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Almost ten years since decentralization laws in Bolivia: Status quo or improvement for the lowland indigenous people? Evidences from the Tsimane' Amerindians of the Beni.

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Abstract

Decentralization laws were passed in Bolivia in 1994 under the name of "Leyes de Descentralización Administrativa y Participación Popular". Three hundred and eleven new municipalities were created upon application of these laws, which contributed to the redistribution of part of the state budget toward the regions and to the reduction of the predominant power of large municipalities. This process, however, kept apart large tracks of the population, specially indigenous people from the lowlands. There are few reports that document the effects of decentralization on lowland indigenous people. Here, we fill the gap using the Tsimane' Amerindians from the Beni department of Bolivia as a case study. The goals of this research were twofold. First, we measured how decentralization laws affected Tsimane' Amerindians. Second, we estimated the level of awareness of the Tsimane' population toward "civic" issues related to the society, decentralization, and participation in development projects in the area. We found that, in general, Tsimane' have not received much of the benefits of decentralization. Only about 50% of Tsimane' held an identity card, 48% voted, and 60% knew the name of the sub-mayor of the Tsimane' indigenous sub-municipality, recently created by a non-Tsimane' initiative and dependent on the municipality of San Borja. The general level of awareness of the population was dramatically low. Only 36% of adults knew the name of the winner of the past presidential election, or the name of the mayor of the municipality of San Borja, on which all villages depend. Tsimane' knew even less about development projects on the area or decentralization initiatives. In fact, the least known project in the area was the creation of the indigenous sub-municipality, which was known by less than 2% of people. The better known project was PRAS-Beni, a sanitation project funded by the European

Union, known by 27% of the population. Regarding decentralization *per se*, 0% of people had ever heard about decentralization and only 9% of people knew the meaning of OTB (Basic Territorial Unit), one of the core elements of the decentralization. A multivariate analysis showed that the determinants for that low level of awareness were village distance to the municipality of San Borja, as well as characteristics of informants. Thus, adults living further from town, women, people with low education, and people not engaged in wage labor had low awareness about civic issues. Results suggest that decentralization laws have largely kept the lowlands indigenous out of the political process and that a major effort need to be made to inform indigenous people about their civic rights.

Introduction

In the past decades, decentralization measures have grown in popularity and have been applied by many governments in developing countries as an antidote to central government autocratie, inefficiency, or corruption. Decentralization measures have also been tried as a way to tackle poverty. In Bolivia, the decentralization laws, called "Participación Popular y Descentralización Administrativa", were approved for first time in 1994. Decentralization laws have induced profound changes in the distribution of political power, mainly with the creation of 311 municipalities, and the redistribution of 20% of the state budget to the municipalities based on population census (**Ministerio de Desarrollo Humano, 1997**). The new repartition of funds between the regions has mainly benefited rural areas (Faguet 2004). The Popular Participation Law and the Law of administrative decentralization are found in Secretaría Nacional de Participación Popular (1994) and the way they have been first applied and the detail of their functioning is well described in Thevoz (1999).

There is a certain amount of scientific literature about decentralization, mainly focused on qualitative description of the way it works and the potential benefits it should bring. Most of that literature is interested in the political aspects of decentralization (Slater 2003; O'Neill 2003; Hiskey and Seligson 2003). However, there seem to be no consensus on whether the effects of decentralization to local populations have been positive or negative. Some scholars argue that decentralization has brought substantial benefit to local populations (Ardaya and Thevoz 2001; Faguet 2004; McNeish 2002). Others disagree, arguing that corruption has spread and local elites have entrenched with decentralization (Hiskey and Seligson 2003; Kohl 2003a; Kohl 2002). Lack of agreement could be due to the limited amount of literature, the variety of focus, and the fact that there is little empirical evidence of the effects of decentralization, which makes difficult to differentiate between actual facts and the author's own perception of the effects of decentralization. In fact, it might be too early to investigate in an unbiased manner whether decentralization laws have brought about any change. Another reason for the lack of a consensus about the benefits of decentralization is the great variation among situations reported in case studies. For instance, certain local government newly created may have benefited of the previous experience of grassroots movements, or the influence of non-governmental organizations (NGOs), while other new local governments have must likely started with no experience in the democratic process, therefore benefiting less of the new decentralization process (Andersson 2004; Kohl 2003a; Kohl 2003b; Rowland 2001).

It cannot be denied that decentralization has involved clear actions such as the increase in the investment in the health and education sectors. However, what remains to be analyzed is whether the health or education level of people in rural areas have increased in response to the investment. So far, there are several reports analyzing the impact of decentralization in highland indigenous people (Ardaya and Thevoz 2001; McNeish 2002), however, there are strictly no reports on the impact in Bolivian lowland indigenous people. The purpose of this work to start filling up this gap.

This work is important for various reasons. First, lowland indigenous people represent an important proportion of the Bolivian population, often among the poorest of the country (Censo Indígina 2001), but they have often been excluded from democratic processes. Here we look at the Tsimane', a hunter-gatherer population in the Department of Beni, as a case study of how decentralization reach indigenous people of the Bolivian lowlands. Results from that work can be used by policy makers to adjust decentralization reforms. Second, we document the topic using a micro-level research based on a deep ethnographic understanding of the reality of an indigenous group. The present report benefits from the presence of a larger study in the area, which allows to use a multivariate framework to find explanations to why indigenous remain apart from the decentralization process. Third, looking at how decentralization affects an indigenous group gives us insight at how the process itself of decentralization works at the level of a rural municipality.

On the first part of this report, we briefly document Tsimane' socio-economic characteristics, specially their ways of subsistence, and the process through which Tsimane' gained contact with the national society. This ethnographic account will help understand the importance of a decentralization process for the Tsimane'. After the ethnographic account, we present the hypotheses of the work, the methodology used, and the way data were analyzed. On the results section, we document the level of awareness of the decentralization process among the Tsimane' population. We go beyond the measurement of awareness about decentralization issues, and also explore the level of awareness of the Tsimane' population of over "civic" issues that arise from the national society such as having an identity card, or voting to the national election. In the second part of the results section, we analyze how the awareness of civic issues, including decentralization, correlates with socio-economic characteristics of subjects, such as human capital attributes, economic indices or distance to the closest town. In the discussion, we draw from ethnographic and empirical data gathered in that work, to

summarize the main reasons that explain the low level of awareness on civic issues of the population. We conclude by presenting suggestions on what would be needed to increase that level of awareness on lowland populations.

The Tsimane' and their relation with the Bolivian society

The Tsimane' are a foraging-horticulturalist group of ~8,000 people living in ~100 villages in the Amazonian lowlands of Bolivia (Censo Indigena 2001). The Tsimane' territory spreads from the foothills of the Andes to the northeast, reaching the edges of the Moxos savanna. Tsimane' villages lie over four administrative units: Territorio Indígena Tsimane' (65 villages), Territorio Indígena y Reserva de la Biosfera Pilón Lajas (25 villages), Territorio Indígena Multiétnico (five villages), and Territorio Indígena Parque Nacional Isiboro-Sécure (three villages).

Ethnographic details on the Tsimane' can be found in past (Hissink and Hahn 1952; Metraux 1948; Wegner 1931) and recent studies (Chicchón 1992; Daillant 1994; Pérez-Diez 1983; Piland 1991; Byron 2003; Ellis 1996; Huanca 1999; Reyes-García 2001). Nowadays, Tsimane' show large variation in lifestyles. Some Tsimane' in the upper rivers are nomadic, live in small communities without schools, are monolingual in Tsimane', and mostly rely on shifting cultivation, hunting, fishing, plant foraging, and barter of forest products. Close to the local towns, Tsimane' are bilingual in Tsimane' and Spanish, live in large settlements reachable by road, and are more likely to live in villages with schools. Besides subsistence agriculture and foraging, those Tsimane' also work for wages and grow rice as a cash crop (Vadez et al. 2004).

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In the late 50 years, Tsimane' have increased their contact with the Bolivian national society. Between the 1950s and the end of the 1970s, the department of Beni was influenced by new social and economic forces, the most important of which was the opening of roadways to major cities (Yucumo and San Borja). In the 1970s, the opening of the roads attracted colonist farmers and loggers to the area. The arrival of colonists and loggers changed the Tsimane' way of life in more profound ways that anything they had experienced before. Colonization affected the Tsimane' in different ways. In some cases, colonists used Tsimane' as labor for cattle ranching and for logging. In other cases, the settlement of colonists, armed with legal land tittles obtained in the capital city of La Paz, forced Tsimane' communities to move closer to rivers, away from the new roads.

The logging business has had ambiguous effects on the Tsimane'. On the positive side, logging has benefited the Tsimane' Council. In 1984, the International Tropical Timber Organization set up and funded the Proyecto Forestal Chimanes, aiming at promoting sustainable timber extraction and benefiting the indigenous population. On the negative side, companies were especially abusive of unacculturated Tsimane', and even used violence to force several families to relocate. Also, these concessions were located in areas where people were mostly illiterate but companies had made no effort to set up schools in the area. The presence of loggers on indigenous lands, especially in the Tsimane' Forest, can be considered as an accelerator of integration to market economy because loggers opened roads and gave jobs to people living in formerly isolated communities (Alvarado 1996).

The Tsimane' land has not been titled yet and there seems to be many conflicts between either farmers or cattle ranchers that claim right to the Tsimane' land. There are

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many cases of encroachment from colonists, that either use the Tsimane' territory or let their cattle graze in lands that belong to the Tsimane'. Unauthorized loggers keep on entering the Tsimane' territory in search of fine wood, without paying royalties to the Tsimane' Council. Finally, Tsimane' communities are reached by traders that deal roofing mats, made from the jatata palm and highly demanded locally. Tsimane' are often prisoner of debts to the traders, because they sell their jatata at very low prices and are induced to buy goods they usually wood not get. For all these reasons, Tsimane' are often considered second range citizens and are discriminated in the urban contexts. However, Tsimane' are in a process of integration to the national economy. Some do sell their jatata on their own. Many are trading farm products such as rice or plantain and supply the local market.

Tsimane' political awakening

The integration of the Tsimane' into the market economy during the 1980s was accompanied by their integration to the national society. During this decade there was a native ethnic and political awakening of the indigenous people of the Bolivian lowlands. For the Tsimane' this awakening was concretized by the creation of the Tsimane' Council and the alliance with other indigenous groups of Bolivia. The Tsimane' joined a political organization with other indigenous peoples from Bolivia in 1987, when the first pan-ethnic native organization in the history of Beni, called the Central de Cabildos Indigenales Moxeños, was founded. This organization, which included Moxeños, Movimas, Yuracarés, and Tsimane', was replaced two years later by the Central de Pueblos Indígenas del Beni, which grouped local organizations from those indigenous groups. In 1989 the local organization representative of the Tsimane', the Gran Consejo Tsimane', was created. Since then, the Gran Consejo Tsimane' has been affiliated with the Central de Pueblos Indígenas del Beni, which belongs to the national indigenous organization, Central de Pueblos Indígenas del Oriente Boliviano, and the international indigenous organization, Coordinadora de Organizaciones Indígenas de la Cuenca Amazónica.

Although the Tsimane' Council is the sole official Tsimane' political organization, both its representativeness and political activity are questionable. More than a decade after its creation, the leaders have not been changed, and the participation of people from the communities in the organizations' meetings is rare. Additionally, the Tsimane' Council does not take part in Bolivian national politics. For example, only a few Tsimane' participated in the March for Territory and Dignity of 1990, one of the most important political demonstrations of lowlands indigenous people of Bolivia, during which indigenous people from the lowland walked to La Paz (about 600 kilometers) asking for legal recognition to their lands (Jones 1993). As a result of indigenous pressure on the national government, the Supreme Court passed several decrees granting legal land title to indigenous populations. Although the Tsimane' had little participation in the march, they benefited from it thanks to various decrees that recognized the Tsimane' lands, and thanks to the new approach of the Bolivian government towards lowland indigenous people with laws intended to benefit them (Popular Participation Law 1994, Decentralization Law 1995, Land Tenure Law 1996).

The latest advance in the Tsimane' participation in the political stage has been the creation of a Tsimane' indigenous sub-municipality, depending on the municipality of

San Borja, one of the 311 municipalities of Bolivia. The goal of the creation of a submunicipality was to give representation of the Tsimane' Amerindians at the level of the municipality. Although this process has not been a Tsimane' initiative, but rather an initiative of a counselor of the mayor house of San Borja sympathetic to the cause of indigenous people, various Tsimane' leaders have now jumped on the band wagon. The indigenous sub-municipality was officially created in 2002, and a sub-mayor was democratically elected. However, there are two main gaps on this process. On the one side, the Tsimane' population was relatively little informed about the issues related to the creation of the sub-municipality. On the other side, Tsimane' representatives of the submunicipality lack the political clout to request their legal share of the municipal budget of San Borja. In consequence, they have no leeway to develop their own projects.

Tsimane' relation with development projects

The Tsimane' and the area they inhabit have been the focus of attention of national and international organizations promoting development and conservation. The most important conservation projects on the area have been 1) the establishment of the Pilón Lajas Biosphere Reserve-Indigenous Territory in 1992; and 2)the creation of the Reserva de Biosfera –Estación Biológica del Beni in 1996 (Miranda 1995).

There have also been several development project that have operated in the Tsimane' region. In February 1997 a project funded by the Corporación Agraria de Fomento, the Fondo Internacional de Desarrollo Agrícola, and the Bolivian and Canadian governments started in the Department of Beni. The objectives of the project, called Proyecto de Desarrollo Sostenible de los Pueblos Indígenas del Beni (PRODESIB) were

to develop management plans for the indigenous lands, train and give technical assistance to indigenous people, and promote sustainable community projects. PRODESIB started several projects in Tsimane' communities, but by the end of 2000 the international organizations funding PRODESIB failed to continue supporting it because of internal financial problems, and the project ended. In 2001, a sanitation project funded by the European Union was initiated in the Tsimane' area. The project, called Proyecto rural de agua y saneamiento del Beni, PRAS-Beni, was oriented to the construction of letrines and water wells, and affected many communities near the local town of San Borja. More recently, the PEN project (Proyecto Educativo de Nucleo) was proposed by the National Ministry of Education, in the framework of the reform in the educative system. This project focus on improving the quality of the education in rural area by providing material and training support to teachers, and by applying education methods used elsewhere. On 2003, there was another initiative from the State, this time oriented to give a birth certificate to all children. This project, that also reached the Tsimane', was called Provecto de ampliación del certificado de Nacimiento – Produrpa-. Altogether, development projects have raised expectations for improvements in their quality of life. Projects dealing with education and decentralization have contributed to their empowerment.

Hypotheses

Here, we formulate various hypotheses related to how aware are the Tsimane' people of civic issues, including decentralization, and how this awareness links to outcomes of the Tsimane' livelihood. <u>Hypothesis 1.</u> Tsimane' geographically more integrated to the municipality of San Borja will be more aware of decentralization and other civic issues.

Geographic integration to the municipality of San Borja was proxied by the distance in kilometers from the villages of residency to the town of San Borja, and by the frequency of visits to that town. By decentralization and other civic issues we refer to a variety of proxies that include knowledge about decentralization *per se*, but also awareness of other processes arising from the national society, such as the name of local and national political leaders, or the most important development projects targeting the Tsimane' in the past years. Since decentralization is the process of transferring power from the central government to the municipalities, we expect that the effect of decentralization on the indigenous population will be linked to the degree of integration of the communities to that municipality. We hypothesize that people living at farther distances from San Borja would be less likely to know about decentralization and civic issues.

<u>Hypothesis 2.</u> Young men will have a major awareness over decentralization and other civic issues than old people and women.

Here we expect that Tsimane' women, and/or old people living more traditionally, would know less about decentralization than men and/or young people.

<u>Hypothesis 3.</u> Tsimane' with more education level will be more aware of decentralization and other civic issues.

Education was proxied by a set of variables to capture individual human capital, among which the capacity to read, write, and speak the national language, Spanish. Since some of the important aspects of decentralization or other civic issues, such as having an

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identity card or a birth certificate, involve being able to read, write, or speak Spanish, it is reasonable to think that people with no or little ability in the national language would have little interest in the decentralization measures.

<u>Hypothesis 4.</u> Tsimane' with a higher income from cash will have higher awareness of decentralization and other civic issues.

Income from cash was proxied as the sum of wage labor and the sale of forest and farm products in the two weeks prior to the interview. This hypothesis was based on the fact that people that have entered the market economy through either sale or wage labor might have a higher interest to formalize their situation regarding the national society, such as having a birth certificate. They will also be more exposed to knowledge of the non-Tsimane' society such as the name of the mayor of San Borja.

Methods

Research lasted 18 months (May 2002-November 2003) and included measures from adults of 13 Tsimane' villages in the Maniqui River basin. Data for this research was collected in a longitudinal study on the effects of the introduction of a new crop on the general welfare of indigenous people. We first collected the ethnographic information on the Tsimane' described before. From this information, we selected different aspects that could proxy awareness of decentralization and civic issues. Then, we developed, tested, and applied a questionnaire to a large number of subjects in 13 different communities. We put a lot of emphasis on the quantitative part of the study because an empirical method allow us to estimate the individual level of awareness of decentralization and civic issues, as well as explore the possible correlations with socioeconomic variables that characterize the subjects.

Setting and sample: We carried out surveys in 13 Tsimane' villages. To select villages, we used village distance from the town of San Borja, the regional commercial center (population ~19,000) as a proxy for integration to the market. The furthest villages were located at about one day canoeing upriver from the main local town, while the closest were at about one hour walking . We surveyed the entire adult (18 years of age and older) population of the villages, for a total of about 500 adults. Last census in Bolivia came up with a Tsimane' population of about 8,000 members. Households are composed on average by 6 members, among which about three adults (Reyes-García 2001), so the 500 adults surveyed represented about 12% of the entire Tsimane' adult population.

Survey and variables:

<u>Baseline survey.</u> At the beginning of the study we collected a demographic census of individuals and households participating on the study. We collected individual level information on age, sex, and frequency of visits to San Borja (nearest town) of the informant. Since most Tsimane' did not know their exact age in years, the age variable contains measurement errors. On the same census, we also collected information on modern forms of human capital (i.e., schooling and ability to speak the national language) as proxies for acculturation. We defined schooling as the maximum school grade attained by the informant. We collected information on the informant's fluency in spoken Spanish, as measured by the interviewer during the survey. During the initial phase of the study we also collected information on distance of the household to the village school in minutes walking as a proxy for transmission of the awareness of decentralization and other civic issues. Since community meeting are usually held at the school, people living far from school are less likely to know about the meeting (because they don't hear the call for meeting), or simply because it is too far to go (they have no light to go at night, it takes too long, etc.). We also measured the village-to-town distance in kilometers as a proxy for integration to the national society.

Quarterly surveys. We measured individual economy through the year to take into account seasonal variation in sources of income. We measured a total of five times two different variables that proxy the individual economy, cash income and household wealth. We asked informants about income from wage, sale, and barter of products during the 15 days before the day of the interview. We also include household wealth of 13 modern physical assets (e.g., bike) as a proxy for a household's long-term integration to the market, and household wealth of nine traditional physical assets (e.g. bows).

Survey on awareness of decentralization and other civic issues. The survey focused on a set of variables that proxy individual's knowledge about issues related to decentralization, such as "do you know the name of the current mayor?" (Annex 1). We also measured people's knowledge of past development projects, or other civic processes arising from the national society such as having any kind of identification cards or certificates.

Data analysis: To get an unique estimated of individual cash income, we averaged the quarterly measurements of different sources of cash income (sale and barter of farm and

forest products, and wage labor) considering all quarters in which the person participated. Since we had many of the proxies for the awareness of decentralization and other civic issues, we run a principal component analysis to determine a principle vector of decentralization, made up as a linear combination of a sub-set of proxies for the awareness. Here, we took some variables measuring the degree of integration to the national society (*knowvoto, Alcalde, SubAlca*), variables measuring the awareness of development projects (*Prodesib, Produr, Pen*), and variables to measure the awareness of decentralization itself (*OTB, Ppopu*). We used the first vector of the principal component for further analysis.

Data were analyzed using bivariate and multivariate techniques. We first analyzed differences in the variable that measures awareness depending on distance to the municipality of San Borja. In the multivariate model, we explored the correlations between the principal vector of awareness and explanatory variables accounting for demographic, socio-economic and human capital attributes of informants. We proceed in various stages. First we tested the effect of geographic integration on the principal vector of awareness (Hypothesis #1), using the three proxies for geographic integration. In the following model, we kept the variables from the model that came out significant at the 90% level, and tested the effects of demographic variables, age and sex of informant, on the principle vector of awareness (Hypothesis #2). In a third model, again we kept the variable significant at the 90% level and tested the effect of human capital variables, the ability to speak Spanish and the number of school grades achieved, on the principle vector of awareness (Hypothesis #3). Finally, we tested hypothesis #4 by adding the group of variables that proxied for integration to the market. Unless it is indicated

otherwise, we discuss values associated with decentralization at the 90% confidence level or above.

Results

Descriptive statistics: Table 1 summarizes the descriptive statistics of the explanatory variables used. The mean age of informants was of 35.2 years (sd=15.1; n=348), the distribution between sexes being balanced (49% men and 51% women). The frequency of traveling to San Borja ranged from 0 to 4 (0= never; 1=rarely; 2=sometimes (once a year); 3=frequently (once a month); 4=lived more than three months), and mean value of informants was 2.4 (sd =0.8; n=481). The settlement pattern of the communities studied was nucleated and people usually lived within close distance to the school. The average distance between a household and the school was 10.2 minutes walking (sd=11.2; n=202). Informants had an average of about 1.8 years of schooling (sd=2.2; n=481). Thirty percent of the sample reported speaking the national language, Spanish (n=480). The average household wealth of modern and traditional assets over the five quarters of study was 1,642 Bolivianos of modern wealth and 821 Bolivianos of traditional wealth (sd=1201 and sd=516; n=218; US \$ 1=7.5 Bolivianos). On a two week period, an average Tsimane' adult earned 34.1 Bs from selling farm and forest products in cash (sd=78.6; n=483), 10.4 Bs from bartering farm and forest products (sd=14.4; n=483), and 35.0 Bs from wage labor (sd=83.5; n=483).

Villages varied in their distance to town, with a mean distance of 26.2 kilometers (sd=15.8). Villages were naturally grouped in two clusters. The first group included six villages settled close to the town of San Borja, between 6 and 15 km (mean 10.3 km;

sd=2.9). The second group included seven villages settled far from the market town at a distance that ranged between 33 and 50 km (mean 39.7 km; sd=5.2). We used those two groups for further analysis.

INSERT TABLE 1 ABOUT HERE

Summary of decentralization variables and differences due to distance to San **Borja:** Tsimane' adult generally had fairly low percentage of awareness on many issues related to the national society. About 34% of adults surveyed had no identity card, and from the rest, 49% had a national identity card, and 17% had an alternative carnet called "RUN" (Registro Unico Nacional). On about 61% of the surveyed households at least one child benefited from the Seguro Universal Materno-Infantil (SUMI), a health program implemented by the government of Sanchez de Lozada covering medical expenses for kids under five years. Only about 30% of the households had at least one child holding a birth certificate (Table 2). Although 48% of Tsimane' interviewed voted during the last presidential election (August 2002), only 36% of them knew the name of the winner of the same election (still president at the moment of the interview). Even a lower percentage (26%) knew the name of the municipality on which their village depends, or the name of the mayor of the local town (18%). Contrary, 80% of the Tsimane' interviewed knew the name of their representative on the Tsimane' council, and 60% knew who was the name of the indigenous sub-mayor (Table 2).

Regarding the level of awareness about development projects recently occurring in the area, the number of people aware of them was dramatically low, ranging from 1% to 27% depending on the project. Pras-Beni is the most recent project in the area and has concerned five out of the 13 communities in which we work, which explain the relatively high number of people in the sample aware of the project (27%). Prodesib has been working in the area for over ten years, but only 20% of the people interviewed knew about them. Only 18% of the people interviewed knew about the PEN project that deal with the education reform. Finally, it was interesting to notice that only 1.5% of people knew the name of the NGO in charge of preparing the project of the creation of the indigenous sub-municipality (Table 2).

Finally, regarding the level of awareness about the decentralization process, less than 10% had ever heard about specific aspects of decentralization. Only 6% of the people knew what a TCO was. Surprisingly, 53% percent of people knew who was the community representative of the OTB, although only 9% knew what is an OTB. Two percent of people knew what is the POA –Plan Operativo Anual-, the activity plan of the municipality where projects are proposed (Table 2). Regarding decentralization, none of the persons on our sample had ever heard of it under such a name, and only 4% of people in the sample had heard about Popular Participation Laws.

INSERT TABLE 2 ABOUT HERE

We further split the sample into people living close from San Borja and people living far, assuming that distance would be an additional impediment to be aware of processes of the national society. Surprisingly, Tsimane' living far from San Borja held an identity card with more frequency (54%) than Tsimane' living close to San Borja (43%) (T-test P<0.01). The proportion of people holding no identity card, or holding a RUN, did not vary with the distance to San Borja. The percentage of household having at least one child in the household holding a SUMI did not vary with the distance to San Borja. On the contrary, households living farther from San Borja had less frequently a child holding a birth certificate. The higher percentage of people holding a card in remote settlements was consistent with a higher frequency of voting at the last election. But contrary, Tsimane' living far from San Borja knew less often the name of the winner of the election than people living close (33% against 42%, P<0.03). Regarding the awareness of local authority, people living far also knew less frequently who was the mayor of San Borja or the sub-mayor of the indigenous municipality (15% against 23%, P<0.01 and 51% against 73%, P<0.001). There was no difference in the knowledge of the municipality on which the village depends (Table 2).

Regarding the level of awareness of projects, there was no differences between distance of settlement for the awareness of Prodesib or Cidebeni. By contrast, people living far knew less frequently about Pras-Beni and Produrpa (19% against 39%, P<0.001 and 5% against 10%, P<0.02). Surprisingly, people living far knew more about the project related to the educational reform than people living close to San Borja (22% against 13%, P<0.01) (Table 2).

Regarding the level of awareness of process linked to decentralization, there was no difference depending on the distance of the village in the knowledge of what is a TCO, or in whether people had heard about the Popular Participation and Decentralization Laws. By contrast, people living far from the local town knew less about what is an OTB, who is the village representative of the OTB, and what is a POA (6% against 13%, P<0.01; 40% against 71%, P<0.001; 1% against 4%, P<0.01) (Table 2).

Multivariate results: Since we had many variables to proxy for the awareness of the population about decentralization and other civic issues, we ran a principal component analysis of various of these proxies to come up with a principal vector that we called vector of awareness. To run this principal component analysis, we discarded variables a) with very low values, b) showing little variation among individuals, and c) not correlating with a higher awareness of the civic processes. We chose variables belonging to the three categories of variables in Table 2 (integration to the society, awareness of development projects, and decentralization *per se*). The variables selected were: *knowvoto, alcalde, subalca, munici, prodesib, prasbeni, otb, ppopu*. All the variable had strong positive loading on the first principal vector. The first eigenvalue was 2.84 and explained about 36% of the variation, and could be considered as a good vector for awareness of civic processes. The vector of awareness varied between –1.67 and 6.04. We then used the score of each individual on the principal vector in regression models with socio-demographic explanatory variables.

Hypothesis 1. Decentralization and geographic attributes

We first tested a group of variables that proxied for the geographic integration of the households to the municipality of San Borja. Results show that adults living at farther distances from San Borja were less aware of civic issues than people living closer (P<0.008) (Table 3). People living 10 km further had 0.157 lower score in the vector of

awareness. We also found that people traveling more frequently to San Borja, were more aware of civic issues than people traveling at low frequency (P<0.004). Finally, we found that living further from the school correlated with a lower awareness of civic issues (P<0.0001). Any minute-walking further from the school correlated with a 0.033 lower score of awareness on the principal vector (Table 3).

INSERT TABLE 3 ABOUT HERE

Hypothesis 2. Decentralization and demographic attributes

In this regression, we added the variables that proxy for demographic attributes of informants, i.e. gender and age. Results showed that being a male correlated with higher scores of awareness (P<0.0001). Male had on average a 1.35 higher score than women on the principal vector of awareness (Table 4). Older people had lower scores of awareness, one more year of age correlated with a 0.018 lower score of awareness (P<0.003). Adding the group of demographic variables to the variables proxying for geographic integration increased the coefficient of distance to the municipality of San Borja, and adults living one more km further had now a 0.028 lower score on the vector of awareness (Table 4). By contrast, the frequency of traveling was no longer a significant determinant of awareness in the regression including geographic and demographic variables. The variable proxying the distance from the house to the school was unchanged.

INSERT TABLE 4 ABOUT HERE

Hypothesis 3. Decentralization and Human capital

In the next model, we added the variable proxying for the human capital of adults. Regression results showed that adults having completed more school grades had higher score on the principal vector of awareness (P<0.0001). Having completed one more school grade correlated with a 0.29 higher score on the principal vector (Table 5). The ability to speak the national language, Spanish, was also correlated with a higher score on the principal vector (P<0.003), and people that spoke Spanish had a 0.62 higher score of awareness than people that did not speak the national language. Adding the group of variables proxying for the human capital had no influence on the significance of geographic variables. There was a slight decrease in the coefficient of distance to the school and adults living one more minute away from school had a 0.017 lower score on the vector of awareness. Adding the group of variables proxying for the human capital decrease the coefficient of the relation between gender and awareness, and being a male was now correlated with a 0.77 higher score of awareness than being a women. The variable age was no longer significant.

INSERT TABLE 5 ABOUT HERE

Hypothesis 4. Decentralization and integration to the market.

Finally, we added the group of variables that proxy for the economic integration of household to the national economy. We used various variables of income that proxy for a short term integration to the market economy, and two variables of wealth that proxy for long term integration to the market economy. We found a strong positive correlation between the individual income from wage labor and awareness (P<0.0001). Adults earning 100 more Bs from wage labor had a 0.54 higher score of awareness (Table 6). We found also that having a higher income for the sale of products in cash correlated with a higher level of awareness (P<0.05), however the coefficient was weaker than with individual wage labor, and a 100 Bs increase in the sale of products correlated with a 0.18 higher score in the score of awareness. There was no significant relation between the individual income through bartering products and awareness. Using the proxy for long term integration to the market, we found that the wealth of modern assets such as bikes or rifles, correlated with higher scores of awareness (P<0.004). A 1000Bs higher wealth in modern assets correlated with a 0.22 higher scores in the vector of awareness (Table 6). By contrast, traditional wealth (assets such as bows or canoes) had no significant effect on the awareness level of an individual.

Adding the group of variable proxying for the integration to the market had little influence on the previous three groups of variables. The coefficient for distance slightly increased and adults living one km further correlated with a 0.036 lower score in the vector of awareness. The frequency of traveling to San Borja was significant in that regression but the relation was weak (Table 6), and the coefficient for the distance of the houses to the village school remained similar. The coefficient of being a male remained significant although it decreased slightly. Being a male correlated with 0.61 lower scores of awareness (Table 6). Age remained non significant. Finally, the coefficient for the number of school grades achieved remained significant but decreased. Adults with one

more school grade had 0.21 higher scores in the vector of awareness (Table 6). The ability of speaking Spanish had no longer any significant effect on the level of awareness.

INSERT TABLE 6 ABOUT HERE

Discussion

Results from this work show that many Tsimane' are not integrated in the national society, and that most of them have not received much of the benefits of decentralization. We proxied integration to the national society by asking about tenure of identity card, benefiting from national health system and other. We found that less than half of the Tsimane' interviewed had this type of services. We also found that the general level of awareness of civic and social issues of the Tsimane' population was dramatically low, and that Tsimane' knew even less about development projects on the area. Knowledge about decentralization laws or initiatives was almost non-existent. A multivariate analysis showed that the determinants for that low level of awareness were village distance to the municipality of San Borja, as well as characteristics of informants. Thus, adults living further from town, women, people with low education, and people not engaged in wage labor had low awareness about civic issues. Results suggest that decentralization laws have largely kept the lowlands indigenous out of the political process and that a major effort need to be made to inform indigenous people about their civic rights.

The empirical data gathered for that work illustrate several important gaps on how the decentralization process reach population in the lowland. Bellow we discuss some of the main findings of this work:

1.- Participation in the democratic process doesn't seem to be a conscious political choice. Our data show that a higher percentage of people in remote settlements holds an identity card and voted on the last presidential election, however a lower percentage of people living in those settlements knew the name of the winner of the election in which they voted. Ethnographic data made over the years of presence in Tsimane' communities show that there exists pressures on indigenous people to force them to vote for a given political party. In practice, political campaigners go to the remote communities before the elections. Tsimane' receive token and alcohol, from whichever political party. One day before the election representative from the political parties bring the Tsimane' to town, and force them to vote for the party they represent. Tsimane' coming this way from far settlements are somehow parked before the election, and sometimes registered for an identity card. This practice is more common in isolated communities, which explains why people living there hold more frequently an identity card and higher participation in the elections.

2.- So called participatory processes do not always reach population. We found that most Tsimane' did not know the name of the NGO in charge of preparing the project of the creation of a sub-municipality for the indigenous people. This organization was using participatory approaches, and supposedly holding meetings to capture the needs of the

indigenous populations. Again, ethnographic data can help explain the unawareness of people of the process. The NGO assigned to capture the needs of the Tsimane' population tried to meet its goal by calling representatives of the communities to local meetings near the town of San Borja. Those meetings implied a trip to the village where the meeting was being hold, and knowledge of Spanish. Those two facts conditioned the participation of the many Tsimane' that did not had the material means to travel and who did not speak Spanish, reducing then not only the participation in meetings, but also the level of interest in the whole process.

3.- Tsimane' don't know about the institutional mechanisms to implement

decentralization, therefore they can not use them to their benefit. Our data show that virtually no Tsimane´ know about the POA (the municipality occupation plan), which includes the many projects that the municipality has promised to fully or partially fund during a year. As a poor rural population lacking health and education services, a better knowledge about the municipality process to have a project funded would probably greatly improve the investment towards the indigenous.

In clonclusion, we found that information of decentralization and other civic issues do not reach all the population to the same extend, which could be considered a failure in the process. We found that more educated young men, people living closer to the town, and people living closer to the school in villages know more about the different initiatives born from the decentralization laws. We also found that there is a correlation between integration to the market economy through wage labor and awareness of political processes. All together our findings suggest that the process of informing people about decentralization laws have only reached some strata of the population, leaving behind other (women, old people, people living far from towns, etc.). So, people having more education, or living closer to San Borja and having more contact with the exterior society know more about decentralization than many others. Part of the success of decentralization lays in having large proportion of the population about the process to avoid the entrenchment of power in the hand of a minority of people knowledgeable about the process.

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Variable	Definition	Obs	Mean	SD	Min	Max		
Demographic								
Age	Age of informant, in years	348	35.2	15.1	15	80		
Male	Percentage of males	483	49	50	0	1		
	Geographic integration							
Distance	Distance from the community to San Borja	219	27.3	15.3	6	48		
Travel to SB	Frequency of traveling to San Borja (0 to 4)	481	2.4	0.8	0	4		
Time to school	Minutes walking to the community school	202	10.2	11.2	0	55		
	Human capital							
School grade	Level of schooling attained by subject, in grades	481	1.8	2.2	0	13		
Spanish	Oral ability in speaking Spanish	480	0.30	0.46	0	1		
•	Market integration							
Modern wealth	Value in Bs of 13 modern items owned by the household	218	1642	1201	107	7704		
Traditional wealth	Value in Bs of 9 traditional items owned by the household	\$ 218	821	516	36	3183		
Sale	Individual income from cash sale	e 483	34.1	78.6	0	1152		
Barter	of products in past two weeks Individual income from barter of products in past two weeks	483	10.4	14.4	0	143		
Wage	Individual income from wage labor in past two weeks	483	35.0	83.5	0	733		

Table 1: Descriptive statistics of the explanatory variables

Table 2. Mean percentages of social awareness, and T-test of difference between the values of people living close and far from San Borja.

	Description of variable	Mean	Close	Far	T-test
Measures of	f the level of integration of people to the national soc	iety.			
Carnet	Do you have an identity card?	49±50	43±49	54±50	0.01
No-Carnet	Percentage of people with no identity card	34±47	38±48	30±46	ns
RUN	Percentage of people with a RUN	17±38	19±39	15±36	ns
Certificado	Has anyone a birth certificate in the household?	30±46	40±49	23±42	0.003
Sumi	Does any kid hold a health card in the household?	61±49	59±49	63±48	ns
Voto	Did subject vote in last elections?	48±50	39±49	56±50	0.001
KnowVoto	Did you know who won the last elections?	36±48	42±49	33±47	0.03
Alcalde	What is the name of the mayor of San Borja?	18±38	23±42	15±35	0.01
SubAlca	What is the name of the indigenous sub-mayor?	60±49	73±44	51±50	0.001
PresiGCT	What is the name of the Tsimane' council's leader?	80±40	80±40	79±40	ns
Munici	On which municipality depends your community?	26±44	27±45	24±43	ns
Measures of	f the level of information on development projects in	the area.			
Prodesib	What is PRODESIB?	20±40	21±41	19±39	ns
Prasbeni	What is PRAS-Beni?	27±45	39±49	19±39	0.001
Cidebeni	What is CIDEBENI?	014±12	1±10	2±13	ns
Produr	What is PRODURPA?	7±26	10±30	5±22	0.02
Pen	What is PEN?	18±39	13±34	22±42	0.01
Measures of	f the level of information on political processes relate	ed to decen	tralizatio	on.	
ТСО	Do you know what is a TCO?	6±23	7±26	5±21	ns
OTB	Do you know what is a OTB?	9±29	13±34	6±24	0.01
RepresOTB	Who is the representative of the OTB in this village?	53±50	71±45	40±49	0.001
POA	What is a POA?	2±13	4±18	1±6	0.01
PPopu	Have you heard about Popular Participation Laws?	4±19	4±19	4±19	ns
Descent	Have you heard about Decentralization?	0±0	0±0	0±0	ns

Note. Prodesib: Proyecto de Desarrollo de los Indígenas del Beni; Produrpa: Proyecto de ampliación del certificado de Nacimiento; Pen: Proyecto educativo de nucleo; Cidebeni: Central Indígena del Beni; Pras-Beni: Proyecto rural de agua y saneamiento del Beni; TCO: Territorio comunitario de Origen; OTB: Organización territorial de base; POA: Plan operativo anual; ns: not significant. **Table 3.** Multivariate regression between the principal vector of awareness to civic issues and variables proxying for geographic integration of adults (Obs = 449; R-squared = 0.0700).

Pc	Coef.	Std.	Err.	t	P>t	95%
Distance	0157098	.0058543	-2.68	0.008	0272154	0042043
TravelSB	.314152	.109419	2.87	0.004	.0991098	.5291941
TimeSchool	0256377	.0071458	-3.59	0.000	0396815	0115939
_cons	0328292	.3961413	-0.08	0.934	8113693	.7457109

Table 4. Multivariate regression between the principal vector of awareness to civic issues and variables proxying for geographic integration and demographic attributes of adults (Obs = 320; R-squared = 0.2274)

Pc	Coef.	Std.	t.	Р	Interval	[95%
Distance	0284015	.0069155	-4.11	0.000	0420081	014795
TravelSB	.097945	.1336417	0.73	0.464	1650014	.3608914
TimeSchool	0232094	.0078612	-2.95	0.003	0386766	0077422
Male	1.349596	.1910435	7.06	0.000	.9737085	1.725483
Age	0184258	.0061958	-2.97	0.003	0306164	0062353
_cons	.9014167	.4958839	1.82	0.070	0742584	1.877092

Table 5. Multivariate regression between the principal vector of awareness to civic issues and the variables proxying for geographic integration and demographic attributes of adults (Obs = 319; R-squared = 0.3922).

Pc	Coef.	Std.	Err.	t	P>t	[95%
Distance	031295	.0062379	-5.02	0.000	0435688	0190211
TravelSB	085834	.1218713	-0.70	0.482	3256305	.1539626
TimeSchool	0173007	.0070462	-2.46	0.015	0311651	0034364
Male	.77713	.1882349	4.13	0.000	.406755	1.147505
Age	.0031417	.0060839	0.52	0.606	0088291	.0151125
Education	.2949921	.0397219	7.43	0.000	.2168344	.3731498
Spanish	.620929	.2098108	2.96	0.003	.2081009	1.033757
_cons	.1047983	.455053	0.23	0.818	7905736	1.00017

Pcawareness	Coef.	Std.	Err.	t	P> t	[95%
Distanc	0363563	.0060679	-5.99	0.000	0482963	0244162
TravelSB	1936016	.1168109	-1.66	0.098	4234558	.0362525
TimeSchool	0146033	.0070264	-2.08	0.039	0284295	0007771
Male	.6099722	.1917937	3.18	0.002	.2325708	.9873735
Age	0022284	.0059315	-0.38	0.707	0139	.0094432
Education	.210842	.0429017	4.91	0.000	.1264223	.2952617
Spanish	.2920964	.2053108	1.42	0.156	1119033	.696096
Indwage	.005426	.001094	4.96	0.000	.0032733	.0075787
Indsale	.0018463	.0009368	1.97	0.050	3.02e-06	.0036897
Indbarter	0014082	.0058079	-0.24	0.809	0128366	.0100202
Hhtradwealth	0001427	.0001924	-0.74	0.459	0005213	.0002358
Hhmodwealth	.0002247	.0000771	2.91	0.004	.0000729	.0003765
_cons	.4495497	.4451723	1.01	0.313	4264366	1.325536

Table 6. Multivariate regression between the principal vector of awareness to civic issues and the variables proxying for geographic integration, and demographic attributes, human capital, and variables proxying for market integration (Obs = 319; R-squared = 0.4658).

Variable	Description	Subjid
Madidaa da	integración individual a la conjudad nacional	
Carnet	integración individual a la sociedad nacional Tiene carné? (no=0; CI=1; Run=2)	
Carner Certificado	Algun miembro del hogar tiene certificado de nacimiento? (Si=1; no=0)	
<u>Sumi</u>	Algun niño del hogar tiene su carnet de Sumi? (Si=1; no=0)	
Sum Voto	Votó en las últimas elecciones? (si=1; no=0)	
voio KnowVoto	Quién fue elegido en las últimas elecciones presidenciales? (Gonzalo	
ΜΙΟ₩ ΥΟΙΟ	Sánchez de Lozada) (1=bien; 0=mal)	
Alcalde	Cómo se llama el alcalde de San Borja? (Ilda Rea) (1=bien; 0=mal)	
SubAlca	Cómo se llama el sub-alcalde indígena Tsimane'? (Asensio Lero) (1=bien;	
SubAicu	0=mal)	
PresiGCT	Cómo se llama el presidente del Gran Consejo Tsimane'? (Jorge Añez)	
Trestoc1	(1=bien; 0=mal)	
Munici	A qué Municipio pertenece su comunidad? (San Borja) (1=bien; 0=mal)	
Munici	A que Município perchece su contunidad: (San Dolja) (1–bien, 0–inal)	
Medidas sol	pre el nivel de información de los proyectos de desarrollo en el área	-
Prodesib	Qué es PRODESIB? (1=bien; 0=mal)	
Prasbeni	Qué es PRAS-Beni? (1=bien; 0=mal)	
Cidebeni	Qué es CIDEBENI? (1=bien; 0=mal)	
Produr	Qué es PRODURPA? (1=bien; 0=mal)	
Pen	Qué es el PEN? (1=bien; 0=mal)	
descentraliz		con la
ТСО	Qué es una TCO? (1=bien; 0=mal)	
OTB	Qué es una OTB? (1=bien; 0=mal)	
RepresOTB		
POA	Qué es un POA? (1=bien; 0=mal)	
PPopu	Qué es la participación popular? (Texto)	
Descent	Qué es la descentralización? (Texto)	

Annex 1. Individual level survey on decentralization