Challenges of Communicating Indigenous Knowledge within Guarani-Kaiowa and Terena Communities: A Brazilian Case Study

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Abstract
The Mato Grosso do Sul State in Brazil is home to 48 Indian reservations. An estimated population of 35,000 indigenous people from 11 ethnic groups lived in these areas. The purpose of this study was to determine the challenges of communicating local agricultural knowledge between generations within two indigenous communities in Dourados, MS, Brazil. The objectives were to 1) identify communication processes that older populations use in passing agricultural knowledge to younger generations and 2) identify strategies that could help sustain agricultural knowledge within Caiowa and Terena Communities. Twelve respondents were selected using the snow-ball approach. Although respondents in both of the Guarani-Kaiowa and Terena communities value the importance of transferring agricultural knowledge from one generation to another, there is no systematic communication channel in place that could reinforce this indigenous knowledge transfer. Formal education in the village tends to focus on Portuguese language skills and mathematics and there is little emphasis on indigenous agricultural practices. In addition, older generation adults suggest that it is becoming more difficult to transfer agricultural knowledge to younger generations. There is a need to conserve indigenous knowledge but also to educate Guarani-Kaiowas and Terena Indians on new agricultural techniques thus the quality of life can be improved.

Keywords: Indigenous, communication, agriculture, Brazil, intergenerational
Background

When Europeans first arrived in Brazil it was estimated that there were more that a 1000
different communities with somewhere between two and four million people. Today, the
estimated population is less than 400,000 individuals speaking 180 different languages. Until the
1970’s, the population of indigenous people was decreasing in Brazil through movement to cities,
enculturation, and population decline. However, in the past 25 years the population of indigenous
peoples is on the increase and many leaders and individuals are concerned about over crowding
on “collected lands” and the loss of land through family division of land holdings.

These concerns also point out the loss of culture, erosion of traditional values and ways
of knowing that have long existed within the present community. In most Indian communities,
people are proud of the role elders have played, and continue to play. But in an increasingly
complex society, with Indian families and communities experiencing increasing outside
pressures and changes, it has become more difficult to sustain the traditional familial and
community roles that Indian elders play (Baldridge, 2001). Also, at risk is the specific
agricultural production knowledge that can be passed on from one generation to the next about
how to grow native plants that will sustain the population (Socioambiental, 2006).

The Mato Grosso do Sul State in Brazil is home to 48 Indian reservations. An estimated
population of 35,000 indigenous people from 11 ethnic groups lived in these areas (Nunes, 2006).
The Indian reservation located in Dourados within the Mato Grosso do Sul State is the largest
reservation in Brazil. This reservation was established 1917 and it is located only 10 miles from
the city of Dourados. There were approximately fifteen thousand Indians from five ethnic groups
sharing 8782 acres (Nunes, 2006; Graciano et al., 2006).

The average family was composed of six individuals and there was roughly .58 acres
available per person upon which they live and grow crops. According to Graciano et al. (2006)
and Nunes (2006) Indians living under these conditions were living below basic human standards.
Some of the social problems that could be observed were a lack of space, housing, income, and
leisure activities. These social problems were associated with the increasing amount of
alcoholism, drug abuse, and low reading skills within the reservation. Most of these problems
have been worsening, and the gap between non-indigenous and indigenous populations seemed
to be widening (International Fund for Agricultural Development [IFAD], 2006).

In order to alleviate some of the social problems such as child mortality within the Indian
reservation, the local and federal government put intervention strategies in place. For example,
every other week, basic canned food packages were distributed to the population. The local
university has also developed a program to teach Indians how to cultivate their own garden in
order to boost nutrition and consumption of fibers (Graciano et al., 2006). In addition, various
studies have been conducted that discussed the living conditions, nutrition aspects, health,
indigenous education, and the cultural loss of indigenous people (Nunes, 2006; Graciano et al.,
2006; Reimão, Souza & Gaudioso, 1999; Jackson 1995). However little is known regarding
transfer of knowledge and change processes among the indigenous population in this reservation.

Theoretical Framework

In an attempt to build a theoretical model on how information and knowledge flows within
indigenous peoples, Mundy (1993) proposed a framework regarding the ways indigenous
knowledge is commonly communicated. In order to comprehend the knowledge-communication
interface the author set apart two major communication systems the exogenous and the
indigenous. The two communication systems may be explained better through the use of
examples. Mundy (in press) and Mundy & Compton (1995) provided examples of exogenous communication systems such as extension systems and mass media communication channels. On the other hand, an indigenous communication system example could be a casual discussion among farmers over a new rice variety during a social activity.

Another facet of the framework proposed by Mundy (in press) is the type of knowledge that is being communicated. Exogenous knowledge transfer, such as learning about a new variety of corn, may occur through exogenous and/or indigenous channels. At the same time, indigenous knowledge, such as the name of a plant that can relieve pain, may occur through exogenous and/or indigenous communications systems. The framework can be observed below:

Table 1

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<tr>
<th>Communication Channels</th>
<th>Type of Knowledge</th>
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<tr>
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<td>Exogenous</td>
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<td>Indigenous</td>
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<td>Exogenous</td>
<td>Technology transfer</td>
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<td>Indigenous knowledge-based development</td>
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<td>Diffusion</td>
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<td>Cultural continuity and change</td>
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Mundy and Compton (1995) and Mphande (2004) noted that the communication of indigenous knowledge through indigenous communication channels is vital to the continuity of cultures. Cultural reproduction when associated with intergenerational relationships reinforces the value of wisdom and appreciation for the elderly (Mphande, 2004). Mundy and Lloyd-Laney (1992) expressed the importance of utilizing indigenous communication channels as a way to promote change. Notwithstanding, indigenous knowledge channels potentially provided high credibility to information and could be used to collect and diffuse information in development programs.

Little research has been conducted by western researchers regarding cultural continuity and change through indigenous communication systems (Mundy, in press). Comprehending how ICT (Information Communication Technology) empowers indigenous knowledge systems and how indigenous communication occurs may promote more successful developmental interventions (Unwin, in press).

Studies have concentrated their attention to the spread of exogenous innovations within indigenous communities rather than locally generated information. This represents a bias toward externally developed information that may or may not be beneficial to local communities (Mundy & Lloyd-Laney, 1992).

Adjave and Aborampah (2004) stated that culture and social networks were important factors to societal stability and continuity in any given society. They found that among the Akan tribe in Ghana, solidarity among the extended family members acted as bond within individuals; and elders were the major channel of cultural perpetuation. Elders tended to hold a vital important role in terms of economy, politics, and status. They were also responsible for teaching
younger adults. “Elders were viewed as the embodiment of the past, as well as members with the largest store of memories from the past” (Adjave & Aborampah, p. 24, 2004).

The roles and values of continuity are being challenged by technological advances and the increasing pace of change (Unwin, in press). In some countries economically developed in Asia, elders have experienced an erosion of support and respect. The main forces driving those changes are modern education, development programs, and urbanization. These forces are transforming traditional societal units such as tribes and families into more individualistic units (Chadha, 2004). However in some areas of India, the urbanization and modernization processes have not been able to replace traditional family values of respect for the elders and their values in regards to rites and rituals. While westernization brought changes in the way people dress, it did not completely changed their value system (Chadha, 2004).

**Purpose and Objectives**

The purpose of this study was to determine the challenges of communicating local agricultural knowledge between generations within two indigenous communities in Dourados, MS, Brazil. The objectives were to 1) identify communication processes that older populations use in passing agricultural knowledge to younger generations and 2) identify strategies that could help sustain agricultural knowledge within Caiowa and Terena Communities.

**Methods**

In order to identify the communication processes and strategies that could help sustain the agricultural knowledge within the Guarani-Kaiowa and Terena communities, an interview guide was developed. This qualitative interviewing process ensured that the same basic lines of inquiry were pursued but it also provided the interviewer freedom to build a conversation within a particular question (Patton, 1990). During June 2006, Indian communities, located at Mato Grosso do Sul state in Brazil, were interviewed by a native Portuguese speaker. The study was authorized by the Brazilian National Foundation for Indians-FUNAI. Questions were sequenced in a way to increase the level of comfort of the interviewees. Twelve respondents were selected using the snow-ball approach (Patton, 1990). The length of the interviews ranged from half an hour to one hour and 30 minutes. Interviews were recorded using a digital voice recorder; data was transcribed and translated into English by a native Portuguese speaker.

**Results**

*Objective 1 - identify communication processes that older populations use in transferring agricultural knowledge to younger generations*

The majority of the individuals interviewed had one to four years of formal education. Most of this education was in public schools to develop language (reading and writing) and basic education skills. All of the individuals that were interviewed indicated that it is important to pass agricultural knowledge from the older generation to the younger generation. The older generations teach children how to plant, cultivate, and to use the moon cycles to increase agricultural production using traditional knowledge. Some parents have also been effective in communicating how to intercrop compatible plants so that the plants nurture and protect each other from insects and diseases.

One individual stated, “…my grandfather taught my father, and my parents passed on to us and what we have in our minds will not be forgotten then we will pass on to our kids… it is like a story that nobody will forget…”
In some situations the younger generation is not paying attention as they find many opportunities to work away from the indigenous community. Another individual commented that “…it is important to learn about agriculture because some of the females are getting married when they are 12-13 years of age and often their husbands don’t make enough money to feed the family…” A couple of respondents indicated that alcohol can also be a problem for many Indian men.

A few of the participants indicated that they learned how to pray and to sing to enhance the growth of the plants. Another indicated that she encourages her children to work in the fields by making a game of the fieldwork. She limits the time in the field by setting small goals and sets challenges to provide a motivation for the children. The participants projected a harmony that exists between families working in their gardens and plants that they are growing to feed their communities.

Nearly all of the participants in the study indicated the importance of maintaining their traditional culture through agriculture. One responded said, “…our folks have forgotten our culture in the last ten years. In the past we would eat what we had and today we eat bread and coffee. All young Indians want to eat this food. The old people would eat chipa (corn cake), pirekai (baked cassava), baked potatoes, baked fish, corn flour, and other cultural dishes. These are the things that we can grow on our land not sugar or butter…”

Another responded said, “…there are some Indians that know how to pray guaxire (pray for plants to grow), cutera (pray for plants to grow healthier), and some know how to sing…others know how to heal but there are no herbs to make this medicine…”

**Objective 2 - identify strategies that could help sustain agricultural knowledge within Guarani-Kaiowa and Terena Communities**

Several of the respondents indicated that there are important concerns about maintaining indigenous cultural traditions into the future. There is no mechanism within the indigenous community to store or to maintain their cultural heritage other than passing stories from one generation to the next. Others indicated that there is an interest in obtaining new information that could be blended with traditional knowledge to improve agricultural production. Some individuals had benefited from formal education that taught improved agricultural practices from the white culture. Two individuals mentioned that the government does not systematically support adult education in the indigenous community.

It was also mentioned that when help arrives it typically comes prepackaged and predetermined how it should be implemented within the local community. According to some of the respondents, the results are always the same – there is a failure to use the technology within the local community because there is no local ownership.

**Conclusions**

Although respondents in both of the Guarani-Kaiowa and Terena communities value the importance of transferring agricultural knowledge from one generation to another, there is no systematic communication channel in place that could reinforce this indigenous knowledge transfer. Formal education in the village tends to focus on Portuguese language skills and mathematics, and there is little emphasis on indigenous agricultural practices. The average number of years of formal education is low, which may influence their ability to communicate with Portuguese speakers.
Older generation adults suggest that it is becoming more difficult to transfer agricultural knowledge to younger generations. Younger generations are commuting to the city of Dourados in order to find jobs, and they show less interest for indigenous practices. Also, younger Indians are incorporating western’s food habits and they are decreasing their interest for traditional dishes. Elders still retain knowledge on Indigenous agricultural practices, culinary, rituals, and traditional medicine. However there is lack of natural resources to make possible for them to teach.

Elders are an important figure in both communities; it is their responsibility to transfer most of the agricultural indigenous knowledge for the next generation. Most members in both communities are concerned about maintaining indigenous cultural traditions for future generations. Mainly because they see their culture as an important part of their identity. The average marriage age is decreasing and young Indians are becoming mothers earlier. Guarani-Kaiowa and Terena populations are increasing at a higher pace.

In both communities, there is an interest in obtaining new agricultural information that could be blended with traditional knowledge. Western agricultural practices have benefited some individuals in the reservation. In addition, prepackaged educational interventions are not very effective in transferring agricultural knowledge and technology with these populations.

Implications
The disappearance of indigenous communication systems and knowledge may be explained by the implementation of western education systems and mass media interference. In an era of constant change, mass media communications, and the fast pace of life, studies like this explores how indigenous knowledge is striving to be diffused. This study identifies communication strategies and educational reforms that could take place in order to maintain cultural continuity at Guarani-Kaiowas and Terena communities.

In order to help these communities, NGOs and governmental projects should promote initiatives to boost local ownership, thus the diffusion of western and indigenous agricultural information could be facilitated. Participatory strategies such as “Participatory Approaches to Communication for Development” could be used to motivate locals’ involvement and increase ownership. Because there is little area available within the reservation per family, western agricultural techniques could be taught to increase food production and food safety among the Guarani-Kaiowas and Terenas.

Education, an important factor that promotes changes, could be transformed within the Dourados Indian reservation. The educational curriculum at the village school could be modified in order to accommodate agricultural indigenous knowledge. Since most of the education is focused on “western” information, it is hard for these communities to change and to use the knowledge that is available. There is a conflict on how to use the western information within the reservation. By blending the two types of agricultural knowledge in the educational system, it could increase the continuity of indigenous knowledge and change within the communities. There is a need to conserve indigenous knowledge but also to educate Guarani-Kaiowas and Terena Indians on new agricultural techniques thus their quality of life can be improved.

With no system in place to transfer information from previous generations, it is hard to maintain this information for future generations. Future initiatives should promote ways to secure traditional knowledge. For instance, in the Amazon basin area, the creation of the Anaconda biannual Film Festival revitalized indigenous knowledge by blending them with technology (IFAD, 2006). The festival promoted the creation of indigenous videos by indigenous
film-makers. Initiatives like this could build a system in place to incorporate indigenous knowledge into the formal communication channels. Projects could be initiated by NGOs, governmental sponsored initiatives, and the local community to maintain this collection of information.

Regarding the “Framework of the interface between knowledge and communication channels” proposed by Mundy and Compton (1995, p.119), cultural continuity and change occurs when indigenous knowledge is communicated through indigenous systems. Using a digital communication data base is consistent with maintaining indigenous knowledge systems. This is perhaps a more authentic way of preserving knowledge rather than other methods. For Guarani-Kaiowa and Terena communities, elders play a major role in communicating and educating younger generations on indigenous agricultural techniques. Mundy and Lloyd-Laney (1992) expressed the importance of utilizing indigenous communication channels as a way to promote change. Indigenous knowledge channels potentially provide high credibility to information and could be used to collect and diffuse information in development programs. Developmental projects that reinforce the relationship between elders and the other generations could potentially be more effective for the Guarani-Kaiowa and Terena communities.

Given the array of technology that exists today, it would be helpful for these communities to digitally record indigenous knowledge. Devices such as digital videos, sounds, and photographs could improve the quality and the type of information been secured for future generations. The preservation of Guarani-Kaiowa and Terena’ knowledge is essential not only for perpetuating their cultural heritage, but also to provide “westerns” different perspectives on cultures and peoples.

References


