

Symposium Proceedings

Analyzing livelihoods, capabilities and shocks in a marine protected area (MPA) of Catanduanes Island, Luzon

Ma. Luz A. Floralde, Jimmy T. Masagca*, Meda B. Mercado

Catanduanes State University, Virac 4800, Catanduanes, Philippines

Abstract

The social representations perspective provides a framework for understanding the gender and equity issues in the coastal marine areas are thinly discussed in many parts of the Philippines. This paper presents insights about these issues using the matrix and tools for analysis of the World Fish Center and guided by social representations theory of social psychology. It is extremely significant to note that our findings show that landlessness or lack of adequate space for farming, extreme weather disturbances in the island province and the government's inability to address the real needs of the coastal dwellers are the main reasons why poverty is unsolved in the areas under study. Extant literatures reveal that land access as asset is an important predicate of alleviating poverty. However, we observed that asset poverty, though present, does not represent the main dimension of poverty as expressed by the local men, women, youth and other residents living near rivers/streams and coastal communities studied within the 3 km radius of protected and non-protected marine spaces of the island. Gender analysis using dimensions of Livelihoods, roles and relations LRR; and (2) Assets, capabilities and shocks (ACS) were used in the present inquiry that serve as inputs for water governance and sustainability research on benchmarking, forecasting, and innovation (technological, political and societal). Several insights were gathered on productive roles; natural and physical assets; health and financial assets; disaster or typhoon shocks; community participation and politics. Some informants associate household poverty with the inability to own a house or a parcel of land. It is highly likely that several conflicts on equity and gender exist in the areas studied and are known to have evolved from the divergent perceptions of the local people, the local leaders and the management authorities for environment, natural resources, fisheries and aquatic resources. Likewise, women involvement in both inland and coastal areas is still considered a topic that is still under-addressed despite the fact that women participation can lead to better governance of freshwaters and marine coastal or ocean waters. The paper ends with the discussion on improving women's participation in decision-making roles and recommends to further focus on women's contribution to fisheries activities, the specific problems they face and their needs within the dimensions of livelihoods intended for inland waters and coastal marine spaces.

Key words: GAD, poverty, equity, Catanduanes, marine spaces, rivers, coastal areas, mangroves

INTRODUCTION

The Philippines is an archipelago of 7,107 islands covering 300,000 square kilometers (30 million hectares) – 298,170 square km² of land and 1,830 km² of water. The coastal areas in the North Philippine Sea have economically and ecologically important coastal marine areas and

freshwater systems (FWS) having connections with the mangrove areas. These resources contribute to the over-all richness within the identified major center of the world's marine biodiversity (see Carpenter & Springer 2004). PEW Fellow and former SEAFDEC Scientist Dr. Jurgenne Primavera in her essay on *Mangroves, Fishponds and the Quest for Sustainability* (2005) highlighted a land dispute in

* E-mail: jtibarmasagca@gmail.com

Panay Island (Central Visayas).

Several stories depicting landlessness, equity and gender effects are seemingly kept frozen and are said to be waiting for attention. This limitation becomes critical in this study with particular reference to the communities that depend on inland waters (the freshwater systems) and coastal areas of selected municipalities of the island province of Catanduanes, in the Bicol region in Luzon, Philippines found in the “typhoon highway.” Papers on gender, equity and poverty, within the issues in inland, marine coastal or, mangrove communities are thinly discussed in academic and governmental forums in the Philippines, thus efforts on these issues using political ecology as frames of analysis is much needed now. This is extremely significant in consideration of an increasing attention on the links between biodiversity conservation and poverty in many countries of the world. Success stories in community-based approaches for inland and marine coastal fisheries and aquaculture have gained much attention worldwide, but the aforementioned on gender and equity or “fairness” and women participation are said to be wanting. And despite such successes, the real intent of alleviating rural poverty in marine coastal communities is not happening. Workers like Llanto & Ballesteros (2003) have attested that land access is an important predicate of alleviating poverty. But a paper on aquaculture and poverty in the Philippines, Irz et al (2007) reported that asset poverty, though present, does not represent the main dimension of poverty in three fishing communities and they noted that only a “...few respondents associated household poverty with the inability to own a house, land or durable goods. “Observations in Catanduanes note the conflict-ridden land tenure, common property resource and Trans boundary issues in rivers and coastal marine areas may have evolved from the divergent perceptions of ecological relations and divergent perceptions of land relations and management authorities in both protected and non-protected areas. Gender and equity in water areas (inland and coastal marine) can be achieved between men and women residents. What involvement is needed among women and men to ensure positive gender effects on land conflicts and attainment of success in conservation and utilization? Part of this discourse on gender in inland fisheries and coastal fisheries is Henry Bernstein’s agrarian political economy and the pro-poor land policies and land governance materials of Borras & Franco (2010) which served as guide. Likewise, several materials on political ecology (Piers Blaikie’s papers from 1980s to the year 2000, Bryant 1992, Batterbury et al. 1997, Peet and Watts 1996, Belsky 2000, Forsyth 2008) were scanned in preparing paper. On political ecology with equity in community forest, Shrestha’s work in Nepal (2005) and human ecology work by Berkes (1989) are important references. Bradley Walters (wrote on several papers on mangroves and community-based

initiatives that started from his Bais Bay, Philippines research for a doctoral dissertation), who criticized the apparent lack of coherence of political ecology (Vayda & Walters 1999) noted that property rights regimes in mangroves are complex, conflict-ridden and under continuous negotiation between similar and dissimilar resource users. Research for a doctoral dissertation), who criticized the apparent lack of coherence of political ecology (Vayda & Walters 1999) noted that property rights regimes in mangroves are complex, conflict-ridden and under continuous negotiation between similar and dissimilar resource users. Research for a doctoral dissertation), who criticized the apparent lack of coherence of political ecology (Vayda & Walters 1999) noted that property rights regimes in mangroves are complex, conflict-ridden and under continuous negotiation between similar and dissimilar resource users. Studies on gender intend to reduce gender disparities in access to and control of different resources such as the natural resources in inland and coastal areas and on decision-making. The present study looks on the views on the norms, attitudes, beliefs and practices relating to gender roles, by strengthening the role of women in decision-making, and by emphasizing increasing access, ownership and control over productive resources for women. Two dimensions on (1) Livelihoods, roles and relations; and (2) Assets, capabilities and shocks were used in the present inquiry that serve as inputs for water governance and sustainability research on benchmarking, forecasting, and innovation (technological, political and societal).

Studies on gender intend to reduce gender disparities in access to and control of different resources such as the natural resources in inland and coastal areas and on decision-making. The present study looks on the views on the norms, attitudes, beliefs and practices relating to gender roles, by strengthening the role of women in decision-making, and by emphasizing increasing access, ownership and control over productive resources for women. Two dimensions on (1) Livelihoods, roles and relations; and (2) Assets, capabilities and shocks were used in the present inquiry that serves as inputs for water governance and sustainability research on benchmarking, forecasting, and innovation (technological, political and societal).

World Bank’s poverty benchmark of US\$1 to US\$2 per capita per day will allow us to acknowledge that were more people living near inland waters and coastal areas under study are living in extreme economic poverty. This benchmark falls between PhP 52 to PhP105 in the Philippines. However, this threshold if used does not tell about what it is like to be poor in this part of the world. The pronounced deprivation of the local people under study is used here as a meaning of poverty which is related to the lack of material income or consumption, low level of Education and health, lack of opportunity to be heard”

(World Bank, 2002).

Gender is a means of understanding how society operates through the study of the negotiation of power roles and influence between men and women. Understanding how gender impacts on inland and coastal fisheries are managed, for example, means of looking at how men and women interact with the resources being addressed. In addition, the presence of marine protected areas or reserves are also important in the discussion of coastal areas. This study therefore attempted to integrate these systems following the concept of Ridge to Reefs (protecting watersheds and coasts). This is an approach based on the “reef to ridge concept” that is similar to the ecosystem-based approach was applied to coastal rehabilitation and management in Thailand (and followed here in the present study). This approach utilizes the bottom-up process, which is stakeholder-driven, building upon community-based organizations (CBOs). Formulation of the framework of action through participatory processes involving various stakeholders at multiple levels, ranging from village to national levels, proved to be successful.

Like other island provinces in the Philippines, the socio-nature relations of Catanduanes can be affected by the globalizing society and the varied regional and national issues on how natural resources (i.e. inland fisheries and marine coastal areas) are being managed and used sustainably. Various sectors are directly and indirectly affected by these relations that involve the different sectors dependent on the rivers and coastal marine resources, particularly, in protected and non-protected marine spaces (e.g. mangrove swamps, sea grass beds, coralline areas). The third wave of globalization (Martell, 2007) that involves profound transformative change becomes a central driving force behind changes reshaping the world including this island province in the Southern Philippine Sea. No clear distinctions are observed in the transformative wave between the domestic and the international in economic, social and political processes. An analytical approach is called for that involves new patterns of stratification across and within societies. The importance of diversity, agency, and local context, while incorporating the significance of broader “structural forces” (Grossman 1998) will be important in an approach that will include various aspects in shaping Catanduanes island’s transformation. The political ecology serves as an inspiration that can help to reveal more complex picture of the reality of globalization today and gender analysis. Through this framework, attention can be brought to the appropriate understanding. The framework is immune to criticisms (see Vayda & Walters, 1999) and this is still very useful and vibrant as what Gender and Development (GAD) would like to include in its broad framework for analyzing gender issues in fisheries, aquaculture and marine conservation. Emerging from this type of localized political

ecology study in Catanduanes, link the human-environment relations at the local level to the broader forces of political economy and political sociology. In referring to Blaikie and Brookfield’s *Land Degradation and Society* (1987), the concept of ‘political ecology’ combined with ecological concerns having broad adherence to political economy, particularly on Henry Bernstein’s agrarian political economy. This paper encompasses the other key questions underscoring political dynamics between women, farmers/fishermen and coastal dwellers, local groups and social classes in the areas under consideration, tackling two research dimensions on gender analysis: (1) Livelihoods, roles and relations; and (2) Assets, capabilities and shocks. This will serve as inputs for water governance and sustainability research on benchmarking, forecasting, and innovation (technological, political and societal).

METHODOLOGY

This study focuses on the local municipalities of Panganiban, Viga, Bagamanoc, Virac and San Andres in the island province of Catanduanes where ethnographic fieldwork visited. The interviews was conducted semi-structured interviews with a total of 100 composed of 50 women and 50 men who are from each representative fishing barangays (see Table 1) ranging from 15 minutes to 2.5 hours to multiple visits with some families, fishing households and those who were men along the river banks and marine coasts of the said municipalities. In addition, the research team also attended PTA and school meetings, barangay council meetings, public assemblies, organizational meetings, *fiestas* and other life cycle activities like baptisms, wedding ceremonies, birthdays, anniversaries, etc.). All of these were conducted in the language or dialect most comfortable for the respondents. Responses were written and some were recorded instead in the mangrove areas of San Andres, Catanduanes. The residents living near rivers/streams and coastal communities were interviewed within the 3 km radius of protected and non-protected inland and marine coastal waters of the island.

The paper used the lens of political ecology with the specific approaches on (1) post structuralist, deconstructivist that considered questions on the predominant discourses of environmental change and politics within. Gender analysis using dimensions of (1) Livelihoods, roles and relations (LRR); and (2) Assets, capabilities and shocks (ACS) were used in the present inquiry that serve as inputs for water governance and sustainability research on benchmarking, forecasting, and innovation (technological, political and societal). The concept of poverty in a barangay which is located near a community-based mangrove area in San Andres, Catanduanes; (2) analysis of concepts of the local

people (from the barangays of Agojo, Tominawog, Comagaycay, Catagbakan and Dimatera) and in relation to the nature found in the coastal areas of San Andres, particularly the analysis of gender as a constructed category; and (3) rights-based protocol dealing with the questions of accessibility in utilizing the mangrove resources, equity and aspects on environmental justice. The poststructuralist lens includes the analysis of the production of social reality. Escobar (1996) claims that it includes the analysis of representations as social facts inseparable from what is commonly thought of as “material reality” and also pertains to the view that that language is not a reflection of reality (Stott 1999). Hence, discourses about the coastal environment and the rest of the coastal resources in the barangays under study can occupy the popular role in poststructuralist view in political ecology.

Participants and Sampling

Participants of the study are local fisher folks, women groups, women leaders, LGUs, and other members of the local coastal dwellers community. Clearly, the study uses a qualitative approach by hiding the actual identities of the participants. To actually conduct our study in numerous communities, we would normally be required to identify the people concerned. However, it is assumed that the other villages will not allow the researcher's to conduct this study, so that identities are not being considered here. Recording was not also allowed and some had negative thoughts on this mode of gathering data, thus notes were scribbled and upon arrival in the host family and the campus dormitory in Panganiban, the responses were encoded. The study employed a snowball sampling technique (Blase & Blase, 2002; Masagca & Londerio, 2008) that requires others to recommend participants who they believe can have experience and are knowledgeable about poverty, gender and equity in the barangays. The researchers exerted their efforts by telephoning or texting the barangay captains from different areas for referrals in order to help select the respondents. Initially, the purpose of the study was explained to those whom contacted and discussed with them about participation in the fieldwork. Several authors (Glaser, 1978; Taylor & Bogdan, 1998) claim that snowball sampling techniques are useful in grounded theory research that attempts to draw samples from a variety of settings. It is known that this technique maximizes variation in the database to generate a larger number of categories that describe the phenomenon under study.

Instruments of the Study and Data Gathering Procedure

After identifying the participants, local people were approached personally in their residence and in the weekend afternoon hours near the plazas, village halls, and small grocery stores (*sari-sari stores*) or Saturday and Sunday wine drinking sessions either in fiestas or other leisurely activities or among members of the informal social group known as *Sociedad* or “Sosyodad” (from Sarmiento 2009). The researchers contact them through the help of the Municipal Mayor those who had expressed interest to participate in this qualitative research. Researchers explained during the field work on the addressed questions and concerns, discuss the backgrounds and generally the chance to get to know the main participants, the elderly, the leaders, women leaders, etc. Documentary analysis was based on the household demographic and socioeconomic Information derived from the offices of the municipal mayors, barangay captains and local organizations. Lively discussions were done to find out perceptions on key problems and causes of poverty; (3) type of livelihoods (4) aspects on life cycle needs (birthdays, weddings, baptismal); (5) material quality of life; (6) access to land; (7) health and wellness of the local people; (8) fishing activities; (9) involvement of the local people in the community-based marine sanctuaries; and (10) views about the impacts of government programs and projects on natural resource conservation to their lives.

Interviews and Focused Group Discussion (FGDs)

Unstructured interview was used to gather information from the fisher folks as regard to the livelihood activities engaged in by men and women, their patterns of mobility, and life cycle patterns (Adanza, et. al., 2009). Questions asked to the fisher folks were based on the tools and matrix for the study, however, translated in the dialect. Lively information giving also occurred during the courtesy call of the research team to the barangay captain. Two other focused group discussions (FGDs) with the barangay council and the officers of the Agojo Community Oriented Mangrove Development Organization (ACOMDO) and now the Agojo Mangrove Planters Association, Incorporated (AMPAI).

RESULTS AND DISCUSSION

Data gathered follow the sequence of the tool and matrix used in the study. Poverty is unsolved in the areas under study due to landlessness, weather disturbances, and government's inability to address the real needs of the inland and coastal dwellers, specifically government's inability to redistribute

lands for the rural people. In some cases, as what local coastal dwellers in Catanduanes island asserted poverty remained to be serious and continue to be lurking in many households.

Landlessness or the lack of adequate space for fishing, farming and dwelling unit is not an important thing to consider in their lives. It was explained that the local people do not need much of the land for agricultural production considering the lack of capital, cheaper prices of agricultural products but higher prices of agricultural inputs.

Weather disturbances disappoint the local people. If they decide to go into agricultural production then typhoon comes, they are not happy with the usual losses. Opportunities are lost with the unpredictable weather conditions. Costs in making/reconstructing houses are very high. With the popular value of resiliency, disaster preparedness became embedded in their daily lives, despite that no insurances for crops are being given. Government's disaster programs seem not to work well, but with the most recent program on Disaster Risk Reduction Management (DRRM) loss of lives and were drastically reduced.

Government's inability to address the real needs of the local people. Local people claim that the government seemingly fail to consider the real needs of the local people due to the following: Most government officials have too much politicking and the politics of patronage is serious, with little opportunities for people who have not previously supported the elective officials; (2) Community Based skills training seem not to work well with the inappropriate and mismatch of skills training given to the local people; and 3) Livelihood projects introduced are not properly implemented and monitored coupled with lack of product markets.

Additionally despite the implementation of the Agrarian Reform Program, the government seems not to comprehensively redistribute lands to the rural coastal people. It appears that asset poverty does not represent the main dimension of poverty within the 3 km radius of marine coastal zone, river, estuary or mangrove community. Fewer number of respondents associate household poverty with: 1) inability to own a house (cemented house with GI sheets as roofing). (2) Small land ownership (considering that house dwelling units are small with fewer lands for other purposes). Local people feel that they are not considered poor with the regular assistance they get from their children or relatives from Manila or other cities and abroad. Remittances continue to flow in their household especially during weather disturbances.

Education or schooling as one of the predicates of poverty was not considered an important factor by the respondents. Respondents claim that most of the children or the members of the households have received college education with the very cheap cost of education provided by the local state college charging at least 100 pesos (2 US

dollars) per unit or equivalent to a 1 hour lecture.

Along *gender aspect*, the following were uncovered: 1) conflicts in the community are due to the divergent perceptions of the local people and the leaders at the time when the marine protected area was established many years ago; 2) There were inequalities of opportunities provided by the government for male and female. This means that more opportunities are given to males than females; 3) With the presence of a people's organization, the ACOMDO (Agojo Community Oriented Mangrove Development Organization), membership is extended to the household members through which gender bias is eliminated; 3) Fisherfolks have shown resiliency in facing natural shocks. Fishing is the main source of livelihood in the place. When weather condition would not allow them to fish, they engage in other livelihood activities, such as boat making and farming; 4) the families in the place are the typical stereotypes. The father is the decision maker; the wife takes of the household chores and the children. There is division of labor. The number of family members is quite large, composed of 6 or more children. To sustain family needs, women and children get shells "sahang" (bivalves) and "boto-boto" (sea cucumber) for sale while some are for family consumption. When propagule are to be harvested, the man cuts the propagule; the wife arranges them in a sack; 5) The place was also a recipient of various government programs, however, political influence hinder their implementation. The barangay captain commented even that a certain government program to alleviate/reduce poverty among the marginalized sector of the barangay is a cause of marital trouble/domestic violence – an additional problem in their peace and order problem; 6) as to governance, the place is headed by a strong woman leader. Her experience as SK groomed her to be a firm leader; 7) Religion may have a bearing on their attitude. Sunday may be is for their religious activity and family or rest day. These may be the reasons in the absence of any woman or children residents walking along the beach carrying "sagad and agahid" (basket and scoop nets) to get marine products for consumption and for sale.

CONCLUSION AND RECOMMENDATION

It can be concluded that the 1) presence of a people's organization eliminates gender bias; 2) residents are resilient to natural shocks; 3) families in the place are the typical stereotypes; 4) the place was also a recipient of various government programs, however, political influence hinder their implementation. A certain government program to alleviate/reduce poverty among the marginalized sector of the barangay is a cause of marital trouble/domestic violence-an additional peace and order problem; 5) religion has a bearing on the attitude of the fisherfolks; Sunday seems to be a time

for family or rest day; and 6) lack of livelihood opportunities and inappropriate government intervention. The following are recommended: 1) conduct livelihood activities/trainings on: a) fish processing, b) shell-craft making, c) nursery management (e.g. propagule propagation), and 2) putting up stalls to sell t-shirts and other souvenir items for eco-tourism purposes; 3) charging fees from tourists, researchers, and students on educational tours/trips; 4) local government officials must undergo values orientation workshop (VOW); 5) local residents should be given gender awareness/sensitivity trainings; and 6) conduct fieldwork/research any day except Sunday.

REFERENCES

- Adanza Estela G., Bermudo, Pedrito Jose V., Rasonable, Marietta B. 2009. *Methods of Research: A Paper*. Manila, Philippines, Rex Bookstore, Inc.
- Agrawal A, Yadama G, Andrade R, Bhattacharya A. 2006. Decentralization and environmental Conservation: Gender effects from participation in joint forest management. CAPRI Working Paper No 53, CAPRI, Washington, DC.
- Batterbury S. 2001. Landscapes of diversity: A local political ecology of livelihood Diversification in South-Western Niger. *Ecumen* 8(4): 437-464.
- Batterbury S, Forsyth T, Thomson K. 1997. Environmental transformation in developing Countries: Hybrid research and democratic policy. *The Royal Geographical Society* 126-131.
- Bennett E. 2005. Gender, fisheries and development. *Marine Policy* 29(5): 451-459.
- Berkes F. 1989. Cooperation from the Perspectives of Human Ecology. In: *Common Property. Resources: Ecology and Community-based Sustainable Development* (Ed. Berkes, F.), Belhaven Press, London, pp.70-88.
- Bettelheim B. 1977. *The uses of enchantment: the meaning and importance of fairy tales*. New York: Vintage Books.
- Blaikie P. (Ed.).1985. *The political economy of soil erosion in developing countries*. Longman, London and New York.
- Blaikie P. 2000. Development, post-, anti-, and populists: A critical review. *Environment and Planning A* 32:1033-1050.
- Blaikie P, Brookfield H. 1987. *Land Degradation and Society*, Methuen, London and New York.
- Blaikie P, Cameron J, Seddon D. 2002. Understanding 20 years of change in West-Central Nepal: Continuity and change in lives and ideas. *World Development* 30(7): 1255-1270.
- Blaikie P.1994. Political ecology in the 1990s: An evolving view of nature and society. In: *A Paper presented at the Workshop on Political Ecology, 15-17 April, Centre for Advanced Study of International Development (CASID), USA*.
- Blase J, Blase J.2002. The dark side of leadership: teacher perspectives of principal mistreatment. *Educational Administration Quarterly* 38(5): 671-727.
- Blumer H. 1969. *Symbolic interactionism. Perspectives and methods*. Englewood Cliffs, NJ: Prentice Hall.
- Bryant R. 1992. Political ecology: An emerging research agendas in Third -World studies. *Political Geography* 11 (1): 12-36.
- Bogdan RC, Biklen SK. 1982. *Qualitative research for education: An introduction to theory and methods*. (2nd edition). Boston: Allyn & Bacon.
- Borras SM, Franco JC.2010. Contemporary discourses and contestations around pro-poor land policies and land governance. *Journal of Agrarian Change* 10(1): 1-32.
- Bruner J.S.1990. *Acts of meaning*. Cambridge, MA: Harvard University Press.
- Carpenter & Springer. 2004. *The center of the center of marine shore fish biodiversity: the Philippine Islands*. *Environmental Biology* 72 (4).
- Dangol S. 2005. Participation in decision-making in Nepal. In C. J. P. Colfer (ed) *The Equitable Forest: Diversity, Community and Resource Management, Resources for the Future/CIFOR*, Washington, DC, 54-7.
- Gilmour D, Malla Y, Nurse M. 2004. *Linkages between community forestry and poverty*. Bangkok: RECOFTC.
- Grossman L. (1998). *The Political Ecology of Bananas: Contract Farming, Peasant, and Agrarian Change in the Eastern Caribbean*, University of North Carolina Press, Chapel Hill.
- Hobley M.2005. Where in the world is there pro-poor forest policy and tenure reform? Draft Report for Comment Prepared for the World Bank.
- Irz X, Stevenson JR, Arnold T, Villarante P, Morissens. 2007. The equity and poverty impacts of aquaculture: insights from the Philippines. *Development Policy Review* 25(4): 495-516.
- Javier, R. E. 2004. *Kuwentuhan: A study on the methodological properties of pakikipagkwentuhan*. The URCO Digest of De La Salle University Manila, 5(3).
- Larson AM, Barry D, Dahal GR, Colfer CJP.2010. *Forests for People: Community Rights and Forest Tenure Reform*. Earthscan Library. (In paperback).
- Llanto GM, Ballesteros MM. 2003. Land issues in poverty reduction strategies and the development agenda: Philippines. *Philippine Institute for Development Studies, Discussion Paper No. 2003-03*.
- Martell L. 2007. The third wave in globalization theory. *International Studies Review* 9(2): 173-196.
- McEwan H, Egan K. 1995. *Narrative in teaching, learning and research*. New York: Teachers College Press.
- Mello R. 2001. *The power of storytelling: How oral narratives*

Analyzing livelihoods, capabilities and shocks in a marine protected area (MPA) of Catanduanes Island, Luzon

- influence children's relationships in classrooms. *International Journal of Education and the Arts* 2(1): 1-14.
- Peet R, Watts M. 1993. Introduction: development theory and environment in an Age of Market Triumphalism. *Economic Geography* 69(3): 227-253.
- Sarmiento RF. 2009. The "Sosyodad" of Catanduanes. Doctoral Dissertation, University of the Philippines.
- Shrestha KK. 2005. Collective action and equity in Nepalese community forestry. Doctoral Dissertation, University of Sydney.
- Vayda AP, Walters BB. 1999. against political ecology. *Human Ecology* 1(27): 169-179.
- Wiliam-de Vries D, Sutarti N. 2006. Gender equity: revealing the reality for the women of Jambi. *CIFOR Governance Brief*, 29. CIFOR, Bogor, Indonesia. 2011. Good practices in governance, food security and habitat management. *Tropical Coasts*.