An abstract painting with a dark blue background. There are several large, soft-edged shapes in yellow and red, some with green and purple accents. The overall effect is a textured, layered composition.

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COVER IMAGE "Untitled" Rebuilding Series, mixed media on wood. Painting + image, Anna Livia Brand.

Julie Hermesse

**ANALYSIS OF COSMOLOGY, PRAXIS
AND HISTORICAL INEQUALITIES
IN THE CONSTRUCTION OF
SOCIONATURAL DISASTER IN THE
MAM GUATEMALAN ALTIPLANO**

ABSTRACT

This article critically examines the mechanisms of inequality that perpetuate vulnerability to extreme natural phenomena. It demonstrates that the catastrophic consequences of a natural disaster result more from a social process than the event itself. The analysis, based on ethnographic research in a municipality of the Mam Guatemalan Altiplano, first considers the construction of social and cultural vulnerability to disasters. It then provides an analysis of the tensions between a traditional Mayan discourse and respect for nature and the unsustainable practices of land management as exhibited in this context. Finally, I reflect on the unjust historical distribution of land in Guatemala and the dominant ideology of the global market, both of which render impossible a sustainable relationship with the natural environment. These unsustainable environmental practices, caused by economical and social inequalities, produce an unjust distribution of vulnerabilities to disasters.

INTRODUCTION

This article demonstrates the necessity of breaking down the term “natural disaster” by examining the repercussions of extreme events as both social and natural phenomena. I first question religious, cultural and social representations of the Maya Mam population of the Guatemalan Altiplano¹ faced with the latest extreme natural phenomena: Tropical Storm Stan². From the ethnoecology perspective, developed by V. M. Toledo (1992) as “the ecological evaluation of the intellectual and practical activities that certain human groups execute during their appropriation of natural resources” (p. 10), I approach the Mayan Mam cosmology (Kosmos) relating to the universe and in particular relating to extreme natural phenomena. I observe that representations of disasters can induce fatalist attitudes when residents are faced with catastrophes. I next analyze the relationship between religious belonging and unsustainable environmental practices, focusing on the praxis of the inhabitants of the Altiplano Mam with regard to their activities involving the natural environment. Finally, I examine the influence of historical and structural contexts on the construction of economical inequity and unsustainable environmental practices. This article attempts to illuminate the elements influencing environmental and social practices. A holistic and comprehensive anthropological approach allows me to examine the complex development of disaster vulnerability construction. Environmentally unsustainable practices originating in economic inequalities create uneven vulnerabilities to extreme natural phenomena.

“Natural” Disasters: Phenomena at the Interface of Society and the Natural Environment

Guatemala, known in the tourist industry for its eternal spring, is also known for its eternal violence³ (Le Bot, 1992; Bataillon, 2003) and its vulnerability to natural disasters⁴ (Hernández Pico, 2005; Gellert, 2003). The ethnographic work forming the basis of this research began in the Mam Guatemalan Altiplano of the Quetzaltenango County six months after Tropical Storm Stan devastated this area in October 2005 (Map 1). In this Northwest, rural zone of Guatemala, I was based in the center of the municipality of San Martín Sacatepéquez (SMS), located in the “cold lands” of the mountains (2,400 meter altitude), rather than in a lowland municipality with a tropical climate. This article is based on 6 months of field work in SMS. The data was collected from participant observations and interviews with inhabitants of all generations and religious convictions. The municipality, which is populated 95% by Mayan Mams communities, suffered human, material and agricultural devastation from Tropical Storm Stan. The municipal authorities estimate that 21,500 of the 29,000 inhabitants of the municipality were directly or indirectly affected by Stan⁵. Stan generated a state of catastrophe in SMS, with damages far more extensive than those of previous disasters and those of other municipalities of Quetzaltenango County, caused by the same storm.

The frequency of extreme natural phenomena in Guatemala (hurricanes, volcanic eruptions and earthquakes) renders these natural events also as cultural and historical events in the history of the people, even though the consequences of these disasters have not always been catastrophic. The ancients, regarded as guardians of the memory of the community, tell, for instance, that other storms and hurricanes passing through SMS did not produce as much damage as Stan. This event provides a recent lens through which to analyze how natural disasters are understood in the community and how we might view disasters as not only as natural, but also social and cultural events.

Religious, Cultural and Social Representation of “Natural” Disasters

Differently experienced by different communities, disasters generate multiple interpretations based on religious convictions and cultural representations (Prado, 1990; Hoffman, 2002). In an analysis of

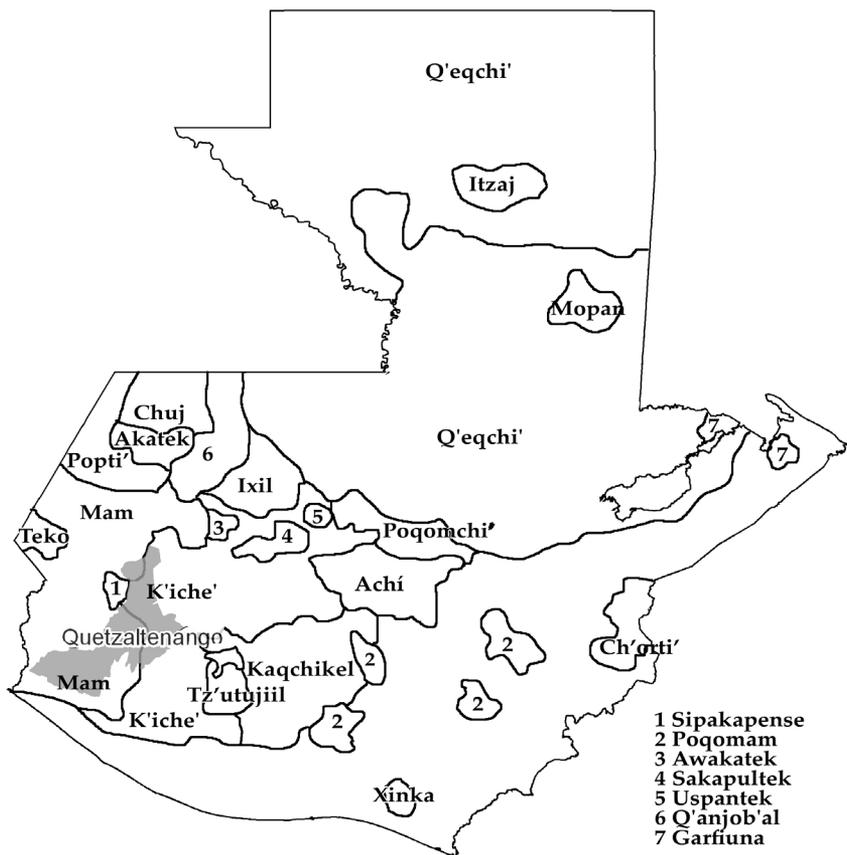


FIGURE 1. Guatemala and Quetzaltenango, according to linguistic divisions. *Source: Bryan Long.*

my interviews, religious belonging seems to distinguish the inhabitants of SMS' interpretations of the passage of Tropical Storm Stan.

With a four decade presence in SMS, the Protestant Pentecostal religion rejects the religious and cultural heritage of ancestral Mayan spirituality⁶. The Pentecostal Churches reject animist beliefs and with shamanist practices, which they perceive as witchcraft. Conversations with Pentecostals interviewed intensely stressed millenarian beliefs that God will destroy the terrestrial world and that Christ will return to establish a new world. According to the Pentecostals, Tropical Storm Stan was a precursory sign of the arrival of Christ.

However, respondents of the Mayan ancestral religion believe that the forces living in their natural environment have always acted through natural disasters. According to the Mayan animist conception, a harmonious communication can be established between humans, natural spirits, and the Creator Ajaw through a shaman intermediary. Tropical Storm Stan, compelled natural forces to alert humans of their lack of respect towards "Mother Earth", and therefore re ected an imbalance between humans, their environment, the spirits living in it, and God. According to respondents of the Mayan

ancestral religion, the inhabitants of SMS were not taking sufficient care of the land, both from an economic practice viewpoint and a spiritual viewpoint. In exchange for what they extract from the ground to feed themselves, the ancestral conception of the sacred earth encourages man to naturally fertilize the land, both because it is an economic resource, but also because it is in need of spiritual nourishment by ceremony and prayer. Today, however, this reciprocity relationship with the land is more defined by subsistence utilitarian constraints and by production oriented capitalist logics: chemical fertilizer substitutes for spiritual nourishment.

Moreover, as a key figure of the community, the shaman intermediary is responsible for restoring the biological, climatic or even social stability of the community by working directly with God, demons, ancestors and other invisible beings (Freidel, Schele & Parker, 2001, p. 33). For indigenous people, clinging to their ancestral Mayan religion, the shamans of SMS, forgetful of their work with the mountain spirits to maintain good relations, were thus held responsible for the imbalance revealed by Stan's passing. Residents believed that the mountains lacked spiritual support and therefore did not avert landslides on their slopes. Certain inhabitants also mentioned other unbalancing factors contributing to Stan's devastation, including a lack of communication with the young, thus pointing to the failure of the shaman's failures in community; the inhabitants' lost ability to hear the mountains' alarm signals; and the desecration of Mayan altars by extremist Pentecostal groups.

According to A. Oliver-Smith (1996), anthropologists writing in the field of risk conceptualize risk in its socio-cultural context far differently from traditional risk approaches related to the probability of a "real" risk, determined scientifically and objectively (p. 319). A major contribution in this field is that of M. Douglas and A. Wildavsky, in their work *Risk and Culture* (1982). They begin with the assumption that various characteristics connected to social life produce judgments about what is to be considered "dangerous". Relation to risk depends on culturally rooted conceptions of time and is socially differentiated (Douglas & Wildavsky, 1984, p. 87). Indeed, beyond the differentiation of disaster representations according to religious belonging, the results of my ethnographic research showed that the whole community of SMS, without religious distinction, has a conception of time impregnated by Mayan cosmology. The inhabitants of the Altiplano Mam share a common 52 year cyclic and prophetic representation of natural disasters. Time, therefore, takes on the form of repetitive cycles, allowing the forecasting of certain events, including natural disasters. I observed, for example, SMS inhabitants rebuilding their houses on the ruins of their old dwellings in zones of high risks to landslides. Conscious of the incurred risks, inhabitants justified this "risky" reconstruction by their understanding that in their human lifespan they will only know one 52 year cycle. Thus adults will experience no further cycle disasters such as the one embodied in Tropical Storm Stan in 2005.

Beyond the cultural perception of time, the social perception of time also influences risk perceptions. The deprived and dire situations of the inhabitants of the Altiplano shorten their temporal horizon, instilling in them a sense of precariousness which anchors them in the present and deprives them of the capacity of projecting into the future. That precariousness forces inhabitants to concentrate, above all, on daily survival and not on the durability of their housing or of their land. During previous decades, the lack of cultivable land and population growth pushed local farmers to advance the agricultural borders at the expense of forests. Many peasants now cultivate cheap land at the edge of riverbeds and mountainsides. Therefore, the economical vulnerability accentuates, and even sometimes causes, their environmental vulnerability to threats from extreme natural phenomena.

Causal explanations of disasters have a practical role, suggesting or failing to suggest preventive actions, questioning the ethical and political problem of a community's fatalistic attitude. Indeed,

the disaster's cyclic representation and, for others, an apocalyptic perception adds to this precarious population's perception of the brevity of life, and anchors the inhabitants of SMS in a kind of fatalism with regard to natural disasters. For S. M. Hoffman (2002), psychologically, a cyclic symbolism offers a particular comfort to the victims, because what happens can be considered planned. In addition, politically, cyclic symbolism leaves the populations particularly vulnerable. For individuals living in risk zones, they believe their destiny determines all and therefore preventive acts are rendered useless.

The religious and cultural representations of disasters together with socioeconomically precarious living conditions accentuate the degree of vulnerability of the inhabitants of SMS to natural disasters. The cultural argument justifying the rapid rebuilding on ground having just suffered from landslides or floods coincides with the material and economic impossibility of buying other lands for rebuilding their dwellings. If it is said that the cultural practices and representations are irrational, it should also be said that regional and national economic policies are unjust and inequitable. Their lack of support for these precarious populations increases the vulnerability of the populations to disasters.

Relationships of Religious Belonging and Environmental Practices

Human communities are simultaneously the product of their natural environment and their conceptions of "nature", as the natural environment is influenced by human activities and their conceptions of nature (Descola, 2005; Casteñeda Salguero, 1991). This mutual construction provides a theoretical basis for affirming that natural disasters are also social.

Tropical Storm Stan caused landslides and floods in SMS because the sandy soil was eroded from massive deforestation of the surrounding mountains and saturated by the excessive use of chemical fertilizers and dwellings built on ill-suited sites. This land deterioration reflects a modification in ecological cultural traditions. Ancestral Mayan culture promotes a relation of reciprocity and harmony with the environment, particularly with the mountains. My respondents, mainly the shamans, affirm the importance of this respect and the conservation of their natural environment. Attached to Mayan spirituality, the shamans assert their ancestral ethnic identity anchored in the past and in the local environment. The mountains and the volcanoes, places of ceremony inhabited by the ancestors' spirits and natural forces, are perceived as the roots of their cultural identity. During discussions with shamans of SMS, they called for increased efforts to safeguard their natural environment, not only for its economic resources, but also for its spiritual and cultural inheritances. The shamans believe in the immanence⁷ of divine being in creation. The Pentecostals of the area reject animist relations with living entities, such as mountains, animals, the vegetable kingdom and they saw little sense and interest in the fight for safeguarding the mountains as a cultural inheritance. Furthermore, the majority of them operate on a millenarian reading of natural disasters; the end of the world is imminent. Rather than fighting for the conservation of the terrestrial world, their efforts are concentrated on their own salvation and proselytism campaigns aimed at reaching the celestial and eternal world.

However, several elements complicate these assumptions about the differentiated environmental management and the religious belonging of the inhabitants. First, in spite of the prevalence of ecological respect for the natural environment among the shaman's discourses, I noted that this talk was not restricted to the followers of the Mayan religion. Ecological consciousness, ranging from an ancestral mythical consciousness to more modern concerns, is shared to varying degrees by all inhabitants of SMS. Secondly, the sacred character of the land as the heritage of a millenary civilization, as presented in shaman interviews, is idealized and doesn't reflect daily practices. The

exploitation of farmlands and forests remains, in practice, incompatible with the conservation of the natural resources in the long term. Whereas Mayan spirituality gives attention to the harmony between human communities and others non-human living entities, their actual daily practices are mainly unsustainable. Like all SMS inhabitants, they are caught up in a capitalist process which promotes high-yield production practices in the farmlands and forests and disregards the ecosystem.

Belying the conversations in the interviews, observation of the actual practices of the inhabitants of SMS relativizes the link between individuals of the Mayan religion and their ecological practices and the unsustainable practices of the inhabitants of SMS are first subject to economic, political and social realities and pressures.

Historical and Structural Construction of Economic and Environmental Vulnerabilities

My research demonstrates that the catastrophic consequences of an extreme natural phenomenon like Tropical Storm Stan are also the product of the relationship between a human society and their environment. Therefore, beyond the social construction of a disaster, it is necessary to analyze the historical and structural construction of economic vulnerability which exacerbates the environmental conditions.

From pre-Columbian times until today, land has been the fundamental factor in the formation of wealth, power, and conflict in Guatemala. Due to the expansion of coffee growing and the Reform of 1871, the populations of the Altiplano Occidental experienced the effects of private property expansion to the detriment of the ancestral collective uses and properties (Palma Murga, 1997 and 2002). Those expansions allocated low-lying, high output land to the rich and high-lying, low output land mainly to small property owners (Guzmán-Böckler, 1997; Grünberg, 2003; Melville T. & M. Melville, 1982). These transformations benefited the productive sector and deeply modified the agrarian landscape. The laws promulgated deprived the villages of their territorial inheritances and because the agricultural lands left to rural populations were not sufficient for survival, the peasants became dependent on work in the coffee plantations. Moreover, according to G. Palma Murga (1997), "These measures put an end, in many cases, to the spare spaces that permitted the rotation of crops, extraction of wood, fruit, fishing, hunting etc." (p. 31).

These economic and social historical inequalities involved practices which today accentuate the vulnerability of the population to the threats of extreme natural phenomena. The unjust distribution of the land shares in terms of size and quality contributed to deforestation and an overuse of nonagricultural land. In addition to the retreat of the forest border, the small farmers of the Altiplano could only practice intensive agricultural production on inadequate land by excessive use and dependency on artificial fertilizers.

Land reform having never occurred, these land use patterns have, to date, not been modified. The Guatemalan population continues, "to cramp with the land as a single option for survival" (Palma Murga, 1997, p. 19). Moreover, the 36 year civil war which ended in 1996, stimulated by the most conservative groups of the dominant classes, caused not only the death, exile and forced migration of thousands of Guatemalans, but, also an anxiety about owning one's own land and potentially falling victim to violence.

Illegal economic migrations to the U.S. seemed an alternative to chronic poverty⁸. For C. Guzmán-Böckler (1997), Guatemala has become a country exporting peasants without land. The financial repercussions of these exoduses are considerable for the economic development of the country⁹ and

these migratory phenomena in turn modify the landscape of the municipality. Returning migrants, with new economic capacity, are now able to buy land and to build their own dwellings. However, an unprecedented rise in land prices and the decreasing availability of buildable land pushed migrants to build on unsafe, cheaper land, in unstable lowlands or riverbeds. Thus, the construction and rebuilding of houses after Tropical Storm Stan was subject to the consequences of this in a tion and to the increased the vulnerability of owners and communities by situating their new homes on the cheapest lands. Migrations create new socio-economic inequalities between the inhabitants. In this configuration, those not having the financial resources to leave Guatemala for the U.S. become even poorer and more vulnerable to the disasters. Moreover, the urban landscape of the municipality has changed due to the increasing number of multi-story houses, symbols of the economic success of returning migrants. Nevertheless, this type of multi-story architecture endangers the community because it is often not built to seismic safety regulations, which advise low level house construction. In Guatemala, the impact of Tropical Storm Stan was felt by the marginalized population which is mainly indigenous. As J.P. Van Ypersele underscored (2006):

The poor often have no other choice than installing themselves on small holdings without value in zones prone to natural disasters, such as riverbanks, unstable hillsides of deforested zones or fragile food prone zones. These are the conditions which predetermine not only the vulnerability of those most exposed to natural disasters, but also their capacity to face the consequences (p. 12).

The poverty, in which the populations of Guatemala live and which contributes to patterns of deforestation, construction of inadequate dwellings, and the occupation of high risks zones are the product of many years of exclusionary economic models. It is also the product of dominant ideologies.

In order to explore how socially produced vulnerabilities manifest themselves in the natural environment, A. Oliver-Smith (2002) suggests establishing links between the increase and expansion of catastrophes and the ideas, institutions, and dominant practices of our contemporary world (p. 27). In SMS, short-term profitability, land overuse, and individual, high-yield output practices created unprecedented levels of environmental destruction. In short, the characteristics of capitalist economies provoke the amplification of human vulnerability to disasters and ecosystem destruction. For the poor, natural resources constitute above all their economic survival. The municipalities of the Altiplano Mam, formerly protectors of their traditionally collectively lands, are today diverted from the management of those lands and the inexistence of municipal policies of land management contributes to the destruction of ecosystems. The inexistence of government policies in support of an integral rural development with land reform generates continued impoverishment of the population¹⁰. In Guatemala, policies to reduce disaster risk in the long run would essentially have to regulate land reform. This reform could help attend to the injustices of populations relegated to the least fertile land.

CONCLUSION: The Inequality and Responsibility of Human Communities in Facing Disasters

The ethnographic investigation of a given geographical and ethnic place helps us to understand a community's vulnerabilities. The representations one has of the world and the conception of natural threats result from religious, cultural, economic, and social systems. In my research, I observed that the representations of the cyclic patterns of disasters and the fatalistic attitude towards

those disasters confined the inhabitants of SMS to an inevitable reproduction of the vulnerabilities. Furthermore, despite the ecological and cultural traditions of the Mayans, the current farming and forestry activities observed in SMS are principally based on a short-term land use models with little ecological respect of the natural environment. This situation of environmental blight, produced by socially and historically induced unsustainable practices, perpetuates environmental vulnerability to extreme natural phenomena.

But an analysis must go beyond diagnosing strictly human responsibilities for a disaster to reveal the mechanisms of inequality at play in the construction of vulnerability to socio-natural disasters. At the origin of unsustainable environmental practices lie historical and structural contexts, generators of deep social and economic inequalities. Historical, economic exclusion from the fertile national land areas produced, for instance, an overexploitation of farmlands and forests. These practices have led to the continuous reproduction of a social system exploitative of the environment and of poor people. Social relations, inscribed in the environment, reflect the contradictions that are inherent in the social system and in the relationship between people and their environment.

For A. Oliver-Smith (2002), "Disasters are perhaps the most graphic expression of those contradictions" (p. 36). An idea of sustainable communitarian development, defined by V. M. Toledo (2001) as, "the process of endogenous character in which a community takes (or recovers) the control of the processes that determine it and affect it" (p. 1) reveals that contemporary society exploits the land because it has lost control both over nature and over itself. Thus, risk is not given but built (M. Douglas and A. Wildawsky, 1982) and risk reveals the uneven character of our societies. As P. Peretti-Watel (2000) says, "To speak about 'undergone risk' does not make sense, unless it includes an argument aimed at denouncing the inequality of chances, the asymmetry of the individual situations" (p. 19).

If the inhabitants of SMS are "responsible" for the ecosystem degradation generating environmental vulnerability, we must also recognize that there is no real liberty in their practices in dealing with the land. This then reveals the governmental irresponsibility in just and equitable land reform and requires that inequalities to the risks of disaster must first be opposed by a struggle for more equality in land distribution. Support for a revalorization of ancestral Mayan ecological practices with the land can only be made effective by a more equitable land distribution.

Whereas practices with regard to risk management continue to be eminently reactionary and conservative (Gellert, 2003), such problems also question the responsibility of the experts in disasters. Most often, disaster management models are preconceived and uniform. They do not take local ideologies and vulnerabilities into consideration in their understanding of how risk evolved inequitably. Unfortunately, serious socio-cultural data concerning comprehension of local contexts are seldom required. This continues to remain a challenge for anthropologists concerned about injustices in vulnerability distribution and therefore more grounded work is needed to understand how preventative assistance can be approached in such situations where disaster risk is socially and historically produced and unequally and unjustly perpetuated.

AUTHOR'S BIOGRAPHY

Currently completing Ph.D. at the Belgian Scientific Research Funds, Julie Hermesse is a member of the Laboratory for Prospective Anthropology of the Université Catholique de Louvain, a board member of the Belgian Society of American studies, and a member of the Sociological Studies Center of Saint-Louis University.

[ENDNOTES]

1. Twenty-four linguistic groups cohabit in the national territory, of whom twenty-one are Mayan including the Mams. The ethnic and linguistic area Mam covers the Quetzaltenango, Huehuetenango and San Marcos Counties. The area of study, San Martín Sacatepéquez, is one of the twenty-four municipalities of Quetzaltenango, located in the Southern Mam speaking region of Guatemala.

2. Stan made landfall in Mexico as a Category One hurricane on the Saffir-Simpson scale. Such a hurricane rating is characterized by its slow movement and a great amount of rain produced over a short time. Stan was nothing but a tropical storm as it moved across Guatemala between October 3 and 6, 2005.

3. Guatemala suffered from a civil war of 36 years qualified, according to adequate legal terms, as genocide. The peace accords of 1996 having officially put an end to those decades of violence, do not prove to be reliable in terms of land reforms and the fight against impunity.

4. The geography of Guatemala predisposes it to a threat level. This country is indeed located at the junction of three tectonic plates with many faults, bathed between the Pacific Oceans and the Atlantic and endowed with a diversified morphology made up of high mountains, volcanoes, alluvial and coastal plains.

5. According to the Center for Research on the Epidemiology of Disasters (CRED) based at the Catholic University of Louvain, 455,314 Guatemalans were affected by the tropical depression. Retrieved June 23, 2008, from <http://www.em-dat-net/disasters/Visualisation/profiles/countryprofile.php>.

6. In the last few decades, the whole religious landscape of the Guatemalan society has been radically transformed. Churches and sects, mainly Protestant, have known an extraordinary expansion. This change in the religious field is a phenomenon which is found on a global scale in the Latin-American and the Caribbean societies (Garcia Ruiz, 1997). In about thirty years, Protestantism in its essentially Pentecostal current was established in SMS. Its growth is such that today approximately 50-60% of the 5,000 inhabitants of the semi-urbanized municipality center would have been converted to one of the dozen Pentecostal churches.

7. D. Freidel, L. Schele and J. Parker (2001) again taking into account the remarks of a follower of the Warao shamanism of Venezuela, underline two ways of considering the divine: one as a transcendent Creator coming from the outside, or as an immanent Creation potentially manifested everywhere. They estimate that this last pattern formed part of the basic premises of shamanism and that it consolidates the direction of belonging in the world and the cosmos (Freidel, Schele & Parker, 2001, p. 12).

8. No official statistics on migrations exist in SMS. However, local officials estimate that between 12 to 20% of the inhabitants, mainly young men, may have emigrated to the United States.

9. According to M. A. Bastenier, in 2005, the financial transactions sent by the emigrants (46% of the Guatemalan population have a family member in the United States) constituted the primary source of national income (3 billion dollars, so three times more than the exports generated by the 300,000 micro-companies in the country) (*Courrier International*, 23 to March 29, 2006, p.28).

10. According to the last census available from the National Statistics Institute of Guatemala (INE), the index of Gini on land distribution inequality hardly moved between 1979 and 2003, going from 0.848 with a light modification of 0.834. These data make Guatemala one of the most unequal countries in the world. Recalling that a perfect equality in land distribution would correspond to 0 and one perfect inequality would be equal to 1.

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