

Theory versus Practice in Payment for Ecosystem Services in Totonicapán, Guatemala

by

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I. Introduction

Payment for Ecosystem Services (PES), as originally defined by Wunder in 2005, is “a voluntary transaction for a well-defined ecological service, with at least one buyer, at least one provider, and based on the condition that the buyer(s) only pay if the provider(s) continue to deliver the defined ecosystem service over time.” PES is a model used worldwide in developed and developing countries alike to mitigate and/or minimize detrimental impacts of rapid land-use change that threaten vital ecological resources such as water, soil, and timber (MA, 2005; Derissen & Latacz-Lohmann, 2013). The scale at which these programs are implemented varies widely, from large state-level programs as seen in Costa Rica and Ecuador to smaller more localized initiatives, as seen in Nicaragua and Bolivia (Grima et al, 2015).

Proponents of PES underscore this approach’s ability to address a wide-breadth of challenges related to effective conservation: market failures through valuation and pricing of natural resources, rural economic development, and long-term behavior change that supports conservation-centric land management practices (Uchida et al. 2005; UNDP, 2015). There is growing concern however among conservation professionals and the academic community alike that is forcing greater analysis of the drawbacks to PES schemes, among these are the costly nature of valuation and implementation of such schemes, risk of increased economic disparity for rural poor, unintended weakening of existing cultural and spiritual-based conservation ethic, and exacerbation of inequality around land rights and access to resources (Lansing, 2014; Pirard, 2011; Van Hecken, G., Bastiaensen, J., & Windey, C., 2015).

As traditional PES schemes continue to be scrutinized, more and more research questions are surfacing regarding the variegated ways PES initiatives are contested and reconfigured by local actors to better reflect local realities and values. By understanding the ways in which PES is or has been shaped in real-time by participants, professionals working in the realms of conservation, environmental and social policy, forestry, climate change and academia can begin to build a body of evidence that may alter and potentially improve PES schemes in-practice. However, one main challenge to this goal is that there is very little documented evidence, especially in the form of case studies.

The goal is to begin documenting the necessary evidence to further explore these questions in the context of particular PES-schemes in-practice in Totonicapán, Guatemala. I used this site as a case study to examine how local political, social, environmental and cultural dynamics lead to the contestation and subsequent reshaping of PES programs by local actors there. A secondary focus is to understand how local conservation practices in this site diverge and converge with the traditional definition of PES.

I am specifically interested in:

1. What approaches have local actors in Totonicapán used to both contest and reshape PES-schemes at the national, regional, and local level over the past 20 years?
2. What political, social, environmental and cultural factors influenced the community's decision to contest and reshape PES and why?
3. In what ways has PES been reshaped and what do various actor groups perceive as the pros and cons of these changes?

My ultimate objectives are to identify: 1. Key cultural, social, environmental and political factors that contributed to the Totonicapán community's contestation and alteration of PES; 2. Principle ways in which these contested and altered schemes diverge and converge with traditional PES theory; and 3. Share knowledge and tools gained from the study with EcoLogic Development Fund and similar organizations whose missions it is to support communities in designing truly sustainable and inclusive conservation programs.

The theory of Payment for Ecosystem Service (PES) emerged in the 1970's as a concept to galvanize positive behavior change toward conservation of natural resources via improved land management practices (Gomez-Baggethon, et. al., 2009). To realize this goal, PES schemes create a compensatory environment where landowners are paid for ecological services generated on their property. These payments, in turn, incentive broader long-term adoption of environmentally driven land management practices. Overtime PES has evolved from simply being a tool used by conservationists to elicit behavior change, to a "market-based instrument" employed globally by multinational lending institutions, policy makers, non-profits, and private sector actors alike (Gomez-Baggethon, et. al., 2009). Contemporary PES schemes are defined as a market-based approach to environmental conservation involving a monetary exchange, or transaction, between the buyers and sellers of ecosystem related services (Kaplowitz, 2012). The premise behind these mechanisms is that the beneficiaries (buyers) of ecological services compensate the providers (sellers). A number of ecosystem services have been incorporated into market schemes, among them are: watershed services, biodiversity, and carbon sequestration (de Groot, 2002). Much of the traditional literature on PES focuses on its success as an "economic

instrument” and its achievements as a “neoliberal project” that values ecosystems as cash commodities (Fletcher & Büscher, 2017).

Yet traditional PES schemes have come under much criticism. Emerging critiques of traditional PES illustrate the fundamental disparities between PES in theory and in practice, as such findings point to vastly reconfigured and contested iterations of PES schemes at play all over the world (Pirard, 2012; Vatn, 2010). Other critiques document the potential for PES to result in negative environmental and socio-economic outcomes (Lansing 2014; McAfee and Shapiro, 2010). Additional themes that have emerged highlight traditional PES’ failure to recognize critical local cultural, political, spiritual and historical contexts and the exclusion of non-monetary values local communities prescribe to nature (Van Hecken et. al. 2015; Rosa, Kandel, & Dimas, 2003; Hanh et al, 2015). Overall, these themes underscore an over-arching critique that PES schemes operate inefficiently or fail when local contexts and beliefs are overlooked.

In terms of theory versus practice, a number of studies have shown that in reality PES-schemes rarely reflect the traditional definition as described by Wunder and others. For instance, Muradian et al. 2010 illustrates that efficiency and equity outcomes for PES are highly variable and dependent upon a range of factors, such as stakeholders’ positions within local power dynamics, which at times can favor large landholders over small landholders. Vatn (2009) points out that though PES schemes are intended to be market-based solutions that replace government actions aimed at correcting environmental issues, yet in many cases public institutions continue to play a pivotal role either as intermediary or buyer. Similarly, Pirard (2011) also found in many instances that public institutions remain involved in PES schemes, either by way of regulation or

by serving as an intermediary, which represents a deviation from the original concept and its intended results of conservation driven by market principles not government intervention.

Studies are emerging that also document cases where PES is reconfigured and contested, resulting in innovative alternative approaches from the traditional neoclassical model. Among these are alternative PES models that, for instance, integrate values beyond the traditional currency, markets, and subsidies exchanged among beneficiaries and providers of ecosystem services (Santangeli et al, 2002). One such study, Shapiro-Garza (2013), emphasizes the exchange of critical “non-monetary” values that PES often overlook, such as labor related to stewardship, social organization, spiritual fulfillment, regional political relationships and embeddedness of positive conservation behaviors. Hendrickson and Corbera (2014) documented participation in PES in rural Mexico and found participants were motivated by the political benefits of participation, as well as financial gain. While another, von Hedemann and Osborne (2016), argue that non-monetary based forms of PES, or incentives, offer greater opportunity to providing resources to poor, rural land owners and traditional indigenous-led conservation efforts in Guatemala.

A growing body of research is emerging that questions PES-schemes promise of improved poverty and conservation outcomes. One study that investigated impacts of a PES scheme geared toward rural poverty alleviation in Mexico and found that conservation efforts were weakened as a trade-off for economic development (McAfee and Shapiro, 2010). Lansing 2014 documented the implementation of a PES-scheme in Costa Rica that, despite government efforts, resulted in greater benefit to large landholders over small landholders. This study also

identified barriers to access that stemmed from historical inequality around property rights that perpetuated the marginalization of rural poor.

Another line of debate concerns broadening the traditional definition of PES to appropriately account for non-monetary valuation and other alternative characteristics. The widely used traditional definition of PES defines “non-monetary” valuations as actions taken to improve economic performance of an ecosystem service to increase the overall rate of monetary compensation (Hanh et al, 2015). Examples of this include, land use planning and conservation zoning to increase water recharge levels that are then sold. A popular alternative definition of “non-monetary” valuation was put forth in 2003 by the non-profit organization PRISMA. In its document titled *Compensation for Environmental Services and Rural Communities*, PRISMA defines non-monetary values as being external to monetary influence, such as spiritual, cultural, and social connectedness to nature and conservation and the value that arise, for instance, from the ability of a community to successfully organize around conservation efforts (Rosa, Kandel, & Dimas, 2003). In a similar vein, Christie et al. 2012 argued that the role of non-monetary values from indirect ecological benefits, like improved nutrient cycling or soil formation that often cannot be explained in tradition PES valuation frameworks, hold great importance to LDCs communities yet are often over looked. To this end, the authors argue that research on valuation in LDCs must be participative, focus on cultural contexts and values, and offer a voice to marginalized community members. Only then will accurate biodiversity valuations emerge.

Additional discourse is concerned with whether such programs lead to poverty alleviation (Wunder, 2008), environmental conservation (Rico García-Amado, L., Ruiz Pérez, M., & Barrasa García, S., 2013), and equitable outcomes at the community-level (McDermott, M.,

Mahanty, S., & Schreckenberg, K., 2013). In an effort to understand the role of equity and whether equitable outcomes are achieved via PES-schemes, McDermott, Mahanty, and Schreckenberg (2013) created a multivariate framework to help analyze the impact of biodiversity valuation on local-scale equity. The researchers argue that PES-schemes must look beyond distribution of payments to be truly equitable. Two additional realms of equity are detailed in the paper, procedural equity and contextual disposition equity. In conclusion, the authors suggest that all three realms of equity must be evaluated equally. Doing so will allow policy experts and conservation professionals to set realistic and equitable parameters on PES-schemes that lead to greater social equity, appropriate geo-spatial framing that is inclusive, and captures the causes of inequity (McDermott, M., Mahanty, S., & Schreckenberg, K., 2013).

A more recent publication suggests that current PES models often lack sensitivity to local realities such as cultural dynamics, power relations, and social diversity (Van Hecken, G., Bastiaensen, J., & Windey, C., 2015). Van Hecken et. al. (2015) argues that most PES schemes fails to account for cultural, social and political dynamics in local contexts and as a result there is little understanding on how these dynamics impact PES schemes at large. The researchers outline what they find to be the three main challenges to contemporary PES-related research: “(1) to assume that institutions can be designed to ‘fit’ specific human-nature problems; (2) to oversimplify cultural and social diversity through the apolitical concept of ‘social capital’; and (3) to conceptualize human agency, collective action, and institutional change either through overly-rational or overly-structuralist models,” (Van Hecken et al. pg. 1). With these challenges in mind, the study seeks to push PES research in a new direction – one that offers greater flexibility, honors historical and cultural contexts, includes social and political dynamics, is adaptive and inclusive with the hope that PES schemes can be designed more purposefully. In

its conclusion, the research team suggests that there is great need for multi-disciplinary research to understand how local power dynamics shape and reshape PES schemes in an effort to improve both the implementation and impacts on local communities of such policy instruments. Without such research, the study argues, will lead to the continued promotion of economic-centric PES frameworks that “involve major simplifications and omissions that make them highly inadequate representations of the environment-society relationship,” (Lele, 2013).

Totonicapán province is located in the western highlands of Guatemala where the majority of the population in Maya K’iche’. The area includes 52,000 acres of old growth forest and a prominent watershed representing the headwaters of 5 major rivers that all feed into the country’s second largest lake and agricultural production zones, Lago de Atitlan (USAID, 2011). The communal forest is managed through a complex, ancestral system that has been passed down in K’iche culture for hundreds of years. A rotation of leadership among 48 Cantons, or communities, is collectively responsible for maintaining forest and watershed conservation. This structure is reinforced by the cultural practice of Kas’qol, or mandatory voluntary service that all community members must complete (Shapiro, 2014).



Figure 1 – Map of Totonicapán, Guatemala. (Compare Infobase Pvt Ltd 2004-2005).

In 1996, a local non-profit organization, Ulew Chew Ja, partnered with an American-based non-profit to implement PES for watershed services that was ultimately contested and rejected by the community. Currently, some community members participate in one of two national PES schemes for forest services, PINFOR and PINPEP, and a portion of the traditionally governed communal forest is enrolled in PINPEP by the municipal government office. There are many questions surrounding the future of the community’s involvement with PES as PINFOR was replaced with Probosques in 2017.

Totonicapán is a city located in the department or province of Totonicapán. The K’iche had a well-established complex society prior to Spanish exploration and colonization of the area. Much K’iche history is documented in Popol Vuh, the Mayan creation story. The Spanish conquest, which started around 1524, by the Spanish explorer, Pedro de Alvarado (Powers, 1986). Following Alvarado’s subjugation of the K’iche dominated western highlands, which include Totonicapán, the Spanish imposed a new system of social and political structure that

divided the indigenous communities and redistributed their lands and resources to the colonizing power (MacLeod, 2014). Much of the contemporary struggle for access and rights to ancient ancestral lands dates to the era of colonization. In more recent history, the K'iche of Totonicapán have been able to reestablish, to a degree, their traditional ways of life – including traditional systems of governance, worship, and social organization.

Furthermore, the civil war that erupted in Guatemala in the 1970's and 1980's greatly impacted the K'iche in Totonicapán (USAID, 2011). Many fled the violence and human rights abuses relocating to the eastern shores of Guatemala or crossing borders to Belize, Mexico, Honduras, El Salvador and many to the United States. For those who remained, the scars of this era and those from colonization have naturally shaped the current social and political dynamic of the region. Upon the signing of the Peace Agreement in 1998 and the installation of a democratic system of government, the K'iche community of Totonicapán has sought broader recognition of its traditional approach to self-governance and cultural autonomy (Trudeau, 1993).

The K'iche is one of the largest of the 22 indigenous Maya populations in Guatemala. Much of K'iche cultural identity is expressed in the Mayan creation story, the Popol Vuh. A spiritual connectedness with nature and social obligation to protect and nurture natural resources for posterity sake is at the center of K'iche culture. A communal approach is taken with both governance and social structure, as seen in the approach the community takes to tend its forest, watershed, and elect leaders from each village in the department of Totonicapán to an ancestral governing board. One aspect of K'iche culture that is both unique and of particular interest to this study is the concept of kas'qol. In the K'iche language, kas'qol means “suffering” yet in this context it refers to the obligatory one year of service that each member of the community must fulfill. Some members fulfill their kas'qol caring for the communal forest and watershed that

supports the physical and economic health of the Totonicapán community. Others fulfill their service as locally elected leader to the tribal board that oversees local affairs, known as the 48 Cantons, which will be discussed in the following section.

The political dynamic in Totonicapán is incredibly complex – it consists of a municipal government and a traditional governing body made up of elected leaders who represent the 90% of the departments population who speak and identify as Maya K'iche (Ekern, S., 2011). The traditional leaders are known as *alcaldes*, or mayors, and represent the 48 communities or cantons that comprise Totonicapán. Leaders serve on a year-long, rotational basis, and are elected through voter participation within each of the 48 communities. Historically, the 48 Cantons were lead by a body of “elders” but the positions are now filled by a broader demographic in terms of age, and to a lesser degree gender, and through a much more democratic process than in prior decades. The Association of the 48 Cantons manages the communal forest and watershed in Totonicapán. They also manage repairs to the infrastructure that delivers drinking water to roughly 100,000 residents. One aspect of this research is to analyze the tension between the traditional K'iche mayoral institution and the newer municipal government structure in regards to land tenure, autonomous decision making, legal recognition and access to resources.

As mentioned, 90% of the population in Totonicapán is Maya K'iche while the remaining 10% is mostly Latino, or of European or mixed decent. Holding the majority, in addition to the hundreds of years of ancestral ties the K'iche have to the land in this region, makes the K'iche a major stakeholder in this region. The Association of the 48 Cantons is also a significant stakeholder because it both represents the K'iche population and oversees management of the ancestral communal forest and watershed reviewed in this study. Other significant stakeholders in the region, in respects to forest and watershed management, include all users of the resources

– buyers and purveyors of wood, users of water resources, famers and grazers utilizing clear forest patches, etc.

The municipal government that was established after the democratization of Guatemala is also a major stakeholder. Currently the federal government provides resources and materials to the municipal government for forest and watershed management, as the municipal government is the legal title holder for the land. Sadly, this has caused tension between the municipal government office, which was established after Guatemala became a democracy in 1998, and the ancestral governing body, the Association of the 48 Cantones (Trudeau, 1993). INAB, or the National Forest Institute of Guatemala, is another stakeholder. The institution administers forest incentive programs relevant to the Totonicapán case – namely PINPEP, PINFOR, and the most recent program, ProBosque. There are several other agencies and/or non-profits working on conservation issues in the area, these are: 1. a national conservation-focused non-profit Defensores de la Naturaleza; 2. a government institution, CONAP or the National Council for Protected Areas; and 3. An international humanitarian aid organization, Care International. The local organization known as Ulew Chew Ja, a local non-profit organization affiliated with the Association of the 48 Cantons, is also relevant to this case as it is the entity that attempted the implementation of PES in 1996 in partnership with the American non-profit, Ecologic Development Fund. The scheme was contested by the traditional leadership and never implemented, which will be discussed at a later point in this document. The last of the stakeholders identified and included in this study are staff who work with EcoLogic Development Fund, a US-based international non-profit with a regional office in Quetzaltenango, Guatemala, and conservation projects in Totonicapán, other parts of Guatemala as well as Honduras, Mexico and Belize. EcoLogic Development Fund has more than 20 years of

experience working in Totonicapán in forest and watershed conservation. The EcoLogic staff who works in Totonicapán are from the region, or of K'iche decent, and highly embedded in the work of the 48 Cantons and the K'iche community at large.

Guatemala is beautiful, volcanic and mountainous country with a rich culture and history. Once the heart of the Maya civilization, Guatemala was colonized by Spanish colonialists in 1518. The impacts of Spanish colonization are still seen today in the patterns of land tenure and concentration of wealth and resources that leave, to a great extent, the indigenous population marginalized (Ritchie, 2013). These economic and social inequities underscored the precipitation of a civil war that raged for 36 years, from 1960 to 1996 (USAID, 2017). Since the signing of the Peace Accord in 1996, efforts have been made to recognize indigenous rights and equitable access to resource yet there is much progress that needs to be made.

Though communal lands and forests are recognized by Guatemalan law, many conservation efforts reinforce the power of municipal governments over traditional governing bodies (USAID, 2017; Samayoa, 2018). Water rights are particularly challenging in the fight for equity and access since Guatemala lacks a water law and therefore appropriate regulations protecting community rights (Vasquez, W.F., 2015). Several new and innovative approaches have emerged in an effort to address some of these issues. PINPEP, PINFOR, and ProBosque are national forest incentive schemes that aim to slow deforestation and, to some extent, provide income to rural poor (von Hedemann & Osborne, 2016). These incentive programs have had varied success and have evolved greatly since first being implemented. PES-schemes have also been implemented in this context, with similar goals. The following section reviews the emergence and evolution of these national incentives schemes and explores PES' role within this policy context.

The Guatemalan Forest Institute (INAB) created PINFOR in 1997 (Samayoa, 2018). The program, targeted largescale landholders for conservation. Payments went to reforestation and protection of forested lands (80%) and preservation of existing forests (20%) (Samayoa, 2018). Critics of the program state that the program masqueraded as conservation but meant to provide ample resources for the burgeoning forest industry. Additionally, small landholders and communal forests were not eligible for the program, exacerbating economic inequity between rural poor and the wealthy class who historically held the majority of land titles (INAB, 2016; von Hedemann & Osborne, 2016). PINFOR sunset in 2016 and was replaced with Probosques.

Due to criticism over exclusion of small landholders, the Guatemala government with support from the Dutch Embassy created and implanted the PINPEP program in 2010 (Samayoa, 2018). In its first 2 years of operation, the program had serious short falls in funding, but in the third year the budget doubled ensuring full delivery of payments to participants (Samayoa, 2018). PINPEP overlapped with PINFOR and overlapped briefly with Proboque. There are key differences between Probosque and the preexisting incentive programs, namely that it is viewed as an improved version of PINFOR. Additionally, it allows small landowners to participate and opens the door to communally managed forests by allowing them to be entered without official land titles (USAID, 2017). Concerns remain over the requirement of a “title” to the land to participate. One hope for the future of this program involves possible linkages to the United Nations REDD+ program (Reducing Emissions from Deforestation and Degradation), which could bring international funding for carbon sequestration, but the likelihood of this remains unclear (USAID, 2017).

In a parallel fashion, a number of PES schemes have been implemented in Guatemala in the midst of these incentive programs taking root. The schemes are often facilitated by INAB and local communities or, in some cases, international, regional, and local non-profit organizations (von Hedeman & Osbourne, 2016). Several of the schemes that I have come in contact with during my time there were a joint cooperation between indigenous governing bodies responsible for communal lands and suburban or urban municipalities, such as those in San Marcos and Quetzaltenango. Questions remain whether PES provided an easier route to resources for conservation of communal lands versus the incentive programs where land titles remains ambiguous and potentially a barrier.

II. Methods

My research took a case study approach and is based on extensive field research and literature review. My field methods included semi-structured interviews and participant observation. During the year I spent in the field working with local representatives of EcoLogic Development Fund, I observed two PES-related workshops and three meetings held in Totonicapán. I introduced myself as a researcher before each meeting began and informed the audience that I would not be documenting names or any identifying information. My goal was to take notes of what was discussed. I identified my first interview subjects in each actor group through EcoLogic Development Fund, my partner for this project. Further subject recruitment took place through snowball-sampling. Fernando Recanjot, my counterpart at Ecologic Development Fund, attended the interviews to provide translation and language assistance.

Fernando also assisted with recruitment by forwarding my recruitment emails to potential participants.

No form of compensation was given to the participants. Furthermore, the study was confidential. All of the information gathered was stored in password-protected computers and was not shared with anyone. Although I recorded names and contact information during interviews, this information will not be shared and subjects' names will never appear in any report or publications produced from this research. With their permission, the names of participant organizations may be used in this study. The tape recordings will be stored on my password protected laptop until May 2018. At that time I plan to submit the final version of my MP and destroy the recordings.

I developed two informed consent forms in Spanish that were either delivered verbally or provided as a written document. In order to determine if potential participants are literate or illiterate without embarrassing them, I simply asked before the interview begins if they would prefer to have the consent form read to them or read it themselves. With subjects who appeared to be illiterate or semi-literate, I provided them a copy of the consent form and informed them that they should ask a literate relative or friend for help if they would like to get in touch concerning any questions or concerns they may have about the research. However, none of my subjects needed assistance with the informed consent. I did take further precautions in my planning not to ask participants to sign the consent form given both my inability to determine participant's level of literacy, and so their ability to sign, without embarrassing them and the fact that some of the populations involved, especially in rural areas, may be very wary of signing anything that appears to be a legal document. There was one participant who was uncomfortable signing the consent form for the aforementioned reasons.

I conducted three interviews with conservation experts in Guatemala during the fall of 2016. Collectively, these experts represent over 30 years of professional experience, most if not all in Guatemala, and with 15 years of targeted experience working with the K'iche of Totonicapán. All interviewees have been directly involved with the planning or implementation of PES-schemes for forest and watershed conservation in Guatemala and have experience working to encourage participation in national forest incentives. The interviewees expressed a broad range of views and opinions, representing the local, national, and regional perspectives on use of PES-schemes and incentives for forest and watershed conservation.

All of the actors brought frontline perspective and experience with PES in Guatemala and more specifically in Totonicapán. Such unique perspectives better informed and strengthen the quality of my study.

More specifically, these key actors from implementing organizations include:

1. Federal-level policy makers: key figures in designing and implementing several federal level PES schemes, namely PINFOR, PINPEP, and the upcoming ProBosque program.
2. Local representatives from other conservation agencies: Defensores de la Naturaleza, CONFOR, INEB, involved in PES schemes in Totonicapán and across Guatemala.
3. Local NGO's: current and former employees of Ulew Chew Ja a local, Totonicapán-based NGO who attempted the implementation of PES in 1996. The scheme was contested by the traditional leadership and never implemented.
4. Field Staff from my partner NGO: a Field Technician with EcoLogic Development Fund, who has more than 20 years of experience working in

Totonicapán in forest and watershed conservation.

Where permission was granted, key actor interviews were voice recorded and later transcribed. Transcripts were then analyzed for key themes, including: local attitudes toward PES initiatives and the dynamic political, social, and cultural factors influencing the community's contestations and adaptation of PES.

Limited materials were used in this study: a voice recorder, a laptop, a notebook and pen, and printer for printing consent forms.

III. Results

The following section is based on an analysis of the themes raised during these interviews, as well as those raised during participant observation at traditional government meetings in Totonicapán with the Association of the 48 Cantons.

When asked how the interviewees defined PES, all of the interviewees used terms such as “incentive,” “compensation,” and/or “contribution.” One theme that emerged from this line of questioning was the difference in perspectives and values placed on these terms, particularly the word “payment” carries a negative connotation. In K'iche culture, monetary payment for conservation efforts is seen as counter to their ancestral practice of giving selflessly to one's community and nature. Furthermore, the human-nature relationship is the focal point of their spiritual belief or cosmo-vision. For instance, water is viewed as a gift from the gods and their efforts to protect water is part of their worship. These insights underscore the importance of political and cultural contexts and implications of such terminology. The interviewee with the most direct local experience was the only participant to use the term “payment” when describing PES, he did so in the following context “(PES) is a way people can take care of their resources

by receiving an incentive or payment, either in-kind or money;” (Interview 2, 2017). Though the word “payment” was used, it was linked to a potential non-monetary exchange, which indicates a departure from the traditional definition of PES as described earlier in this paper by Wunder (2005). Respondents 2 made an interesting observation: “the people who want to implement these types of initiatives generally speak of payments for environmental services and when one speaks with that rigidity of the term, people imagine that they are going to be charged for the use of the water, for the use of the forest, for the use of several things. So if one starts from the beginning talking about PES, in the minds of people and especially rural communities the idea of payment is fixed and that is one thing that they begin to reject” (Interview 2, 2016).

All interviewees described PES as a “contribution for the preservation of forests” and “compensation for the conservation of natural resources,” (Interview 2 and Interview 3, 2017). One respondent clearly stated that his organization places “ecosystem goods and services at the center of their definition of PES and acknowledges that “compensation can come in many forms, such as “a monetary payment or any other kind of compensation, of which there are ten, fifteen, or twenty ways to compensate people for caring for nature,” (Interview 2, 2016). These approaches to defining PES also begin to shift the relationship away from simply direct payment between users and providers, toward compensation for conservation with the goal being environmental services and protection. This idea also encompasses the belief that the goal of these programs is extended beyond the economic relationship to include the broader realms of conservation and community development. In summation, these interviewees supported related PES research that found traditional definitions of payment and valuation are rigid and often overlook non-monetary values local communities subscribe to nature.

Reconfigured and re-conceptualized version of PES is another common thread that emerged. When asked how their organizations use PES-schemes, the three respondents gave different answers, yet two out of three respondents stated that their organizations either use or would use an adapted approach to PES. That is, a PES-scheme that does not fit the traditional model. For example, interviewee two stated that his organization work with an “adapted approach, based on ecosystems or resilience to climate change; within that, the issue of ecosystem goods and services is a priority,” (Interview 2, 2016). With that he added, that he thinks PES has existed for many years in Guatemala, albeit in a non-traditional sense as his organization has defined it, where community members exchange a year of service in return for spiritual, cultural, and social benefits rather than purely on the economic exchange posed by Wunder (2005). Interviewee 4 expressed that his organization does not discuss PES in a traditional sense because then “it must be like a straitjacket; schemes have to adapt themselves to the conditions of each place,” (Interview 4, 2016). Ultimately, these interviewees relayed what many research studies have also captured, that the current narrow definition of PES doesn’t align with local cultural, political, and environmental contexts and that often, when implemented, it is done so in way that departs from the traditional neoclassical model. To underscore the previous interviewee’s point, respondent 4 stated that “they do not perceive any economic incentive from PES within the 48 Cantons” (Interview 4, 2016). He continued his point by saying that they do, however, value and internalize the socio-ecological benefits that their traditional spiritual and cultural obligation to conserve nature affords them, naming as examples clean drinking water, firewood, oxygen, and the beautiful landscape surrounding Totonicapán. Yet this respondent continued to describe the traditional, communal conservation practiced in Totonicapán as a form of PES that “is not modern, it’s like an ancestral PES that grandparents, children, and

grandchildren were practicing under the oral tradition, then they do it more out of conviction, worldview, and not so much for profit,” (Interview 4, 2016). The traditional types of practices this interviewee refers to involves *kas’qol*, which translates “suffering” in Kiche language, or an obligatory service that all Kiche adults provide at one point during their adult life to benefit the good of community. In Totonicapán, *kas’qol* often translates to two years working to protect and conserved the communal forest and watershed by raising and planting seedlings, mitigating conflicts around land use and illegal logging, and maintaining the piping system that delivers water to the majority of residents in the city of Totonicapán. Again, the theme emerges that an adapted or ancestral approach of PES is being practiced but one that differs greatly from the Wunder (2005) definition that places an economic exchange as the central mechanism through which ecosystems services are produced. The mere assertion that *kas’qol* is a form of traditional PES has begun to reshape local and national actors thinking on the definition of PES to include non-monetary values of conservation works, such as spiritual, social and cultural fulfillment.

In contrast, respondent 3, who represent the National Forest Institute of Guatemala, revealed his agency takes a more traditional approach to using PES. He stated that “we at INAB are the only the facilitators between the owners/providers and the users of the environmental service,” (Interview 3, 2016). INAB supports communities in establishing traditional forms of PES where payments are exchanged between users and providers of a specific environmental service or good. He provided several examples of where this work has been conducted, the most successful example being in Quetzaltenango, an area close to Totonicapán but where the local political dynamic involved fewer stakeholders and layers of complexity. Furthermore, he detailed the forest incentive programs that are the focal point of INAB – PINFOR, PINPEP, and ProBosques. In these instances, INAB does pay the provider or participant directly for their

contribution of forest cover. This respondent acknowledged that the incentive programs have been particularly difficult for the indigenous communities, especially Totonicapán, due to issues of land tenure, local traditional government and cultural autonomy, as well as concern with receiving funds or giving information to the government (issues of trust and transparency) (Interview 3, 2016). Of note here is the government agency's tendency to traditional approaches to PES and perhaps incentives and the acknowledgment that challenges faced by indigenous communities around participation are similar when it comes to both PES and incentives.

In August 2016 I had the opportunity to observe a meeting between the leaders of the 48 Cantons and regional representatives from government agencies involved in forest conservation, INAB and CONAP as well as the municipal forest office. The topic of the meeting was the communal forest in Totonicapán and resources to support future management by the indigenous community. All speakers at this meeting were experts in subsidies from federal government for forest management, PES, communal forestry, land rights and indigenous rights. Several points were made that underscore the themes raised in the interviews. One point raised by the K'iche leaders is that the Guatemalan government should support and traditional conservation schemes such as the one present in Totonicapán. Secondly, representatives of the K'iche community openly contested participating siting detrimental impacts particularly to their pre-existing cultural and spiritual motivation to conserve nature. Lastly, it was made clear that terminology particularly around the words "payment" and "compensation" were challenged for missing non-monetary value of natural resources. A few additional themes emerged via these observations that were concerns addressed during my interviews and ideas that have emerged in research literature. One is that it was clear that the government forest incentives catalyzed tension between the municipal government and indigenous governing body around the topic of land titles

and institutional recognition. Though the 48 Cantons carried the majority of conservation work in the communal forest, the municipal office received funds from the Guatemalan government because they hold title to the community forest and was therefore able to enter a portion of the forest in the PINFOR program. Which raises the second theme, land titles, institutional recognition, and autonomy? The municipal office was permitted to enroll a portion of the communal forest in PINFOR for two reasons. First, they are a legally recognized entity by the Guatemalan a government. Second, they hold the formal title to the land. All of these points support the bodies of literature that highlight PES' potential blind spot for local cultural and political contexts as well as its potential to perpetuate the marginalization of indigenous communities by reinforcing systems that do not recognize traditional governance, autonomy and ancestral land ownership. These challenges have contributed to the community's decision to mobilize to not participate in either market-based PES or direct payment schemes involving incentives. Though some local residents participate, they are few and Totonicapán remains an area with the lowest participation in the country. I argue that this is more to do with mobilizing support for local cultural, spiritual, and political autonomy than it is with a community resistance or wish to challenge all conservation programs.

The 48 Cantons' dialogue with regional representatives of government played a role in reshaping PES programs. These dialogues have opened a door, at least to a degree, for feedback on the challenges the community faces with such programs and ways to lower barriers to participation. PINPEP and Probosque have been altered to consider small landholder, communal lands, and flexibility with land titles, in part due to conversations held with leaders in Totonicapán. Furthermore, the leaders in Totonicapán argue that they already practice a

traditional form of PES that isn't dependent on the government or money, therefore they do not need INAB's programs to conserve forests.

I had an informal follow-up conversation with one of the regional officials from INAB, at this regional office in Quetzaltenango. The conversation took place in October 2016. At that time, he acknowledged the challenges the current program structure presented to the community in Totonicapán. He provided interesting insight into the bureaucratic process that governs regional field office reporting, planning, and field work, stating that much of the work is driven by a goal or metric tethered number of participants in the incentives program. Meaning they focus all of their energy on engaging and preparing landholders to participate in the incentives schemes, because that is how their productivity is measured by headquarters. At that time, he wondered though, if relationship building or community engagement around conservation, cultural contexts, and receptivity to different approaches, PES included, were a goal or metric if he and his staff would have a better understanding and working relationship with the indigenous community in Totonicapán. He also wondered if that may lead to improved program, schemes, and receptivity to PES.

A number of themes emerged from the respondents regarding the challenges that exist to implementing a traditional PES-scheme in a community such as Totonicapán. Among the overarching themes, these topics emerged: compatibility with local cultural and spiritual values, adaptability to local political context, transparency, lack of technical expertise on behalf of implementing agency (ies), misunderstanding among community leaders and residents, and lack of trust in the decentralized democratic system of government in Guatemala. Respondents 2 and

4, described the introduction of a monetary incentive as “negative on kas’qol” or the obligatory year of service that each member of the K’iche community must perform on behalf of their community (Interview 2 and Interview 4, 2016). Specifically, respondent 4 stated that the risk of PES destroying the concept of kas’qol is real and possible, “you are going to pay them and people (will) lose their sense, their compass: because they pay you and you already understand the meaning and concept of kas’qol, then you are going to take care of the PES part and it will be a successful PES from a technical viewpoint, but you're going to destroy community service,” (Interview 4, 2016). These points correspond to the literature on the importance of understanding how local communities’ value nature and the potential of corroding a pre-existing conservation ethic, traditional governance structures and the way community members understand their obligation to nature and each other.

Another challenge raised by the interviewees is that PES is often poorly understood and misconceptions persist. However, respondent 2 conjectured that the leaders in Totonicapán may misunderstand all the ways in which the monetary resources could be delivered to the community and how, with good accountability, the funds could augment the system of kas’qol rather than undermine it. In other words, he identified what he believes to be an issue of capacity building around ways in which monetary can be received, for example in-kind. Respondent 3, who is a PES expert an international non-profit, also added that it is difficult to place an economic value on resources a community assigns spiritual significance to, in the case of Totonicapán he used the example of water brought being brought to the K’iche people by God. In this context, it is a challenge to get people to pay or receive money for what their god or gods bring them and will continue to bring (Interview 3, 2016). He concluded that with proper capacity building and exchange of knowledge on how PES can work, communities such as

Totonicapán may begin to understand that the goal is to protect and conserve these “gifts” or resources. Again, the themes raised on this topic correspond to research suggesting that PES is complex and often misunderstood, leading to skepticism or poor implementation and management.

Understanding local political environment is critical the success of PES schemes. On the topic of local political dynamic, respondent 4 indicated that PES-schemes – as well as current incentive programs – fail to recognize the tension between the local traditional leaders (Association of the 48 Cantons) and the “newer” municipal government (Interview 4, 2016). He described the relationship between the two institutions as “not so positive” and explained that the municipal government holds the legal title to the communal forest and had enrolled the forest to receive incentive payments. The result is that the municipal government receives money and hold legal authority over a forest that the 48 Cantons manages and provides labor to conserve. Thus a division has been created. When asked if the indigenous leaders and governing institutions were adequately recognized within the Guatemalan government system, Respondent 4 answered “No, they are not. And that is the struggle of many indigenous peoples: that they be recognized as indigenous peoples with all the international conventions that exist,” (Interview 4, 2016).

Respondent 3, who represents an international conservation organization, speculated that the political reasons PES hasn’t thrived in Totonicapán were perhaps in line with the reasons incentive programs haven’t succeeded in the area, being thwarted by higher level historical and systematic challenges, such as: widespread lack of access to land tenure, land titles and municipal certification and historical fear among indigenous communities of providing government institutions with personal information for fear of military or government seizure of

private properties (Interview 3, 2016). Failure of practitioners to recognize the current and historical contexts of community can result in rejection or poor implementation of PES programs.

Transparency was also a major theme. All interviewees agreed that transparency is key to making a PES scheme successful, especially in the context of Totoncapán. Respondent 2 emphasized that transparency must be discussed at all stages of development of local PES scheme; without a transparent process for administration, decision making, and finance, these initiatives run a high risk of failure (Interview 2, 2016). Respondent 3 shared this viewpoint and provided examples of successful cases where a combination of local government, non-profit, and residents have established representative committees and reporting or public hearing processes that force them to report program success and failure and finance status in transparent ways (Interview 3, 2016). The fourth respondent indicated that without a transparent process, or “social auditing”, then the funding may be misallocated and lead to program failure: “I may sound fatalistic but I have lived here and I have seen it, so I can tell you more safely that if you give funds and there is no control or transparency or social audit the process will advance for some time but from there is lost,” (Interview 4, 2016). As with the literature, these practitioners highlight the importance of transparency at every stage of development and implementation of PES.

Lack of technical expertise in participatory planning, economic valuation, program evaluation and transparency also surfaced as a common theme, especially for Interviewees 2 and 3. For respondent 2, a dearth of expertise in PES has led to more schemes failing than succeeding. The respondent acknowledged the following domains where technical expertise is needed but lacking in the context of PES development and administration: community

engagement, economic valuation, capacity building and awareness, and overall lack of experience designing a PES scheme and structure because it remains a fairly new concept (Interview 2, 2016). From the perspective of interviewee 3, lack of technical expertise and experience has resulted in many potential residents being confused about what PES schemes truly entail, leaving those experts with experience with PES with the task of unraveling misconceptions and fears that are detrimental to getting successful program started (Interview 3, 2016). These points reflect the literature as well, in that there is dearth of professionals well versed in economic valuation, PES design and implementation, and all around construction of economic instruments for conservation.

Schemes that adapt to or are shaped by local contexts hold promise. Interviewee 3 discussed the potential of PINPEP and Probosque. The interviewee expressed support for the programs adaptation to the situation of land tenure. He stated that “in the case of forestry incentives, the greatest problem is land tenure that is the certainty of ownership (Interview 3, 2016).” While PINFOR limited participation due to strict policy around land titles and size, PINPEP and Probosque open doors to small landholders, communal lands, and offer greater flexibility with titles. This interviewee opined that PES schemes offer greater flexibility than forest subsidy programs because communities hold more of the decision-making power. The interviewee reflected on the theory of PES and stated that “now in the case of payment programs for environmental services at the end it is the population that decides whether or not to make payment for environmental services and they decide how much they are willing to pay more or if they are willing to work in the forest. In other words, it is the decision of the population to include them in this type of mechanism-(Interview 3, 2016).”

IV. Discussion

The main findings from these interviews and observations include understanding local and cultural values of nature and perceived benefits, challenges with land titling, transparency, and trust in government, as well as continued misunderstandings of PES. More specifically, my study found that communities hold different perspectives and place different values of the terms “compensation” and “incentive.” Rigidity in terminology fails to recognize local contexts and leaves out non-monetary and indigenous cultural spiritual values associated with conservation of nature.

My study also found that in-practice, PES reaches beyond mere economic benefit and monetary gain. In the case of Totonicapán, PES could already be taking place with the benefit or gain being preservation of ancestral spiritual and cultural practices symbolic of an indigenous community’s identity and autonomy. Overall, the finding show that PES schemes in practice and in current use depart from the traditional definition posed by Wunder. Often, PES is reconfigured to fit local dynamics.

One unintended result of PES identified in this study is its potential to corrode pre-existing culturally and spiritually rooted conservation ethic. Societies driven to conserve nature under these conditions do not depend on economic gains or benefits to do so. Additionally, understanding local cultural and political contexts are imperative, not doing so can undermine implementation and hinder success of programs once started.

Another finding is that land titling is a challenge as is recognition of traditional governance structures and autonomy of indigenous leadership bodies. Trust between the government and community institutions and leaders can foster resistance or lessen a

community's receptivity to such approaches to conservation. Lack of expertise can lead to poorly understood and implemented schemes. Misunderstandings of what PES is and is not persist. Transparency is critical to the success of such schemes. Internal bureaucratic processes can drive negative outcomes as well – if programs measurements and evaluative criteria included community engagement, planning, participation and/or partnership in addition to numeric goals such as number of participants or beneficiaries of given program, perhaps PES used more widely and in adaptive, locally appropriate configurations.

VIII. Conclusion

While further research is required, the findings of this study begin to provide some insight into ways in which local actors have begun to contest and reshape PES schemes being implemented in the context of Totoncapán, Guatemala. Among the approaches used by actors implementing PES programs to do so is recasting of the term “value” to include non-monetary social and spiritual gains, such as they receive through *kas'qol*, to make the program more acceptable and appropriate to participants. This approach is supported by much of the literature as well.

As outlined in the results, a number of aspects of the local political, social, environmental and cultural context have contributed to the community's decision to try to alter or contest PES. Among the political decisions are fear of providing the government with private information, land seizure, tension with institutional recognition of traditional governance and indigenous autonomy, and conflict between traditional and municipal leaders over land titles. These factors are similar to those highlighted in multiple PES studies. Cultural and social factors contributing to the contestation include the monetization of nature being in direct conflict with K'iche culture

and spiritual obligation to protect nature (kas'qol) and fear participation in a capitalistic instrument could undermine ancestral values the K'iche feel are continually/already threatened by modernization. While other studies have alluded to a similar concern with PES, but the case of Totonicapán is among the first to underscore long standing ancestral practices centered on conservation of natural resources. The difference in this study versus others is that indigenous autonomy and preservation of historically marginalized cultures is at risk alongside the conservation behavior that may be abandoned in a capitalist programs wake.

The various actors I interviewed seemed unconvinced that PES schemes have been reshaped enough to benefit communities such as Totonicapán. However, there are several approaches that may be taken to increase the chances of PES taking root and improving outcomes:

1. Conservations professionals working to educate the community of the scheme must be knowledgeable of the traditional local governance structure, cultural and spiritual value of forests and water;
 2. During the planning phase the cultural and spiritual value of resources and the cultural obligation to care for the resources by the community must be recognized, honored, and included in “payment” portion of the scheme;
 3. Direct payment should be removed from the planning process and replaced terminology around alternative and/or non-monetary values;
 4. The “payment” process, whatever form it may take, must be fully transparent and rooted in local cultural value of providing a voluntary time of service to one’s community.
- Lastly, while these findings are geared toward the reality of Totonicapán, it is possible to extrapolate what has been learned and apply these approaches under similar conditions

where communities have complex, established relationships with nature and a history of ancestral governance.

Additionally, based on the results from the interviews, I conclude the original, neoclassical definition of PES needs to be updated and refocused, or broadened on multiple fronts. First, the definition would benefit from recognizing the non-monetary benefits both users and owners (or protectors) receive from conserving forests and watersheds. The rigidity of the word “payment” was clearly targeted as a concern by some of the interviewees, per feedback they received from participants over the course of their careers. All respondents expressed the importance of taking an “adaptive” approach to PES, which lends itself to further pursue the case of more flexible, broader definition that includes recognition of non-monetary compensation, ecosystem goods and services, and non-monetary values and acknowledges and is adapted to local culture, spirituality, and power dynamics. As one respondent indicated, it's best to start education around PES with a more flexible definition since “payments” are negative to some communities and PES should be adapted on a community by community basis.

Much progress or improvement could be made to PES schemes and receptivity should implementing organizations ensure all staff has the technical capacity to design and implement such programs. Technical capacity should cover a range of skill sets critical to the success of PES, some of these are: community engagement and participation (to ensure understanding of local culture, politics, social dynamics), economic valuation, transparent governance and finance, and hands-on experience designing and implementing PES programs or in-depth training by those who have. Improving technical expertise of staff may address other challenges raised during the interviews, such as transparency, rampant misunderstanding of what a PES entails, decreasing traditional barriers to entering such programs like land tenure, fear of land seizure,

and loss of autonomy. Building professional expertise and capacity should also focus on how PES schemes can be promoted as adaptive, flexible, and as community driven at all times. Being community driven may mean that schemes can value local culture, spirituality, traditional governance and include non-monetary compensations between stakeholders.

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