the role of institutions in managing common-pool resources has been explained in many literatures, it is also worth noting that institutions also play a significant role in climate change adaptation. A study conducted by Gabunda and Barker (1995) and Nyangena (2004) observed that household affiliation in social networks were highly correlated with embracing soil erosion retaining technologies. Likewise, Jagger and Pender (2006) assumed that individuals involved in natural resource management focused programs were likely to

implement land management expertise regardless of their direct involvement in particular organization, as spill-over paraphernalia. Fris Hansen (2008) partially verifies the fact as relationship among participation in farmer's institution and technology adoption of smart agriculture to be positively correlated. Dorward *et al.* (2009) correspondingly note that institutions are vital in shaping the capability of local agrarians to respond to challenges and opportunities. This has shown institutions to be a primary attribute in fostering individuals and households to diversify livelihoods in a way to adapt to changing climate. In context to REDD+, there requires a system that can transcend from national boundaries, interconnect different governance levels and allows both traditional and modern policy actors to cooperate. Such system emphasizes integration of both formal and informal rules making mechanism and actor linkages in every governance stages that steer towards adapting and mitigating to local and global environmental change (Corbera and Schroeder, 2011).

Based on the above-mentioned discussion, we intend to bring these issues of S and SE Asia forward for global audiences and policymakers the following activities through the OCeAN Center:

- (a) Organize a book retreat to plan on documenting more field-based, location-specific natural resource issues from rural Asia;
- (b) Host senior scholars to start drafting advanced theoretical volumes on the issues related to governance and management of natural resources;
- (c) Organize and support 1-2 weeks training at AIT for drafting high-impact factor environmental and natural resources related journals and / or plan editing special issues of thee journals for faculty and advanced doctoral students by inviting similar research center scholars from major global universities;
- (d) Organize Policy dialogue on “Improving Governance and management of Natural Resources through collaboration among the high level decision-makers; and
- (e) Organize grant writing workshops for submitting competitive proposals to the major funding organizations.

Governance of OCeAN:

The Center is being housed within the Natural Resources Management (NRM) Field of Study, School of Environment, Resources and Development at AIT. For the management of the Center, the NRM Coordinator facilitates the administrative matters, and Professor Ganesh Shivakoti is responsible for the organization of research and academic retreats together with other colleagues within AIT and beyond.

The Center is an autonomous intellectual Center governed by an Advisory Board. The Advisory Board is comprised of:

Worsak Kanok-Nukulchai, President, AIT – Chair
Vice President, AIT – Member
Dean / School of Environment, Resources and Development, AIT – Member

David Hulse, Ford Representative, Jakarta, Indonesia – Member
Ruth Meinzen-Dick, Senior Research Fellow, International Food Policy Research Institute – Member
Makoto Inoue, The University of Tokyo – Member
Tom Evans, The Ostrom Workshop in Political Theory and Policy Analysis, Indiana University -- Member,
Marco Janssen, Center for the Study of Behavior, Institutions and Environment, Arizona State University -- Member
Tint L. Thaug, Director, The Center for People and Forests (RECOFTC), Bangkok, Thailand -- Member
Professor Ganesh Shivakoti, Founder Director, OCeAN
Natural Resources Management Coordinator at AIT, Member Secretary

Business Plan and Immediate Schedule:

For immediate endowment fund, Elsevier has agreed to transfer to AIT/OCeAN account as an initial resource for the four books contracted and an additional book royalty will also be deposited based on the annual book sales receipt. AIT has established Fund 50 account without expiration date. Currently, Professor Shivakoti as PI has five projects funded by the Ford Foundation Indonesia and Vietnam, the National Science Foundation and the Rhino Research Group to be completed by December 2016. We expect an additional amount of residual funds unexpended to be transferred to the endowment fund account. In addition, the Center Director and Coordinator, together with colleagues interested in issues of governance and management of natural resources, will undertake efforts to raise funds and write proposals for related activities to replenish the endowment fund.

As an inaugural activity, the Center will organize a retreat for senior doctoral students and academic faculty and scientists of NRM in the region planning for a special issue of academic journal and series of edited volumes during the second week of June 2016.

The Center Audience:

The Center is primarily intended for academic professionals and the university and colleges faculty, students, and practitioners in the fields of CPR governance and management; (I)NGOs and national environment policy personnel and international donor communities interested in decentralized resource governance and institutions issues in the context of global climate change.

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