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Wading past assumptions: Gender dimensions of climate change adaptation in coastal communities of the Philippines

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1. Introduction

This study explores the gender dimensions of climate change adaptation in select Filipino coastal municipalities located within Palawan, Occidental Mindoro, and Batangas provinces. The goal is to better understand gender dimensions of risk perception, climate change awareness, training, and the potential impact of climate change on resource use, in order to improve climate change adaptation process and policy. This study contributes to the growing understanding of the unique role of women in climate change adaptation, with specific implications for coastal, fisheries-dependent communities. The objectives of this study are to: 1) Identify and challenge assumptions about women and climate change 2) Examine men's and women's beliefs, values, perceptions of risks, resource dependency, and awareness associated with climate change, and 3) Evaluate the implications of gendered relationships with fisheries and the environment on climate change adaptation. The outcome presents opportunities for improved integration of both men and women in effective climate change planning and adaptation.

2. Climate change vulnerability in the Philippines

It is widely accepted that climate change will have a broad range of impacts on social and ecological systems across the world, with particular impact on tropical coastal ecosystems and the fisheries-dependent communities that they support (Food and Agriculture Organization of the United Nations (FAO, 2009). Coral reefs and other coastal habitats are sensitive to climate stressors such as warming seas, coral bleaching, and ocean acidification (Daw et al., 2009; Burke et al., 2011), building on environmental degradation caused by overfishing and destructive fishing (SCTR, 2011). Climate variations that worsen ecological conditions will increase pressure on fisheries and have significant consequences for the communities and economies that depend on them (Daw et al., 2009; Cinner et al., 2012). Furthermore, fisheries production and coastal communities are at risk from flooding and increasingly frequent and intense storms caused by climate change (Mamauag et al., 2013).

The Philippines is an archipelagic country located within the Coral Triangle, a region known for its exceptionally high marine biodiversity. Approximately 50 million residents depend on diverse marine and coastal ecosystems for food security, income and livelihoods (SCTR, 2011). However, coastal mangrove and coral reef ecosystems are significantly degraded (Primavera and Esteban, 2008; SCTR, 2011). Social and ecological systems in the Philippines are considered “very vulnerable” to climate change as a result of factors including overfishing, high dependence on fisheries, high rates of poverty within the fishery sector, population growth, and poor governance (Mamauag et al., 2013).

3. Role of women in fisheries

Women have distinct roles and responsibilities within small-scale fishing villages (Harper et al., 2013). However, the scale of women's contribution to both fisheries and household well-being in fishing communities is often underreported and undervalued (Harper et al., 2013; WorldFish Center, 2010; Weeratunge et al., 2010). The contributions of women continue to be overlooked in part because of the narrow definition of “fishing” as catching fish at sea (Harper et al., 2017). In the Coral Triangle Region and elsewhere, there is a gendered division of labor where many women glean for invertebrates, fruit, and seaweed in near-shore areas (Eisma-Osorio et al., 2012). In Central Philippines, Kleiber et al. (2014) found that women accounted for at least 42% of all fishers, but that fisheries management and policy focuses mainly on the types of fishing activities that are traditionally male dominated.

Women are also integral to pre- and post-harvest activities such as mending nets, processing, buying and selling fish at market (WorldFish Center, 2010). Where men are involved in offshore fishing, women are also left responsible for managing most land-based activities including those usually handled by men such as marketing and distribution of production, preparation of land and cultivating crops, where practiced, and managing household finances. These added land-based responsibilities can give women higher status in fishing villages, compared to non-fishing communities (Pollnac, 1988). Despite this, the power of women within the fishing sector is weakened by limited access to

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certain resources. Generalized conceptions of women within fisheries create barriers to effective policy, which must give women access to resources and address all facets of marginalization along the entire fisheries value chain (Lentisco and Lee, 2015).

4. Women and climate change

Recent analyses have paid significant attention to the gender dimensions of climate change vulnerability and adaptation. Vulnerability to climate change is a function of exposure to risk, sensitivity to change, and adaptive capacity, which vary considerably within and between countries and populations (Cinner et al., 2012; Adger et al., 2005; Daw et al., 2009). Vulnerability of social and ecological systems can be reduced through climate change adaptation: the way in which societies, organizations and individuals adjust behavior according to assessment and anticipation of future climatic conditions (Adger et al., 2005).

The discourse about women and climate change evolves out of a broader debate around eco-feminist theory and the relationship between women and the environment. Eco-feminism is founded on the connection between the exploitation of nature and the oppression of women (or other marginalized groups) under prevailing systems. As a contested product of this relationship, women are seen as natural and essential stewards of the environment (Jumawan-Dadang, 2015). By extension, the discussion about women and climate change focuses primarily on the distinctive vulnerability of women to climate change impacts, the roles and responsibilities of women in climate change response, and how women contribute to climate change policy and adaptation planning (Masika, 2002).

In general, data show that climate impacts in developing countries may affect men and women differently (Goh, 2012). The degree to which gender influences vulnerability, risk exposure and capacity to respond is an ongoing discussion (Masika, 2002; Goh, 2012). In developing countries, pre-existing inequalities tend to provide women with less access to income, assets, resources, technology, training and decision-making power than men (WorldFish Center, 2010; Masika, 2002). These disparities can potentially limit adaptive capacity and expose women to greater risk, making them more vulnerable to the impacts of climate change (FAO, 2009). More specifically, some research suggests that women in developing countries are disproportionately poor, more highly exposed to risks from natural disaster (Neumayer and Plümper, 2007), and more sensitive to environmental degradation due to a more direct dependence on the natural resources (Brown, 2011; Nelson et al., 2002). Specifically, in coastal Philippines, gendered divisions of labor may shape women's relationship to nature (Jumawan-Dadang, 2015), and therefore climate impacts. However, claims about women's vulnerability to climate change tend to generalize the complex relationships that define women, poverty and the environment (Demetriades and Esplen, 2008).

Some research also suggests that adaptive response to climate change may be influenced by gender differences. Environmental risk perception, a motivating factor in climate change response, may be influenced by gender through socio-economic and demographic variables, experiences, values and beliefs (O'Connor et al., 1999; Brody et al., 2008; Tam and McDaniels, 2013; Price et al., 2014), resource dependency (Combest-Friedman et al., 2012), and climate change awareness (Lata and Nunn, 2011). Adaptive response is also dictated in part by environmental attitudes. Qualities that are more commonly attributed to women such as “closeness to nature” and “environmental virtuousness” tend to prescribe roles for women in climate change response that add responsibility without reaping rewards (Masika, 2002; Arora-Jonsson, 2011; Nelson et al., 2002).

In discussions of climate change vulnerability and adaptation, it is increasingly recognized that these prevalent generalizations are problematic because they lack empirical support and fail to recognize local context (Demetriades and Esplen, 2008; Weeratunge et al., 2010; Arora-Jonsson, 2011). Generalizations that treat all women as a homogenous group, especially in terms of poverty and the environment, can be useless or detrimental to effective and equitable climate change adaptation (Demetriades and Esplen, 2008; Arora-Jonsson, 2011; Goh, 2012). Recent studies call for empirical, site-specific, gender disaggregated data that challenge these assumptions and contribute to a more intersectional understanding of how communities are impacted by, cope with, and perceive risk associated with climate change—information that can contribute to gender equitable climate change adaptation process and policy (Djoudi et al., 2016; Goh, 2012; WorldFish Center, 2010; Masika, 2002).

“Gender Mainstreaming” can be defined as incorporating gender considerations at all levels of government or organization operations including the development process, policy making, budgetary planning, and evaluation (Bennett, 2005). In the Philippines, The Climate Change Act of 2009 (RA9729) and the National Climate Change Action Plan (2011) both call for gender mainstreaming through gender-sensitive and responsive adaptation and planning (Climate Change Commission, 2011). Efforts to mainstream gender into policy, however, also risk simplifying a need that is too complex to be addressed only by disaggregating data, incorporating language into policy documents, and inviting women to participate (Cornwall, 2003).

4.1. The Coral Triangle Initiative

The Coral Triangle Initiative (CTI) is a formal agreement formed in 2009 between the Philippines, Indonesia, Malaysia, Solomon Islands, Papua New Guinea and Timor Leste (referred to as the CT6) to pursue improved regional marine governance and conservation in the Coral Triangle Region. The CTI is supported in part by the US Government through the US CTI Support Program (USCTI), which committed more than $40 million to assist the CT6 from 2009-2013. This support is channeled as technical and financial assistance through the Coral Triangle Support Partnership (CTSP). In the Philippines, CTSP is headed by World Wildlife Fund and Conservation International, which work with local government units, municipalities, and national government offices to achieve CTI goals. One of the main priorities was to achieve climate change adaptation measures. The USCTI was also involved in local climate change vulnerability assessment and adaptation planning in the Philippines. Gender mainstreaming is included within each goal, with a specific mention that climate change adaptation planning teams should represent a balance of gender and social groups in the community, and stakeholder outreach should include both men and women (USCTI, 2013).

5. Research questions

This study examines how gender influences climate change risk perception, awareness, and adaptation in sites across three provinces of the Philippines. As a country within the Coral Triangle Region, with populations that are highly dependent on diverse marine resources and vulnerable to climate change impacts, the findings can be particularly informative. It is also an area of interest based on involvement in the Coral Triangle Initiative, offering some perspective on the climate change adaptation portion of CTI goals. Building off of evolving literature concerning women, the environment, climate change, the gendered roles of women in coastal Filipino communities, and the existence of gender mainstreaming in climate change adaptation documents in the Philippines, this study uses USCTI LP survey data to address the following questions about the coastal villages sampled: (1) Do women feel more connected to nature (in this case, the marine environment) and demonstrate pro-environmental values? (2) Do women feel more at risk to threats associated with climate change? (3) Are women more likely to report degradation of coastal resources and changes in weather patterns? (4) Are women more likely to participate in climate change awareness training and public outreach activities? (5) Are women more aware of climate change and adaptation plans? (6)