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# Contemporary Rural Social Work

## *Special Issue*

Volume 8, Number 1 (2016)

**Peggy Pittman-Munke**  
*Editor-in-Chief*

CRSW is proud to present this issue dedicated to international social work. This is an important compendium of papers for a number of reasons. Guest editors, Dheeshana Jayasundara and Randall C. Nedegaard, were able to obtain submissions from a number of countries that are not usually represented in the literature available to social workers in the western world. Their thoughtful introduction to the issue underscores many of the differences between social work internationally and that in the United States. Globally, social work practice focuses on macro issues of importance to the community in contrast with the United States where social work practice tends to be conceptualized as micro practice, with macro issues viewed as an addition to, rather than the heart of practice. The authors also bring a different world view to their work and to their research. This difference in world view also reflects the differences between the way that social workers from collectivist perspectives view social work practice as compared with the way social workers from individualistic perspectives view social work practice. There is much to be learned from the perspectives of the global practitioners represented in this issue and lessons to be applied in both practice and teaching in rural areas.

Télez Cabrera in his article, *Building the Health Capability Set in a Purépecha Community to Assess Health Interventions*, contrasts and explores the dimensions that could be included in the health capability set to assess health interventions in Cuanajo, Mexico. He expands on previous work and uses in-depth semi-structured interviews to explore these dimensions. Cuanajo is a semirural indigenous Purépecha community located in western Mexico. The final objective of the study is to generate measures of outcomes in economic evaluations of health interventions to be carried out in this community, and the work presented in the article reinforces the dimensions that could be employed in the final step. The dimensions are: 1) physical, taking into account activities of daily living enabled by different health statuses; 2) mental, in the form of how positive feelings contribute to achieving health functioning; 3) social, considering how a minimal social life takes into account how relations with partners, family members, and friends provide love and support; 4) health agency, incorporating health knowledge and knowledge about how traditional medicine can affect or contribute to achieving health; 5) material conditions, which include housing facilities and monetary resources; and 6) community, how social pressure and security affect health functioning. The results can then be taken to the community to develop health related quality of life indicators. This model moves away from understanding health only in biomedical terms such as we commonly see in the United States to a much more holistic understanding of health. There is much in this article that could inform rural social workers trying to understand health issues in the communities that they serve. The article could also be useful as a framework for the study of human behavior along the dimensions posed in the study. The more macro focus of the dimensions

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could be useful in moving students away from a narrow conceptualization of human development and human behavior.

Marcia Mikulak in her article *Colonial Subjugation and Human Rights Abuses: Twenty-First Century Violations against Brazil's Rural Indigenous Xukuru Nation* illustrates social work practice writ large within Brazil's Indigenous population, the Xukurus, as they fight for the return of their ancestral lands and against the human rights abuses perpetuated against them. This article is an example of social work as social justice practice. As a case study it offers practitioners and students a way to see how well documented social science research can in part ameliorate the injustices of colonial history, and demonstrates the potential for developing new paradigms of justice for a people for whom too often justice has been denied. For students of policy practice, the article offers a perspective that demonstrates the need for persistence, timing and gaining strong allies, as well as for celebrating each small milestone as a step toward ultimate success.

Arias et al discuss the *Impact of Education on Poverty Reduction in Costa Rica: A Regional and Urban-Rural Analysis* in their article which relates the relationship between levels of education and poverty for different planning regions in Costa Rico and for both urban and rural areas. Their findings come as no surprise; in both urban and rural areas, using the methodology of Unsatisfied Basic Needs, poverty is reduced by a substantial amount along multiple dimensions through the completion of even secondary education. The results are useful for social workers to consider. Policy practice, such as working to achieve higher levels of public education, has demonstrated results in terms of social mobility and reduction of poverty in Costa Rica and other developing countries. Material in this article could be used to help plan community campaigns for increasing educational levels in rural communities with low levels of education, low social mobility, and high poverty as well as to persuade legislators to fund these efforts, and communities to incentivize people to achieve this goal.

Kumar et al present the devastating impact of flood in their article *Impact of Floods on Rural Populations and Strategies for Mitigation: A Case Study of Darbhanga District, Bihar State, India*. Floods are one of the most disastrous and unpredictable acts of nature. The impact of human life is extreme. Rural areas are more severely impacted than urban areas in part because of poverty, limited infrastructures and access to resources and health care services. Floods not only damage property and infrastructure and but further decrease access to health care and social services. The primary author's experienced floods as an inhabitant of a flooded community. Drawn from the primary author's master's thesis, the article outlines the impact of floods in the rural areas of Bihar and points out the continuous marginalization and exclusion of flood-affected communities. This paper raises awareness of the issue and calls for global support to advocate for more effective flood mitigation strategies. Many of the issues raised in this paper are similar to the issues raised by Hurricane Katrina in Louisiana and neighboring states, as well as elsewhere internationally. Ideas for mitigation presented in this paper would be useful in macro practice classes dealing with disaster planning and in human behavior classes to help students and practitioners understand the effects of natural disasters, particularly floods, on people living in rural areas.

In her article *Ideas for Capacity Building and Educational Empowerment of Female Children in Rural Butaleja, Uganda: Applying the Central Human Capability Approach* de Silva discusses the use of the Capability Approach to empower female children. This article discusses how this approach can be effectively utilized within the setting of a small rural village in Uganda,

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Africa to empower female children to create a valuable life that affects positive social change. Colonization left a devastating blow to the socioeconomic conditions among many ethnic communities in Uganda. However, Uganda's political outlays and social constructs further deepened the inequity gap between female and male children. This article has valuable information for rural social workers who are attempting to help rural children create a life for themselves that will also result in community change. Policy classes could use this article as a basis for analyzing rural communities in terms of resources and opportunities for success for different groups of children and in terms of strategies to bring about change. The article is an excellent resource for demonstrating how theory/models such as the Capacity Approach can be utilized to design practice interventions.

The book reviews are also illuminating and closely related to the theme of the special issue. Sujei Vega, author of the ethnography, *Latino Heartland: Of Borders and Belonging in the Midwest*, is reviewed by Annah Bender. Vega, herself an immigrant from Mexico, describes issues dealing with life situations as Latino and Latina Hoosiers. She vividly brings to life the current immigration and deportation issues and illuminates the difficulties for Latinos living in the Midwest as their numbers and presence increase in the midst of the economic and cultural backlash against Latinos. The current political climate both nationally and internationally brings increased salience to this issue. Vega's work also illuminates the complexity of Midwest rurality and many differences from the rural Southwest and its attitudes towards immigrants and immigration.

Pugh and Cheers book, *Rural Social Work: An International Perspective*, reviewed by Peter Kindle, attempts to survey the research on social work in rural areas in economically developed nations. However, it relies heavily on English-speaking countries as it emphasizes rural diversity and models of practice in rural settings with the hope of developing rural practitioners. There is an emphasis on the social rather than the demographic understanding of rurality and this work contributes little that is new to an understanding of rural social work. However, it is well worth reading for the examples of community development and social work practice in other English speaking countries. In contrast with other articles, Pugh and Cheers present a perspective on rural social work that highlights obstacles to overcome rather than a sense of possibility.

The final book reviewed, edited by Wayne Caldwell and reviewed by Kala Chakradhar, *Planning for Rural Resilience: Coping with Climate Change and Energy Futures*, is a compendium of ten chapters, of which all but the opening chapter are based on preparing rural communities near Ontario Canada for impending issues arising from climate change and peak oil. The authors of the chapters focus on innovative efforts to avert the consequences of both. These innovative efforts could be utilized by social workers in rural American areas that face similar issues. Rural planners will find this book useful as well will rural social workers who work in areas of the United States where similar issues are of concern.

In summary, this issue of the journal goes well beyond its intention, to present a broad discussion of rural social work globally. The articles are not only varied and excellent, but offer ideas from other perspectives to inform both practice and teaching in rural areas and to modify the United States perspective that is largely focused on micro practice to the broader macro perspective so important for success in rural social work practice. Enjoy this issue; I know I did.

Peg Munke

# Contemporary Rural Social Work

## *Special Issue*

Volume 8 Number 1 (2016)

### Guest Editors' Introduction

The practice of social work in North America is significantly different than its practice in other areas of the world. In the United States, it is estimated that clinical social workers make up 38-48% of the entire mental health workforce, leading all other professions such as psychologists, psychiatrists, marriage and family therapists, and advanced-practice psychiatric nurse practitioners (Heisler & Bagalman, 2015). A National Association of Social Workers workforce study found that 68% of all social workers claim that the focus of their practice is on the micro level (Whitaker & Arrington, 2008). This is simply not the reality of social work in a majority of countries. Micro-level social work practice requires a substantial amount of resources as well as a large, well-organized workforce that is seen as effective and legitimate by funding sources, such as insurance companies and governmental bodies. International social work is far more macro-focused, relying on the creative and innovative problem solving skills of its workers despite very limited resources. This is especially true when we consider international social work in a rural context.

Since much can be learned from social workers in other parts of the world, the purpose of this special issue is to highlight some of the social issues faced by rural communities in the global south and how they are being addressed. It is our hope that the journal's readership, particularly any social workers who may be interested in working internationally, will benefit from learning about the dynamics and challenges of rural contexts in the global south. This special issue was open to authors from all fields beyond the profession of social work to reflect the reality of social service work in these countries.

Social workers in the global north may have a difficult time contextualizing what is viewed as "social work practice" in the global south. It is important to note that generally social work varies from region to region and country to country (Pawar, 2014), especially when it comes to rural social work. But, it is possible to identify a few general trends in social work outside the global north. One major trend is the fight to gain legitimacy and identity as a field (Nikku, 2010; Pawar, 2014). This is the case even when the field itself has existed for many years, such as in Sri Lanka and India. Many times what is termed "social work practice" is carried out by graduates from alternative fields, such as political science and sociology. "Social work" is defined loosely to reflect any community or social development practice.

Even when the field itself is more or less established, workers seem to be involved in urban social issues. Many of the social work schools in the global south are in urban areas, with only a small number now starting in rural communities (Pawar, 2014). As Rwomire (2011) notes,

There seems to be a general recognition that social work has, in the past, treated only the most overt problems of urban destitution and maladjustment and that the

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profession has done little to promote the welfare of the majority of the population, especially where the vulnerable and rural people are concerned (para 39).

A third barrier preventing the establishment of the social work field as a legitimate profession, especially with a rural emphasis, is that many of the social work schools in the global south were developed with strong assistance or influence by the west and are only recognized as legitimate when they follow western models. Many practitioners are struggling to indigenize their field and develop models of practice appropriate to their countries (Chandraratna, 2008; Midgley, 1981, Nikku, 2010; Pawar, 2014; Rehmatullah, 2002; Singh, Gumz, & Crawley, 2011). Social work theories and intervention models from the western perspective are simply not feasible in most of these contexts. For instance, community engagement in rural contexts or at local levels in the global south requires more complex models than those available in the west. These models must address structural poverty, provision of basic necessities, and direct political engagement to combat corrupt, unstable, or ineffective political structures at national and local levels.

Additionally, as previously mentioned, many of the social work schools and the social work field generally are functioning without adequate resources. For example, there are very few sufficiently trained social workers to provide academic education and field supervision. Social work associations are scarce and often inadequate, and there is a general lack of associational infrastructure (Nikku, 2010). In addition, the remoteness, distance, and scant resources of rural social work contribute to the difficulty in social work becoming established as an organized and recognized field.

This all means that social work practice at local levels is conducted by both social work and non-social work professionals. In rural contexts, non-social work professionals tend to be more numerous, and community engagement will come from practitioners who are trained in different fields. The authors in this special issue reflect such professional diversity.

This special issue sheds light on some of the conditions found in rural global communities, from environmental issues, to socioeconomic disparities, to human rights concerns. The articles highlight the destitute conditions in the global south and how these conditions are viewed or addressed from human development and human rights perspectives with direct political engagement and community development approaches. This has strong implications for international rural social work, leaving the readership, hopefully, with a better understanding of how “social work practice” is conducted in the global south. Yet, it also begs the question, as Pawar (2014), very articulately posed:

The utter deprived conditions of local communities, oppression of people by community power structures, examples of community practice with political engagement and impactful community practice by other than professional social workers make one wonder, why are social workers and their profession so silent and inactive, notwithstanding values, principles, and commitment enshrined in their code of ethics? (p. 9)

Social work is a challenging profession no matter where it is practiced. Global social workers, and other professionals who work in overwhelming and adverse conditions to alleviate suffering by fighting oppression and injustice, can serve as an inspiration to us all.

Dheeshana Jayasundara  
Randall C. Nedegaard  
Guest Editors

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## **Impact of Education on Poverty Reduction in Costa Rica: A Regional and Urban-Rural Analysis**

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**Abstract.** In this article, we analyze the relationship between levels of education and poverty for the different planning regions and also according to urban and rural areas. For the purposes of the study, we use the methodology of Unsatisfied Basic Needs (UBN) to measure poverty in a multidimensional way: access to decent shelter, access to health, access to knowledge, and access to other goods and services (consumption capacity). Based on empirical evidence that uses data from the Population Census of 2011, we conclude that achieving greater levels of education helps people from rural and urban areas and people living in the different planning regions of Costa Rica to escape poverty. Using the methodology of propensity score matching, we show that people who finish secondary education reduce poor shelter between 8.0% and 33.0%, reduce low levels of knowledge between 26.0% and 44.0%, and reduce poor consumption between 12.0% and 30.0%. This is also consistent with the results of finishing secondary education in urban and rural areas since completing secondary education in urban areas would have a significant impact on reducing poverty of shelter in about 36.0%, poverty of access to knowledge in 48.0%, and in 22.0% regarding access to other goods and services (consumption capacity), while completing secondary education in rural areas would reduce poverty of shelter in 18.0%, poverty related to access to knowledge in 30.0%, and poverty in consumption capacity in 32.0%.

**Keywords:** human development, capability approach, education, poverty, social work, basic needs, propensity score matching, planning regions, rural areas, urban areas

The capabilities approach has revolutionized the theory and practice of development, demonstrating that quality of life should be measured not only by material wealth, but also by the degree of freedom that can be experienced. According to the capabilities approach, an individual or household is poor when they are unable to reach certain achievements considered basic to social functioning. In this sense, the "achievements" become measurement thresholds: being able to communicate through reading and writing, living a long and healthy life, having access to goods and services which provide some comfort. These are so-called "basic skills" and they are considered to be necessary for an individual to function and be integrated into society (Sen, 2001). This theoretical approach has played a very important role in contemporary social work because it has been very useful, not only in approaching social intervention with new analytical tools, but also by providing a transdisciplinary approach that enables a more integrated understanding of social problems such as poverty, social exclusion and inequality in Costa Rica (Moya de Lozano, 2008).

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The mechanisms that maintain and perpetuate poverty and social exclusion operate at various levels. In homes, the levels of education and income of one generation influence the human development of the next, as well as the aspirations and autonomy that people have. On the other hand, governments, especially in less developed countries, have historically reinforced poverty and exclusion through asymmetric tax structures, poor regulatory capacities of the state, concentration and centralization of public and social policy in urban areas, institutions that discriminate and reproduce the differences between population groups, poor transparency, clientelism, corruption and weak public commitment to public action (CEPAL, 2009).

Differences in access to education and quality of education are of fundamental importance in explaining the differences in development between countries (Hanushek, 2013) and income inequality between individuals (Autor, 2014; Checchi, 2008). The education received both in terms of quantity and quality, affects wages throughout an individual's working life. In addition, more educated individuals have higher rates of employability. Therefore, education becomes the key factor in explaining the differences in wage income. Thus, access to education must be seen as a right that not only implies progress toward its enforceability to all persons without discrimination, but also as part of the context of other social rights, in particular, the right to health and gainful employment which are strongly linked. Education, in addition to contributing to improving key factors of economic development and distribution of opportunities for social wellbeing, enables the construction of citizenship, promotes democratic values, and ultimately, strengthens social cohesion. The mechanism of the transmission of intergenerational inequalities has shifted to secondary education and towards higher education. It is estimated that the completion of secondary education is a basic condition (or minimum educational capital) to access jobs that allow people stay out of poverty during their working lives (Arias, Sanchez & Sanchez, 2011).

Under the capability approach, education is conceived as a crucial basic capacity to reduce poverty and social exclusion in the medium and long term. However, there are barriers of various kinds that exclude large segments of the population from formal education. These include territorial or geographical barriers, which are reflected in the spatial distribution of resources and educational infrastructure. These tend to be highly concentrated in urban centers. In this regard, the farther a population is from the main centers of economic agglomeration, the more they will suffer from infrastructure problems and greater distances impeding access to primary and secondary education. This urban-rural divide and spatial inequalities become structural factors that adversely affect the low literacy levels and lack of other important basic needs of rural population. As it has been stated by Pugh and Cheers (2010), "...in many places the most pressing welfare priorities for rural populations require interventions directed towards more fundamentals needs: for clear water, satisfactory housing, basic health care and education" (p. 6). In this direction, Muñoz Franco (2007), using the capability approach in social work intervention, argues the importance of designing and implementing public social policies able to guarantee greater levels of human development by improving a better access to public health and education.

The recognition of the persistence of regional inequalities and the differences in quantity and quality between urban and rural areas in accessing formal education in Costa Rica has motivated our study to determine the impact of investments in public education on poverty reduction in rural and urban areas as well as for the different regions that make up the country. Most of these regions, with the exception of the Great Metropolitan Area, are considered to be rural. Preliminary results of our empirical research demonstrate that improving access to the public

education system and higher levels of education reduces poverty levels in both urban and rural areas. These results can be used by decision makers in the design of public policy for the allocation of educational investment, taking into consideration geographic criteria that would allow populations that are at a disadvantage to access educational resources. This is particularly important to break the vicious circle of poverty and social exclusion and the asymmetric development between the urban and rural, which has geographic, generational (age), ethnic and racial connotations.

In analyzing the impact of education on poverty, it should be considered that people with higher incomes are able to access higher levels of education compared with the deciles of the population with lower incomes. Therefore, the distribution of education levels among the population is not a random event; if an estimator that does not consider this situation is used, the results to be obtained would be biased.

To solve this problem, a semi-parametric approach based on the methodology of Propensity Score Matching (PSM) is used. With this methodology, poverty levels are compared in the different planning regions of Costa Rica for segments of the population with a certain level of education compared to others with similar characteristics, but with a lower educational level. This aims to determine whether a higher level of education helps reduce poverty levels in each of the dimensions of poverty using the method of Unsatisfied Basic Needs (UBN). The relevance of this approach is that it allows us to empirically demonstrate the impact that higher levels of schooling have on reducing poverty. Application of PSM contributes methodologically in approaching the problem under study in a manner that has not been done in Costa Rica, namely, measuring the impact of education on poverty in the different regions and in urban and rural areas.

Although the relationship between education and poverty is a subject of great interest in the development of public policies with economic, social and political implications, empirical studies are scarce, particularly in determining whether it is possible to verify a causal link between variables. The present study seeks to contribute to the discussion and to determine empirically the impact of education on poverty in the planning regions of Costa Rica. The analysis is also made to assess the impact in urban and rural areas, since rural areas have historically maintained high levels of poverty incidence. The differences in impact of completing different levels of education in urban and rural areas provides a relevant indicator of the persistence of asymmetries between these areas in the allocation, accessibility, and quality of education, and are highly concentrated in urban areas (Khatti, Riley & Kane, 1997). It is also accepted that improving the levels of literacy is one of the key factors to reduce poverty incidence and create capabilities and social capital at the household level, as well as at the community level. This can also be crucial for rural development and the social welfare of rural population (Falk & Kilpatrick, 2000).

For the purposes of the study, we used the method of unmet basic needs (UBN): adequate shelter, health, knowledge, and other goods and services (capacity consumption) from the complete database of the Census of Population and Housing 2011. Through the application known as the "Propensity Score Matching" method, individuals with similar characteristics are compared, with the difference that some have a higher educational level than others, and the level of poverty at which they live is analyzed (differentiating by type of UBN). In this way, it is possible to establish whether individuals with more education have a lower incidence of poverty, or whether, on the contrary, there is not a relation of causation between educational levels and poverty levels.

Figure 1 (Appendix A) shows that poverty has a direct relationship to location and space. As we study areas further away from the Greater Metropolitan Area, we find that poverty levels rise in Costa Rica. The study of the UBN is an important way to shed light on this relationship; it is also an important way to identify the differences in access to basic needs in urban and rural areas of Costa Rica. In the Great Metropolitan Area, poverty levels range between less than 18% up to 27%. This is relevant given that no other area (mostly rural) has a poverty percentage of less than 18%. With this said, those areas that present the highest poverty rates in the country are also the furthest away from urban areas. This is illustrated by those areas that range from 38% to 50% and from 50% to 57%.

### **Distribution of Regions in Costa Rica**

Costa Rica is divided into seven planning regions (see Figure 2, Appendix A). This regional distribution was created in 1975 by the Ministry of Planning and Economic Policy (MIDEPLAN) using physical, geographical, social and economic criteria. Currently, the most important region in terms of population density and economic agglomeration is the Great Metropolitan Area (GAM) which accounts for 52% of the population of the country (2.2 million) in a geographical area of around 4% of the entire territory Costa Rica. The GAM is the largest urban area of the country with 95% of people living in this region in urban areas (65% of the urban population of Costa Rica is concentrated in the GAM). The remaining 6 regions are mostly rural, with low population densities and less than 500 thousand inhabitants in each of them. They are characterized by farming, agriculture, tourism-related services and commercial activities for local consumption.

### **Propensity Score Matching Method**

The Propensity Score Matching (PSM) method is used to compare two samples with similar characteristics but with the difference that one has received a specific treatment and the other has not. Therefore, the methodology is useful for assessing the impact of certain programs or policies that affect different socioeconomic groups in society. Lane, Yen To, Kyna, and Henson (2012) highlight the importance that the implementation of this methodology can have in education economics. For example, PSM has been used for applications as diverse as assessing the impact of education on wage levels and poverty issues, as well as in testing whether the public or private nature of school affects the academic performance of students. PSM has also been used to estimate the impact of investment in educational infrastructure on the development of rural areas.

On this topic, Fan (2012) departs from the premise that graduates have a higher salary levels than non-graduates and uses the PSM to quantify the gap. In order to do this, he selects two samples with similar characteristics, that is, individuals who possess the same skills but differ in that one sample has a university education and the other sample does not. When these two samples are compared, we find that university graduates have a higher wage level, although these wage levels are lower than expected. PSM methodology has also been used in studies for different countries in Latin America. Specifically, Ordaz (2009) discusses the importance of investment in education in rural areas of Mexico. He concludes that this type of investment has a positive effect as a mechanism to reduce the poverty levels in nutrition, capabilities and patrimony. Also, Newman et al. (2002) use the PSM to estimate the impact of small investments in infrastructure in rural areas of Bolivia. They compare the effects of investment in education, health, and the water supply among areas that received or did not receive these types of investments. The results

conclude that there are benefits for the population of rural areas that receive these investments, with the greatest benefits coming from investments in health and the water supply.

In other studies, such as Verner (2004), using *probit* models with data from Brazil, it is determined that education is the most important factor for poverty reduction. According to the author, if the educational level is higher, then the probability of being below the poverty line is lower. The results of this study conclude that with a full secondary education, the probability of being poor is four times lower than with only primary education being completed. However, the possibility of living in conditions of poverty is six times lower with a university education than with having only completed primary school.

Meanwhile, Appleton (2001) examines the relationship between education and poverty in Uganda in the nineties. In this study the empirical evidence shows that education contributes to reducing poverty. At the national level, poverty in Uganda decreased during the period between 1992 and 2000 and that the reduction was greater in households where the heads of the household had higher educational levels.

Other studies show that the resources allocated to education contribute to economic growth and poverty reduction (Jung & Thorbecke, 2003; Tanzi & Chu, 1998), and improve the distribution of income (Bourguignon, Fournier & Gurgand, 1998; Cortes, 2001; Legovini, Bouillon & Lustig, 2001). For example, Heckman and Masterov (2007) find that it is important to invest in young children born in unfavorable conditions through programs that improve human capital in order to break the generational cycles of poverty and inequality.

For the particular case of Costa Rica, Sánchez (2014) uses the PSM method in determining the impact of education on poverty in urban and rural areas in Costa Rica. She states that completing secondary education has a positive impact on poverty reduction in both urban and rural areas, although to a lesser extent in the latter. One aspect influencing the lower impact of completing secondary education on reducing poverty in rural areas has to do with a specialization in agricultural activities that requires unskilled labor and, therefore, is characterized by low levels of wages.

On the other hand, Rojas (2013) uses the pseudo-panel technique to estimate the returns on education in Costa Rica. With this methodological approach, the author reduces bias "skill" because of the correlation between the level of education and certain unobservable characteristics of the individual. The author finds that the returns on education increase as the sample that is used includes older people. Similarly, we find that the income of younger cohorts is higher than the income of older cohorts, once the experience and economic fluctuations are controlled. The author concludes that: a) the differences in income between generations are explained by the different levels of education, and b) short-term fluctuations in growth rates of GDP mostly affect those households and individuals with lower levels of education.

## **Data and Methodology**

The data used is from the 2011 Census of Population and Housing of the National Institute of Statistics and Census of Costa Rica (INEC - abbreviation in Spanish). The census contains information on household characteristics, and information on social and demographic variables.

The advantage of using census data is that it allows for an analysis with an in-depth geographical breakdown, which is not possible with household surveys (Feres & Mancero, 2001).

The UBN method identifies households and household members who fail to satisfy a set of needs considered essential by welfare levels accepted as universal. These households are considered to be in critical situations of need and their characterization is very useful in the design, implementation and evaluation of public policies aimed at reducing poverty caused by such needs. Through the use of census data, it is possible to express UBN with abundant detail (PNUD, 2014).

The UBN method defines a number of dimensions, and within each dimension, a number of components are evaluated to determine levels of critical gaps that households may have. For the establishment of indicators regarding universality, geographical breakdown and its relationship to income, standard steps are followed. The procedure for estimation begins with defining four dimensions, also known as macro-necessities. These dimensions include: a) access to adequate shelter, b) access to health or healthy living, c) access to knowledge, and d) access to other goods and services. Within each dimension components are defined, except in access to goods and services where there is only one component. Justification and the components of each macro-necessity are shown below.

### **Access to Adequate Shelter**

Access to adequate or quality housing is crucial for household members to have protection from environmental risks, quality interaction, and the enablement of individual development. To measure this dimension, three components are taken into account: housing quality, overcrowding and access to electricity. The quality component is measured by housing type and the condition and materials of a household. The component of overcrowding in homes is defined as more than two people per bedroom, affecting the coexistence in family and opportunities for individual development. The third component refers to the absence of electric lighting inside the house.

### **Access to Health or Healthy Living**

The health of people depends, among other things, on the sanitary conditions in which they live and access to drinking water. Homes must have the right conditions so that members can grow in a healthy environment. The quality of water is taken into account in order to meet the needs of food, hygiene and excreta disposal.

### **Access to Knowledge**

This is a minimum requirement in order for people to achieve a productive and social life; in this regard it is considered a basic need. To quantify the shortage of needs in access to knowledge, two components were considered: the first is school attendance and the second refers to educational underachievement for the population between 7-17 years of age. Thus, those households with at least one member between 7-17 years of age who did not attend primary or secondary education are considered to have a shortage of need in access to knowledge. This is the same if one or more household members are attending school but with interruptions or delays of two or more years.

## Access to Other Goods and Services

This dimension is not aimed to capture a particular need; instead, it is aimed to reflect the available potential of household resources to acquire goods and consumer services in order to meet basic needs. Because there are needs that cannot be measured with census information (clothing, food, transportation, etc.), an estimate is intended to be established through this indicator. For this dimension components are not defined, but the variables used to measure this deficiency are: age and education of the head of the household, the presence and education of regular wage-earners in the household, and the number of dependents.

Once the UBN method was determined as the most appropriate for the purposes of our research to establish the relationship between education levels and poverty in the various planning regions of Costa Rica, we focused on defining the age range of the population to be considered in the study, which was restricted to the population of working age, that is, older than 12 years of age, and those older than 25 years of age who were not heads of households. The decision to not include heads of households was made in order to avoid problems of multi-collinearity in the estimates, since the education of household heads is a relevant variable to explain the educational levels of the other household members.

Also, because the analysis is done for different planning regions of the country, the following variables were generated, based on the Census 2011 database for each region separately: a) no schooling or incomplete primary (takes the value of 1 if the person is illiterate or has at most the fifth grade of primary school), b) complete primary (takes the value of 1 if the individual has completed six years of primary school), c) secondary incomplete (takes the value of 1 if the person has completed up to the fourth year of academic secondary school and up to the fifth year secondary technical school), d) complete secondary (takes the value of 1 if the person has completed up to the fifth year of academic secondary school or the sixth year secondary technical school), and e) some college (takes the value of 1 if the person has completed a year of technical college or college).

For each case, a model *probit* (the model for each region is estimated separately) was used with two specifications in order to obtain statistically robust results. Also, a number of control variables that may influence the decision to have complete primary, secondary and/or university education as highest level of education were used.

In the first specification the following variables were used: a) education of the head of household, b) age, c) household size measured by the number of members, d) marital status (takes the value of 1 if married or cohabiting), e) the physical state of the housing (takes the value of 1 if the house has a dirt floor or if the walls are disposable), f) access to sewage or a septic tank (takes the value of 1 if the household has one of the two), g) the urban variable (takes the value of 1 if the individual lives in urban areas) and h) an interactive variable: the product of age and sex (takes the value of 1 if the individual is male).

In the second specification, the variable of the head of household's schooling was removed and the product of the head of household's schooling and the number of women in it was included as a variable. In addition, the number of children under 12 in households was included. It must be assessed whether each case and specification meets the balance property.

In order to assess the impact of education on poverty, it is necessary to know how the levels of this indicator differ in each of the planning regions when one education level is scaled. Since it is not possible to observe a person with differing levels of education, the counterfactual structure initially proposed by Rubin (1974), was used. With this structure, the effects of "treatment" on a certain group of people are analyzed to have a comparison with a similar group of people in certain characteristics but that do not have the same levels of education (control group).

The probability of being at a certain poverty level and having a certain level of education (the result with treatment) will be denoted by  $Y_1$ , while the probability of having a lower educational level is  $Y_0$  (the result without treatment). The difference in these probabilities will likely reflect the impact of education on the four Unsatisfied Basic Needs evaluated in each of the seven planning regions (Greater Metropolitan Area, Rest of the Central region, Brunca region, Chorotega region, Atlantic Huetar region, Northern Huetar region and Central Pacific region). This allows identifying whether, as a result of having a higher educational level, individuals achieve a reduction in poverty. This is also applied for the urban-rural analysis.

In choosing the control group, it should be considered that some people choose to discontinue their studies based on certain characteristics, such as their low-income level is an obstacle to staying in school or their underdeveloped innate abilities. Because of this, there is not an experimental design and the control group can be very different compared to the group treated. Therefore, the use of a non-experimental estimator to estimate the impact of education on poverty can skew the results. To solve this problem, the Propensity Score Matching method was used. This method is designed to estimate the effects of treatment with non-experimental data and also in cases when the assignment to the treatment group is determined by a large number of variables. Rosenbaum and Rubin (1984) define the propensity score as the probability of receiving treatment given certain characteristics.

Thus, the similarity of people will be reflected in the propensity score, which indicates the probability that a given individual will receive treatment given certain characteristics, namely:

$$1) p(X) = Pr\{D = 1|X\} = E\{D|X\}$$

Where  $p(X) = F(h(X))$ , and  $F(h(X))$  is a function index indicating the likelihood of receiving treatment and may be the function of normal or logistic cumulative distribution.  $E(.)$  represents expectations.  $D = 1$  if the individual is treated and  $D = 0$  otherwise.  $X$  is a vector of characteristics prior to treatment.

Regarding the above equation, Rosenbaum and Rubin (1983) point out that the comparison between the control group and the treatment group should be given in the so-called common support zone, *i.e.*, in the zone where there are sufficient units to make comparisons. In addition, it is necessary to meet the following condition, known as the balancing property:

$$2) D \perp X p(X)$$

If this condition is met, observations with the same propensity score must have the same distribution of characteristics, regardless of treatment status. This means that for a given propensity

score, assignment to treatment is random, so each individual has the same probability of assignment.

A second proposal raised by Rosenbaum and Rubin (1983) states that without confusion in treatment allocation, *i.e.*:

$$Y_1, Y_0 \perp D \mid X$$

There is no confusion in the allocation of treatment given the propensity score.

$$Y_1, Y_0 \perp D \mid P(\cdot)$$

After calculating the propensity score, the Average Effect of Treatment on the Treated (ATT) can be estimated as follows:

$$ATT = E\{Y_{1i} - Y_{0i} \mid D = 1\}$$

$$ATT = E\{Y_{1i} - Y_{0i} \mid D = 1, p(X) \}$$

$$3) ATT = E\{E\{Y_{1i} \mid D_i=1, p(X_i)\} - E\{Y_{0i} \mid D_i=0, p(X_i)\} \mid D_i=1\}$$

Where  $Y_{1i}$  is the result if the area of common support is treated. Similarly,  $Y_{0i}$  is the result if the area of common support is not treated.

The value of ATT indicates the impact of education on poverty. As the probability of observing two individuals with exactly the same propensity to have a certain educational level is zero, since  $F(\cdot)$  is a continuous function, an estimated propensity score is not enough to estimate the ATT. Therefore, the Nearest Neighbor Matching method is applied. With this method, the result obtained by each individual treated with the individuals in the control group, whose propensity score is the closest, are compared. The difference between each pair of matched scores is estimated in the variable that we want to measure; and finally, the ATT is obtained as the average of all these differences.

## Results

The results presented are obtained from the estimations of a *probit* model for each of the specifications from which matching scores are made, allowing us to compare control units with units treated. From the ATT the impact of scaling different educational levels (primary, secondary, and university) on poverty in Costa Rica is determined; this is done on a regional level and also by urban and rural areas. The effect of having completed primary education, secondary education, and/or some level of college education is analyzed for each of the four dimensions of poverty referred to in the UBN method for different planning regions and according to urban and rural areas of the country.

### Regional Analysis of the Results

**Effect of completing primary education.** As can be seen in table 2 (Appendix B), the probability of having completed primary education and not having a lower educational level



increases depending on the level of education of the head of household, living in urban areas, and when the household has access to sewage and drainage systems. On the contrary, it decreases with age, when a household has more members (most regions), and when the floor of the house is unpaved.

Based on propensity scores obtained from the results of the table above, we proceeded to estimate the ATT of primary education. Table 3 (Appendix B) shows the estimate for planning regions. The table shows that for poverty in shelter and capacity of consumption, the effects are negative and statistically significant in all cases. In the case of poverty in health and hygiene, the effect is negative but only significant in two regions, which can be due to the extensive coverage of drinking water, access to sewer systems, and septic tanks. Poverty in access to knowledge shows different effects depending on the region, two of them being non-significant. This is not inconsistent and shows, in a way, the low effect that finishing only primary school has. This is a result that is useful as a tool to demonstrate continued need with assistance in education and the reduction of setbacks in education.

On average, completing primary education reduces the probability that a typical individual in a planning region in Costa Rica is in poverty because of a lack of access to shelter by between 2.53% and 4.93%, and in the case of poverty in consumption by between 4.17% and 7.44%. This would imply lowering the percentage of poverty caused by lack of access to shelter for people who did not complete primary school, by region, between 11.3% and 27.3%. In the case of poverty in capacity of consumption, the percentage would be lowered by between 15.3% and 28.2%. In planning regions where the coefficients were significant to reduce poverty in hygiene the percentage could be lowered by between 7.0% and 10.0%, and between 5.0% and 15.0% in the case of poverty in the access to knowledge.

These results suggest that primary education is an important tool to help individuals escape poverty. According to the results, the impact of primary education on poverty reduction is relatively minor in most urbanized regions, while its impact is greater in rural areas.

Figure 3 (Appendix B) shows an even clearer illustration of the impact that completing primary education has on reducing poverty in its various dimensions. Moreover, the differentiated effect can be seen in the way this variable is behaving in the different planning regions in which the country is divided. For example, for the Greater Metropolitan Area (GMA), when an average person completes primary education, the chances of being in poverty of shelter are reduced by 4.0%, poverty of access to knowledge is reduced by 1.9%, and poverty in consumption capacity by 4.7%. The estimated effect that completing primary education has on people compared to those with a lower education level, represents a reduction of 27.3% in poverty rates in the GMA in needs of shelter, 14.9% in needs of knowledge, and 27.2% in basic consumption needs. Overall, the effects found regarding the completion of primary education and its effects on reducing poverty tend to be significant in all regions.

**Effect of completing secondary education.** In order to estimate the impact of completing secondary education on poverty, we proceeded similarly to the case of primary education. The first step was to estimate the propensity scores for the seven planning regions by type of UBN. The results of these estimates are presented in tables 4 and 5, which show that as in the case of primary education, the probability that individuals complete secondary education increases depending on

the schooling of the head of the household, living in urban areas, and having access to sewage and drainage systems. On the contrary, it decreases with age, with a greater number of members in the home, and when the floor of the house is dirt.

Once the propensity scores were estimated, we proceeded to apply the technique of propensity score matching. To make the sample even more reliable, as in the case of primary education, the analysis was restricted to units with probabilities that are located in the area of common support. In this case it was restricted to only the population over 19 years of age that has completed a secondary education or lower. Then the models are estimated separately for each region.

The results of the effect completing secondary education has on poverty reduction in the seven planning regions are presented in Table 5 (Appendix B). All coefficients (other than UBN in health or hygiene) are statistically significant. Thus, we conclude that finishing secondary education has an important effect on reducing poverty in shelter by 0.85% to 4.06%. For consumption poverty, the effect is between 1.33% and 4.29%. Meanwhile, in knowledge the effect is between 3.48% and 5.62%. Thus the estimated effect on poverty reduction that completing secondary education has on individuals, compared to those with a lower education level, is as follows: in shelter the reduction is between 5.0% and 33.0%, in consumption it is between 27.0% and 44.0%, and in knowledge, it is between 12.0% and 30%.

Figure 4 (Appendix B) allows us to observe, in a summarized manner, the importance of finishing secondary education on the reduction of multidimensional poverty in different regions of the country. In this case, it can be seen how in the Greater Metropolitan Area (GMA), when an average individual has finished high school, his or her chances of being in poverty are reduced by 3.0% in shelter, 5.1% in knowledge, and 1.3% in consumption capacity. The impact on the basic needs of hygiene and health were not significant. Therefore, the estimated effect completing secondary education has on individuals compared to those with a lower education level is represented by poverty reduction rates in the GMA of 33.3% in UBN shelter, 44.3% in knowledge, and 20.0% in consumption. As Figure 4 (Appendix B) illustrates, the impact completing secondary education has on poverty reduction is significant in all regions of the country. With the exception of the basic need for health, in all other dimensions the result in all regions (including the outermost) is significant, reinforcing the empirical evidence that the completion of secondary education is a determining factor in poverty reduction in the medium and the long term.

**Effect of having a university degree.** In order to estimate the impact of technical college and college education, the procedure was similar to the cases for primary and secondary education. The first step was to estimate the propensity scores for each type of UBN in each of the seven planning regions. The results of these estimates are presented in Tables 6 and 7, in which one can see that, as in the case of primary and secondary education, the probability that individuals will have a college education increases with the education level of the head of household, living in urban areas, and having access to sewage and drainage systems. On the contrary, it decreases with age, with a greater number of members per household, and when the house has only dirt floors.

Once the propensity scores were estimated, propensity score matching was applied. To make the sample even more reliable, as in the case of primary and secondary education, the analysis was restricted to the units with probabilities that were located in the common support

zone. That is, in this case it was restricted to only the population over 25 years of age with some college (including technical college) education. The models were estimated separately for each region.

The results of the effect of higher education on poverty reduction in the seven regions are presented in Table 7 (Appendix B). In this table, it is also noted that all coefficients except the UBN in health for some regions, are statistically significant. It is noteworthy that the effects are cumulative; that is, individuals with college have completed primary and secondary education. That is why the impact of higher education is lower in some dimensions of poverty. Therefore, higher education has an effect on poverty in shelter ranging between 1.86% and 4.23%. Findings showed in poverty of consumption, the effect is between 0.87% and 2.29%. The effects on poverty in access to knowledge range between 4.15% and 6.03%. Thus the estimated effect of having some college education on individuals compared to those with a lower education level is represented by a reduction in poverty rates by region ranging between 17.0% and 30.0% in shelter, from 40.0% to 55.0% in access to knowledge, and from 14% to 25% in consumption.

Figure 5 (Appendix B) illustrates the impact of having a college education on the reduction of poverty in its various dimensions and for each of the planning regions. For example, for the Greater Metropolitan Area (GMA), we conclude that when the average person has some college education, his or her chance of living in conditions of poverty is reduced by 2.4% in shelter, 0.5% in health, 4.2% in knowledge, and 0.9% in consumption capacity. Thus, having a college education compared to a lower education level shows an effect in the reduction in poverty. For instance, having a college education in the GMA will reduce poverty of shelter by 30.6%, poverty of health by 13.0%, poverty of knowledge by 53.6%, and poverty of basic consumption by 14.4%. As can be seen, the greatest effects in all dimensions are in the GMA, as well as in the rest of the Central Region, where more productive activities (industrial and services) and the government sector are concentrated. However, levels of significance on reducing poverty in most basic needs are very relevant in other regions, particularly with respect to shelter needs and knowledge, but not so much so in access to health, where the results are not significant for some regions.

### Urban-Rural Analysis of the Results

As can be seen in Table 8 (Appendix B), the probability that individuals have primary, secondary or university education, in urban as well as in rural areas, increases with the level of schooling of the head of the household, and also when the household has access to sewage and drainage systems. On the contrary, it decreases with age, when a household has more members, and when the floor of the house is unpaved.

**Effect of completing primary education.** Table 9 (Appendix B) shows that when an average person in the urban area has finished primary education (and in comparison with individuals with similar characteristics but without having completed primary education), the probability of being in a condition of poverty of shelter is reduced by 4.32%, restricted access to knowledge is reduced by 2.32%, and restricted access to other goods and services (consumption capacity) is reduced by 5.32%. The impact on access to health or healthy living is not significant. Thus, as can be seen in Figure 4 (Appendix B), the estimated effect of having finished primary education shows a reduction in the levels of poverty as measured by a 29.1% increase in access to shelter, a 16.3% increase in access to knowledge, and a 29.8% increase in consumption capacity.

Meanwhile, in rural areas, the impact of completing primary education is a 5.12% increase in access to decent shelter, a 1.39% increase in access to healthy living, a 3.11% increase in access to knowledge, and a 4.82% increase in consumption capacity. In Figure 4 (Appendix B) we can see that for individuals living in rural areas with primary education completed, with respect to individuals with primary education incomplete, the levels of poverty are reduced in 16.8% in access to decent shelter, 10.37% in healthy living, 11.2% in access to knowledge, and 16.5% in consumption capacity.

**Effect of completing secondary education.** Based on the results shown in Table 9 (Appendix B), we can argue that completing secondary education in urban areas would have a significant impact on reducing poverty of shelter in about 36.0%, poverty of access to knowledge in 48.0%, and in 22.0% regarding access to other goods and services (consumption capacity). On the other hand, completing secondary education in rural areas would also have a significant impact on reducing poverty of shelter in 18.0%, poverty related to access to knowledge in 30.0%, and poverty in consumption capacity in 32.0%. In Figure 4 (Appendix B), we can see that finishing secondary education is a determining factor in reducing poverty by UBN in urban as well as in rural areas.

**Effect of having a university degree.** According to Table 9 and Figure 4 (Appendix B), when individuals in urban and rural areas have some university studies or a university degree, their chances of reducing poverty levels in all basic needs are higher compared to those who do not have university studies. For instance, those individuals living in urban areas who have university studies could reduce the levels of poverty in access to shelter in 33.0%, access to healthy living in 15.0%, access to better consumption capacity in 17.0%, and access to knowledge in 55.0%.

In the case of rural areas, individuals with university studies would experience a significant reduction of poverty levels in practically all UBN. For instance, the reduction of poverty accounting for access to decent shelter would be reduced in 21.0%, for access to knowledge in 43.0%, and for access to other goods and services (consumption capacity) in 16.0%.

## Conclusions

Combating poverty is one of the most important challenges facing Costa Rica's society and economy today. Despite high levels of investment, the levels of incidence of poverty seem stagnant and continue to affect significantly the peripheral regions and rural areas of the country. According to Moya de Lozano (2008), understanding the importance of education and other social policies to promoting development and reducing poverty and social exclusion requires a more complex and multidimensional approach regarding the meaning of the "social" as a subject of intervention of social workers and the discipline.

In terms of education, peripheral regions and rural areas show some disadvantages in comparison with the GMA. Their education levels are generally lower and there is no consistent information regarding the quality of education they receive, although it can be inferred that this is of lower quality with respect to that in the GMA. For social workers and related disciplines, education and its universal access is a determining factor for human development and wellbeing at the individual, family, group and community level. In other words, education is a social

phenomenon, crucial for the construction of social space. Education is a tool for social reproduction and a basic necessity for the development of opportunities (Concha Toro, 2012).

This study analyzes whether education, as stated in the census of population and housing, can help people from different regions to escape poverty caused by unsatisfied basic needs (UBN). The results show that education is an effective mechanism to help people overcome poverty. Poor shelter, poor levels of hygiene, and poor levels of knowledge and consumption poverty are the four levels of poverty analyzed in this study. Specifically, the study estimated the impact of primary, secondary and university education on these four levels for different planning regions of the country and also according to urban and rural areas.

The results are striking, with the exception of the UBN in health that shows low significance in most cases. In the other cases, having higher educational levels consistently improves the likelihood of reducing poverty, although the effects vary among regions and particularly among urban and rural areas as seen in Figure 4 (Appendix B). It is clear that the impacts of increasing levels of schooling are significant to reducing poverty in all regions and also in urban and rural areas; however, it is clear that the impacts in urban areas are greater in access to decent shelter and access to knowledge. Likewise, it is important to see the positive impact that completing secondary education has in rural areas in terms of reducing poverty in access to decent shelter, access to knowledge, and access to other goods and services (consumption capacity). With the exception of access to health, the impact of completing levels of education is significant in reducing poverty of shelter, knowledge, and consumption capacity.

Outcomes for the regional analysis show a greater impact of finishing levels of schooling on poverty reduction by UBN in the Great Metropolitan Area, where population, economic activities, government institutions, and the formal labor market are highly concentrated. The results for the rest of the regions, which are considered mostly rural (low population density, agriculture-based dependence, incipient labor market), show a positive effect of levels of schooling on poverty reduction in most UBN's; however, we can see differences when we compare the results of the most peripheral or rural regions with those for the GMA. This is also consistent with the analysis done for urban and rural areas; as we can see in Figure 4 (Appendix B), there are important differences in the impact of levels of schooling on poverty reduction when we compare the impact on urban areas with those in rural areas.

Using the propensity score matching methodology, it is demonstrated that with higher levels of education, there will be lower levels of poverty by type of UBN. In analyzing each separate region, it is also shown that education alone becomes an effective instrument to help overcome multidimensional poverty. This is also consistent with the results obtained for urban and rural areas.

Promoting and helping people to progress in the completion of primary, secondary and university education is guaranteed to improve their socioeconomic conditions. For example, for populations who finish secondary education, it could reduce poverty in shelter by between 8.0 and 33.0%, poverty in knowledge by between 26.0% and 44.0%, and poverty in consumption by between 12.0% and 30.0%. Even successful completion of primary education allows people to reduce poverty in shelter by between 12.0% and 28.0%, poverty in hygiene can be reduced up to 10.0%, poverty in knowledge up to 15.0%, and poverty in consumption between 15.0% and 30.0%.

These results reveal that there is a great potential for action in the field of social work. Social workers have a tradition of promoting change in society, social inclusion and citizenship participation, collective action, greater levels of equality and social justice along gender, racial and ethnic lines. Public social policy, such as public education, has been of great importance for social mobility and the reduction of poverty in Costa Rica, as well as in most developed and developing countries.

We hope this study helps to inform the intervention of social workers in Costa Rica through the design, recommendation, and implementation of social policies able to reduce poverty and social exclusion, taking into account geographic barriers impeding a better distribution and accessibility to public education in the country.

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Appendix A

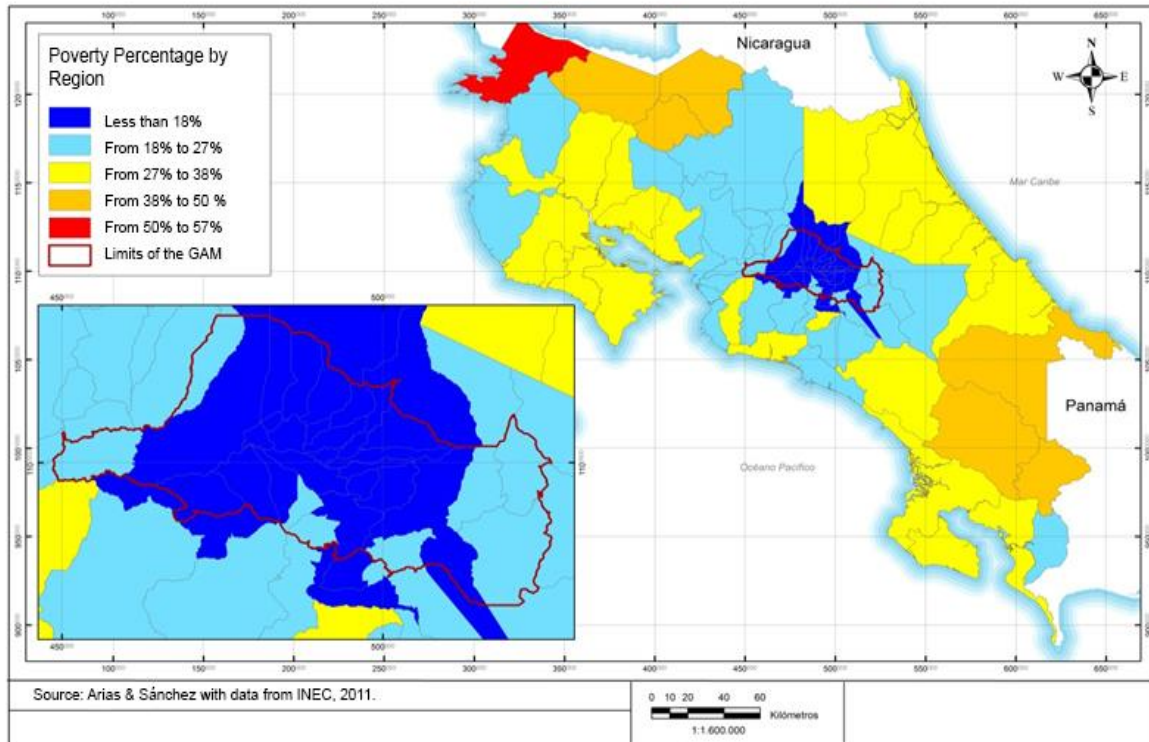


Figure 1. Percentage of households in poverty by county, 2011



Figure 2. Distribution of Regions in Costa Rica Note. Arias & Sanchez (2015).

## Appendix B

Table 1

*Percentage of Population with one or more Unsatisfied Basic Needs According to Planning Regions in Costa Rica, 2011.*

| Regions                   | Shelter | Hygiene | Knowledge | Consumption | Total Population | % of population with one or more basic needs |
|---------------------------|---------|---------|-----------|-------------|------------------|--|
| Costa Rica                | 10.4%   | 6.5%    | 11.9%     | 7.8%        | 4,275,670        | 27.4%  |
| Great metropolitan region | 7.8%    | 3.2%    | 9.6%      | 4.8%        | 2,192,893        | 20.4%  |
| Rest of Central region    | 7.0%    | 7.0%    | 10.5%     | 8.0%        | 477,476          | 25.5%  |
| Chorotega Region          | 13.9%   | 7.5%    | 13.4%     | 10.2%       | 325,570          | 33.1%  |
| Central Pacific Region    | 13.9%   | 6.1%    | 12.4%     | 9.8%        | 242,223          | 31.9%  |
| Brunca Region             | 14.0%   | 15.6%   | 14.9%     | 11.8%       | 327,423          | 39.9%  |
| Atlantic Huetar Region    | 16.4%   | 14.2%   | 17.4%     | 12.5%       | 384,432          | 41.1%  |
| North Huetar Region       | 16.7%   | 8.6%    | 17.4%     | 13.9%       | 324,653          | 39.2%  |

*Note.* Based on data from INEC, 2011.

Table 2

*Costa Rica: Estimate of the Probit Model for Primary Education*

| Variable                          | GMA   |          | Rest of the Central Region |          | Chorotoga |          | Central Pacific Region |          | Brunca Region |          | Atlantic Huetar Region |          | Northern Huetar Region |          |
|-----------------------------------|-------|----------|----------------------------|----------|-----------|----------|------------------------|----------|---------------|----------|------------------------|----------|------------------------|----------|
|                                   | Score | Pr(> z ) | Score                      | Pr(> z ) | Score     | Pr(> z ) | Score                  | Pr(> z ) | Score         | Pr(> z ) | Score                  | Pr(> z ) | Score                  | Pr(> z ) |
| (Intercept)                       | .342  | 2E-10    | .088                       | .4329    | -.092     | .4106    | -.002                  | .9885    | .186          | .1519    | .042                   | .6563    | .122                   | .268     |
| Education of the household        | .026  | <2E-16   | .051                       | <2E-16   | .041      | 2E-14    | .062                   | <2E-16   | .050          | <2E-16   | .046                   | <2E-16   | .060                   | <2E-16   |
| Age                               | .008  | <2E-16   | .011                       | <2E-16   | .007      | 7E-07    | .008                   | 2E-07    | .008          | 5E-09    | -.008                  | 2E-10    | .005                   | 7E-05    |
| Household size                    | .007  | 7E-05    | .024                       | .0027    | .001      | .4205    | .040                   | .0001    | .029          | .0009    | -.002                  | .0861    | .021                   | .0035    |
| Rural                             | 0.032 | 0.2131   | 0.042                      | 0.1563   | .095      | 2E-02    | .041                   | .3351    | .114          | .0049    | -.023                  | .4796    | .032                   | .3792    |
| Physical state of the housing     | 0.587 | <2E-16   | 0.218                      | 0.1494   | -.133     | 1E-01    | .330                   | 4E-03    | -.161         | 1E-01    | -.027                  | 1E-02    | .265                   | 1E-03    |
| Access to sewage or a septic tank | 0.310 | 7E-16    | 0.479                      | 4E-10    | .261      | .0001    | .348                   | 4E-04    | .344          | 2E-07    | .188                   | 2E-03    | .328                   | 1E-09    |
| Age*sex                           | 0.001 | 0.0829   | 0.000                      | 7E-01    | .002      | .0706    | .003                   | .0263    | -.002         | .0968    | .001                   | .4637    | -.003                  | .0104    |

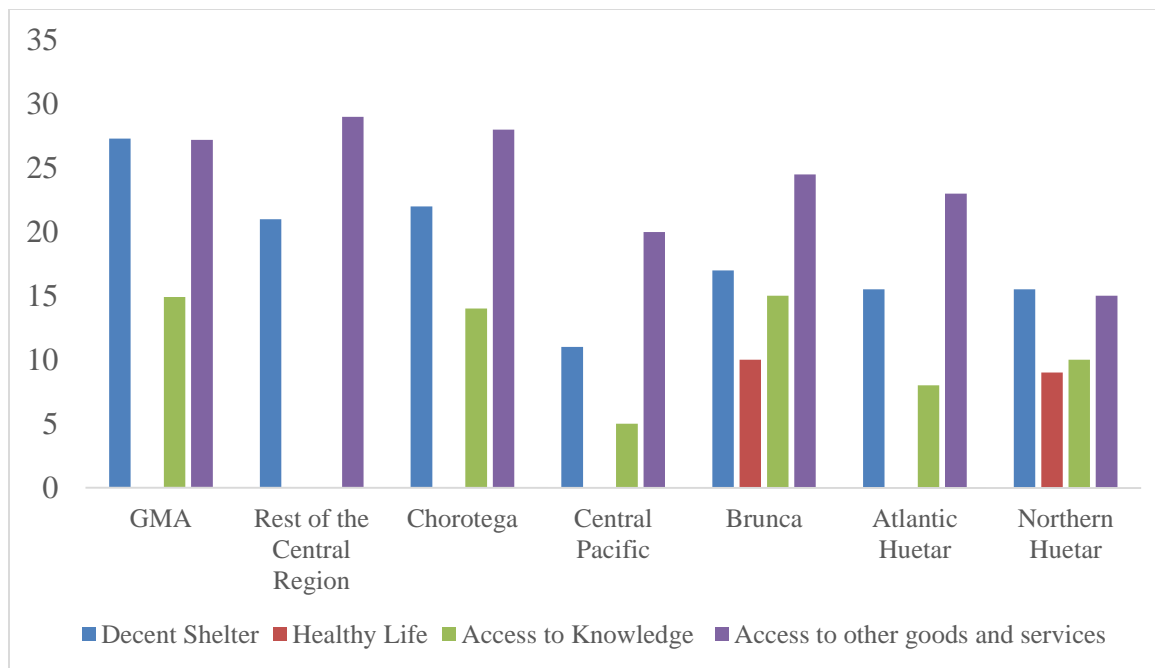
*Note.* Based on the data from the Institute of National Statistics and Census (INEC), 2011

Table 3

*Costa Rica: ATT, Impact of Primary Education on Poverty*

| Region | Decent shelter    |           |                 | Healthy life |           |         | Access to knowledge |           |         | Access to other goods and services |           |               |
|--------|-------------------|-----------|-----------------|--------------|-----------|---------|---------------------|-----------|---------|------------------------------------|-----------|---------------|
|        | Co-efficient      | t student | P value         | Co-efficient | t student | P value | Co-efficient        | t student | P value | Co-efficient                       | t student | P value       |
| GMA    | -<br><b>4.00%</b> | -14.02    | <2.22e-<br>16   | 0.05%        | 0.32      | 0.75    | <b>-1.89%</b>       | -6.12     | 0.00    | <b>-4.64%</b>                      | -19.66    | <2.22e-<br>16 |
| RCR    | -<br><b>2.86%</b> | -5.82     | 0.00006         | -.61%        | -1.17     | 0.24    | <b>-0.90%</b>       | -1.45     | 0.15    | <b>-5.59%</b>                      | -10.17    | <2.22e-<br>16 |
| CH     | -<br><b>4.93%</b> | -4.91     | 0.009           | .925%        | 12.84     | 0.20    | <b>-2.51%</b>       | -2.33     | 0.02    | <b>-7.44%</b>                      | -8.07     | 0.00          |
| CPR    | -<br><b>2.53%</b> | -2.52     | 0.01            | .81%         | 1.25      | 0.21    | <b>0.09%</b>        | 0.08      | 0.93    | <b>-4.72%</b>                      | -5.19     | 0.002         |
| BR     | -<br><b>3.89%</b> | -4.13     | <3.6587e-<br>15 | <b>2.24%</b> | 2.19      | 0.03    | <b>2.79%</b>        | 0.283     | 0.00    | <b>-6.32%</b>                      | -6.70     | 0.00          |
| AHR    | -<br><b>3.96%</b> | -4.73     | 0.02257         | -1.19%       | -1.56     | 0.12    | <b>-2.01%</b>       | -2.19     | 0.03    | <b>-6.02%</b>                      | -7.84     | 0.00          |
| NHR    | -<br><b>4.00%</b> | -4.87     | 0.011           | -1.20%       | -1.93     | 0.05    | <b>2.38%</b>        | 2.64      | 0.01    | <b>-4.17%</b>                      | -5.21     | 0.00          |

*Note.* Bold coefficients are significant to 5%. Based on data from the INEC, 2011.



*Figure 3.* Percentage reduction of poverty rates by type of UBN and the region as a result of completing primary education. Note. For some regions there may be one or more than one UBN which is not significant, thus it is not listed on the chart. Based on data from the INEC, 2011.

Table 4

*Costa Rica: Estimate Probit Model for Secondary Education*

| Variable                          | GMA   |          | Rest of the Central Region |          | Chorotoga |          | Central Pacific Region |          | Brunca Region |          | Atlantic Huetar Region |          | Northern Huetar Region |          |
|-----------------------------------|-------|----------|----------------------------|----------|-----------|----------|------------------------|----------|---------------|----------|------------------------|----------|------------------------|----------|
|                                   | Score | Pr(> z ) | Score                      | Pr(> z ) | Score     | Pr(> z ) | Score                  | Pr(> z ) | Score         | Pr(> z ) | Score                  | Pr(> z ) | Score                  | Pr(> z ) |
| (Intercept)                       | -.889 | <2E-16   | -                          | <2E-16   | -         | <2E-16   | -                      | 8.74E-12 | -.842         | 4.9E-09  | -.670                  | 2.6E-09  | -                      | <2E-16   |
| Education of the household        | .051  | <2E-16   | .045                       | <2E-16   | .044      | <2E-16   | .060                   | <2E-16   | .046          | <2E-16   | -.044                  | <2E-16   | .052                   | <2E-16   |
| Age                               | -.007 | <2E-16   | .008                       | 6.15E-16 | -.009     | 3.82E-12 | -.009                  | 1.08E-11 | -.009         | 9.08E-10 | -.010                  | <2E-16   | .008                   | 8.28E-09 |
| Household size                    | -.010 | 5.82E-09 | .028                       | .00      | -.001     | .63      | -.047                  | .00      | -.064         | 2.34E-09 | -.062                  | 8.58E-14 | .046                   | .00      |
| Rural                             | -.360 | <2E-16   | .143                       | 1.12E-08 | -.126     | 2E-04    | -.102                  | .0079    | -.210         | 1.65E-08 | -.243                  | 8.36E-15 | .164                   | .00      |
| Physical state of the housing     | -.426 | .00      | .508                       | .04      | -.546     | 23-05    | -.384                  | 1E-02    | -.147         | 4E-01    | -.350                  | 3E-02    | .173                   | 2E-01    |
| Access to sewage or a septic tank | .330  | <2E-16   | .303                       | .00      | .362      | .00      | .311                   | 1E-02    | 0.345         | .00      | .288                   | 2E-04    | .273                   | .00      |
| Age*sex                           | .002  | 1.17E-12 | .001                       | 1E-01    | .001      | .45      | -.001                  | .36      | .001          | .64      | .000                   | 0.64     | .003                   | .02      |

Note. Based on the data from the INEC, 2011

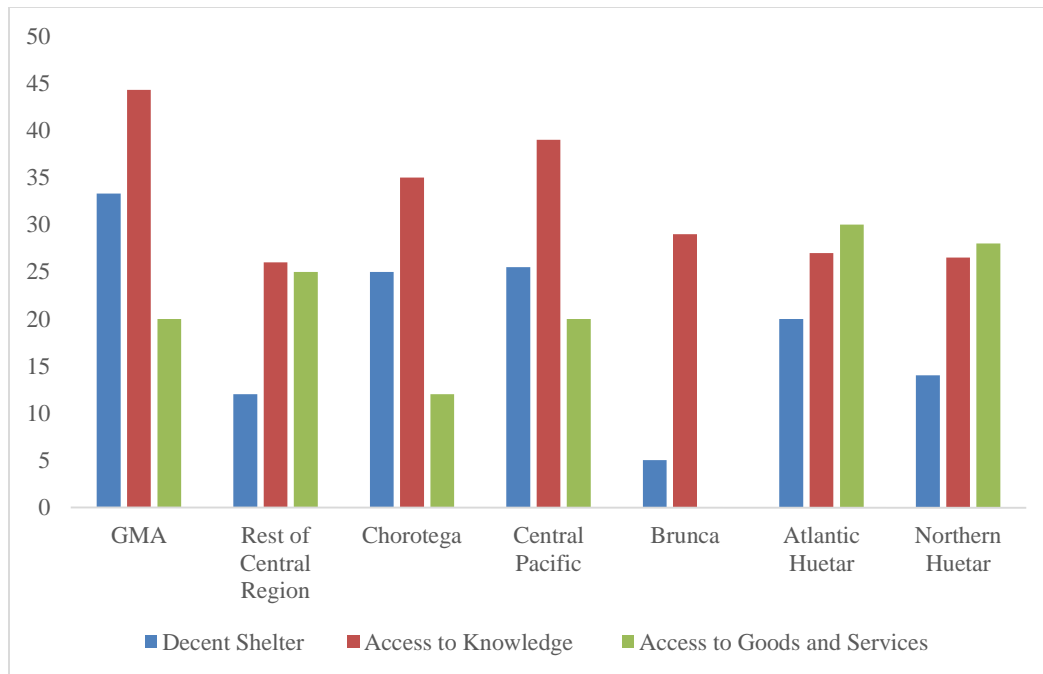
Table 5

*Costa Rica: ATT, Impact of Secondary Education on Poverty*

| Region | Decent shelter |           |           | Healthy life |           |         | Access to knowledge |           |           | Access to other goods and services |           |           |
|--------|----------------|-----------|-----------|--------------|-----------|---------|---------------------|-----------|-----------|------------------------------------|-----------|-----------|
|        | Coefficient    | t student | P value   | Coefficient  | t student | P value | Coefficient         | t student | P value   | Coefficient                        | t student | P value   |
| GMA    | <b>-3.09%</b>  | -12.93    | <2.22e-16 | -0.22%       | -1.53     | 0.13    | <b>-5.07%</b>       | -19.38    | <2.22e-16 | <b>-1.33%</b>                      | -8.51     | <2.22e-16 |
| RCR    | <b>-1.58%</b>  | -2.99     | .00278    | -0.91%       | -1.59     | 0.11    | <b>-3.48%</b>       | -5.05     | 0.00      | <b>-1.95%</b>                      | -3.60     | 0.00      |
| CH     | <b>-4.03%</b>  | -4.37     | .126      | -0.06%       | -0.10     | 0.92    | <b>-5.58%</b>       | -5.65     | 0.00      | <b>-1.56%</b>                      | -1.85     | 0.064     |
| CPR    | <b>-3.99%</b>  | -3.78     | 0.00      | -0.30%       | -0.50     | 0.62    | <b>-5.62%</b>       | -5.10     | 0.00      | <b>-2.44%</b>                      | -3.01     | 0.003     |
| BR     | <b>-0.85%</b>  | -0.77     | 0.44      | -0.56%       | -0.44     | 0.66    | <b>-4.88%</b>       | -4.28     | 0.00      | -1.31%                             | -1.27     | 0.2046    |
| AHR    | <b>-3.61%</b>  | -3.87     | .00011    | 0.74%        | 0.89      | 0.38    | <b>-5.27%</b>       | -5.43     | 0.00      | <b>-4.29%</b>                      | -5.06     | 0.00      |
| NHR    | <b>-2.36%</b>  | -2.17     | 0.030     | -0.31%       | -0.40     | 0.69    | <b>-4.72%</b>       | -4.41     | 0.00      | <b>-3.30%</b>                      | -3.49     | 0.00      |

*Note.* Bold coefficients are significant to 5%. Based on data from the INEC, 2011.





*Figure 4.* Percentage reduction of poverty rates by type of UBN and the region as a result of finishing secondary education. The results for the dimension of Healthy Living did not yield significant results, for that reason they are not presented in the graph. Based on data from the INEC, 2011.

Table 6

*Costa Rica: Estimate Probit Model for University Education*

| Variable                          | GMA    |          | Rest of the Central Region |          | Chorotoga |           | Central Pacific Region |          | Brunca Region |          | Atlantic Huetar Region |          | Northern Huetar Region |          |
|-----------------------------------|--------|----------|----------------------------|----------|-----------|-----------|------------------------|----------|---------------|----------|------------------------|----------|------------------------|----------|
|                                   | Score  | Pr(> z ) | Score                      | Pr(> z ) | Score     | Pr(> z )  | Score                  | Pr(> z ) | Score         | Pr(> z ) | Score                  | Pr(> z ) | Score                  | Pr(> z ) |
| (Intercept)                       | -1.559 | <2E-16   | -1.666                     | <2E-16   | -1.463    | <2E-16    | -1.237                 | 2.37E-15 | -1.379        | <2E-16   | -1.418                 | <2E-16   | -1.310                 | <2E-16   |
| Education of the household        | .099   | <2E-16   | 0.092                      | <2E-16   | 0.085     | <2E-16    | 0.079                  | <2E-16   | 0.082         | <2E-16   | 0.081                  | <2E-16   | 0.086                  | <2E-16   |
| Age                               | -.002  | 3.36E-14 | -0.003                     | 0.00     | -0.001    | 0.59766   | -0.003                 | .009811  | -0.003        | 5.45E-09 | -0.003                 | 0.01     | -0.006                 | 0.00     |
| Household size                    | -.056  | <2E-16   | 0.003                      | 0.28249  | -0.086    | <2E-16    | -0.094                 | <2E-16   | -0.105        | 2.97E-14 | -0.105                 | <2E-16   | -0.083                 | <2E-16   |
| Rural                             | -.175  | 8.03E-16 | -0.225                     | <2E-16   | -0.169    | 9E-08     | -0.173                 | 0.00     | -0.241        | 0.00     | -0.241                 | 6.39E-13 | -0.221                 | 3.24E-12 |
| Physical state of the housing     | -.745  | 7.73E-12 | -1.082                     | 0.01     | -0.374    | 5E-03     | -0.792                 | 7E-04    | -0.510        | 1E-02    | -0.510                 | 3E-02    | -0.412                 | 2E-02    |
| Access to sewage or a septic tank | .494   | <2E-16   | 0.520                      | 0.00     | 0.492     | .00000028 | 0.255                  | 5E-02    | 0.430         | 0.00     | 0.430                  | 3E-05    | 0.446                  | 0.00     |
| Age*sex                           | .002   | 1.44E-13 | 0.001                      | 5E-02    | 0.001     | .56875    | 0.002                  | 0.04     | 0.002         | 0.71042  | 0.002                  | 0.05     | 0.001                  | 0.56     |

*Note.* Based on the data from the INEC, 2011

Table 7

*Costa Rica: ATT, The Impact of Having a University Education on Poverty*

| Region | Decent shelter |           |           | Healthy life  |           |         | Access to knowledge |           |           | Access to other goods and services |           |           |
|--------|----------------|-----------|-----------|---------------|-----------|---------|---------------------|-----------|-----------|------------------------------------|-----------|-----------|
|        | Coefficient    | t student | P value   | Coefficient   | t student | P Value | Coefficient         | t student | P value   | Coefficient                        | t student | P Value   |
| GMA    | <b>-2.39%</b>  | -17.94    | <2.22e-16 | <b>-0.50%</b> | -5.54     | 0.00    | <b>-4.15%</b>       | -26.39    | <2.22e-16 | <b>-0.87%</b>                      | -9.94     | <2.22e-16 |
| RCR    | <b>-1.86%</b>  | -5.64     | 0.00      | <b>-1.63%</b> | -4.31     | 0.00    | <b>-4.73%</b>       | -9.76     | <2.22e-16 | <b>-1.53%</b>                      | -4.30     | 0.00      |
| CH     | <b>-2.46%</b>  | -3.68     | 0.00      | -0.69%        | -1.67     | 0.09    | <b>-4.87%</b>       | -6.73     | 0.00      | <b>-1.92%</b>                      | -3.47     | 0.00      |
| CPR    | <b>-4.23%</b>  | -4.91     | 0.01      | -0.69%        | -1.13     | 0.26    | <b>-4.58%</b>       | -5.41     | 0.00      | <b>-2.29%</b>                      | -3.20     | 0.00      |
| BR     | <b>-3.47%</b>  | -4.04     | 0.00      | -1.83%        | -1.56     | 0.12    | <b>-5.39%</b>       | -5.58     | 0.00      | <b>-2.01%</b>                      | -2.35     | 0.02      |
| AHR    | <b>-3.08%</b>  | -4.10     | 0.00      | <b>-2.03%</b> | -2.58     | 0.01    | <b>-6.03%</b>       | -7.05     | 0.00      | <b>-1.90%</b>                      | -2.66     | 0.01      |
| NHR    | <b>-2.97%</b>  | -3.89     | 0.99      | -0.66%        | 0.99      | 0.32    | <b>-5.35%</b>       | -6.24     | 0.00      | <b>-1.45%</b>                      | -2.18     | 0.03      |

*Note.* Bold coefficients are significant to 5%. Based on data from the INEC, 2011.

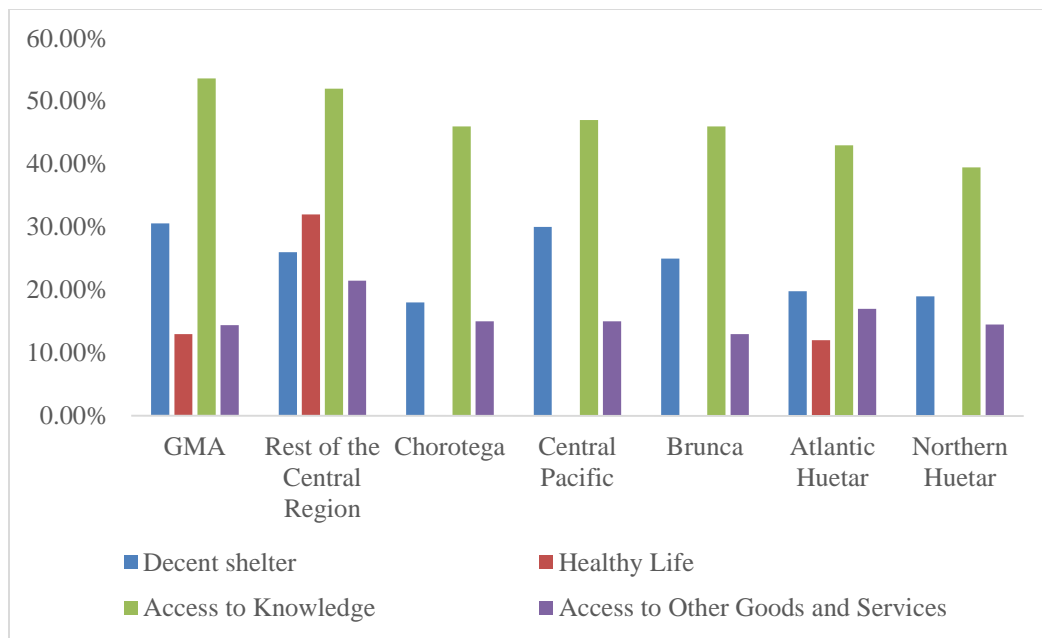


Figure 5. Percentage reduction in poverty rates by type and region UBN effect of having some degree of university education. Note. For some regions results did not yield significant in the dimension of health, thus they are not reported in the graph. Based on data from the INEC, 2011.

Table 8

*Costa Rica: Estimate Probit Model for Primary, Secondary and University Education According to Urban and Rural Areas*

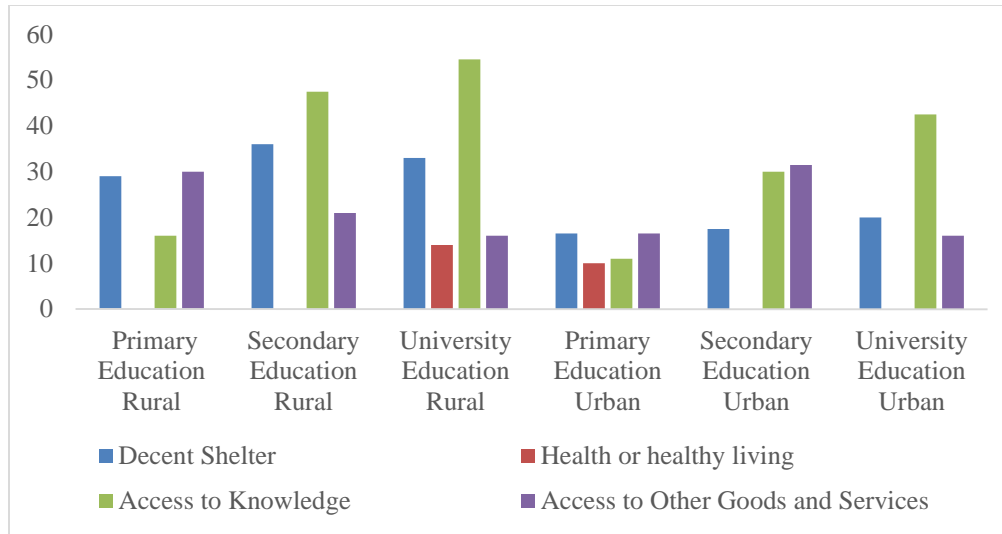
| Variable                          | Primary education |         |       |         | Secondary education |         |       |         | University education |         |       |         |
|-----------------------------------|-------------------|---------|-------|---------|---------------------|---------|-------|---------|----------------------|---------|-------|---------|
|                                   | Urban             |         | Rural |         | Urban               |         | Rural |         | Urban                |         | Rural |         |
|                                   | Score             | Pr(> z) | Score | Pr(> z) | Score               | Pr(> z) | Score | Pr(> z) | Score                | Pr(> z) | Score | Pr(> z) |
| (Intercept)                       | 0.35              | 0.00*** | -0.13 | 0.25    | -0.94               | 0.00*** | -1.08 | 0.00*** | -1.62                | 0.00*** | -1.38 | 0.00*** |
| Education of head of household    | 0.03              | 0.00*** | 0.06  | 0.00*** | 0.05                | 0.00*** | 0.06  | 0.00*** | 0.10                 | 0.00*** | 0.09  | 0.00*** |
| Age                               | -0.01             | 0.00*** | -0.03 | 0.00*** | -0.01               | 0.00*** | -0.02 | 0.00*** | 0.00                 | 0.00*** | -0.01 | 0.00*** |
| Household size                    | -0.04             | 0.00*** | -0.02 | 0.00*** | -0.03               | 0.00*** | -0.05 | 0.00*** | -0.06                | 0.00*** | -0.09 | 0.00*** |
| Physical state of housing         | -0.60             | 0.00*** | -0.28 | 0.00*** | -0.45               | 0.00*** | -0.18 | 0.00*** | -0.77                | 0.00*** | -0.43 | 0.00*** |
| Access to sewage or a septic tank | 0.32              | 0.00*** | 0.35  | 0.00*** | 0.35                | 0.00*** | 0.28  | 0.00*** | 0.51                 | 0.00*** | 0.47  | 0.00*** |
| Age*sex                           | 0.00              | 0.08*   | 0.00  | 0.01**  | 0.00                | 0.00*** | 0.00  | 0.00*** | 0.00                 | 0.00*** | 0.00  | 0.50    |

Table 9

*Costa Rica: ATT, The Impact of Having Primary Secondary and University Education According to Urban and Rural Areas*

| Variable                           | Primary education |         |        |         | Secondary education |         |        |         | University education |         |        |         |
|------------------------------------|-------------------|---------|--------|---------|---------------------|---------|--------|---------|----------------------|---------|--------|---------|
|                                    | Urban             |         | Rural  |         | Urban               |         | Rural  |         | Urban                |         | Rural  |         |
|                                    | Score             | Pr(> z) | Score  | Pr(> z) | Score               | Pr(> z) | Score  | Pr(> z) | Score                | Pr(> z) | Score  | Pr(> z) |
| Access to adequate shelter         | -4.32%            | 0.00*** | -5.12% | 0.02**  | -3.87%              | 0.00*** | -2.75% | 0.03**  | -2.86%               | 0.00*** | -3.15% | 0.04**  |
| Access to health or healthy living | -0.09%            | 0.63    | -1.39% | 0.04**  | -0.17%              | 0.11    | -0.34% | 0.62    | -0.61%               | 0.00*** | -0.71% | 0.18    |
| Access to knowledge                | -2.32%            | 0.00*** | -3.11% | 0.02**  | -5.96%              | 0.00*** | -4.96% | 0.00*** | -5.03%               | 0.00*** | -5.82% | 0.00*** |
| Access to other goods and services | -5.32%            | 0.00*** | -4.82% | 0.00*** | -1.87%              | 0.00*** | -3.56% | 0.00*** | -1.10%               | 0.00*** | -1.73% | 0.02**  |

*Note.* Based on data from the INEC, 2011



*Figure 6.* Percentage reduction in poverty rates by type UBN and according to urban and rural areas as the effect of having completed primary, secondary or university education. Based on data from the INEC, 2011.

## **Building the Health Capability Set in a Purépecha Community to Assess Health Interventions**

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**Abstract.** Health capabilities can be viewed as the ability and opportunity to achieve health states according to the different styles of life valued by people. This paper contrasts and explores the dimensions that could be included in the health capability set to assess health interventions in Cuanajo, Mexico, expanding upon a previous work and using in-depth semi-structured interviews. Cuanajo is a semirural indigenous Purépecha community located in western Mexico. While the final objective is to generate measures of outcomes in economic evaluations of health interventions to be carried out in this community, this study reinforces the dimensions that could be employed in the final step. These are: 1) physical, taking into account activities of daily living enabled by different health statuses; 2) mental, in the form of how positive feelings contribute to achieving health functioning; 3) social, considering how a minimal social life takes into account how relations with partners, family members, and friends provide love and support; 4) health agency, incorporating health knowledge and knowledge about how traditional medicine can affect or contribute to achieving health; 5) material conditions, which include housing facilities and monetary resources; and 6) community, how social pressure and security affect health functioning.

**Keywords:** Health Capabilities, Mexico, Purépecha community, health interventions, Capability Approach, rural

When evaluating the impact of health interventions in different societies, effectiveness is assessed by using mortality and morbidity indicators, or a combination of both, in the form of a Health-Related Quality of Life (HRQL) indicator. Such indicators, however, tend to underestimate the impact of the intervention because they are primarily health centered, understanding health in biomedical terms. This means that it would be better to have a HRQL indicator that adds something more than health alone.

Considering the particular case of Cuanajo, a semirural indigenous Purépecha community situated in the lake and mountainous areas in the Mexican state of Michoacán, assessment of health interventions should follow this idea because of its unique characteristics. Located in the municipality of Pátzcuaro, Cuanajo had 4,758 inhabitants in 2010 (Instituto Nacional de Estadística y Geografía [INEGI], 2010), of which more than 80% were considered as Purépecha taking into account the household head. The Purépechas (also known as P'urhépecha) are an indigenous people with the characteristic that each member is a p'urhé (which means 'people'). This implies self-affirmation as human beings (Comisión Nacional para el Desarrollo de los Pueblos Indígenas [CDI], 2009). The Purépecha population is about 213,478 (INEGI, 2010). Due to its close proximity to both the cities of Morelia and Pátzcuaro, Cuanajo is not considered as a marginalized region, in contrast with other Purépecha communities located in the mountains. There has been a loss of Purépecha identity in the last decades in Cuanajo, which is why less than 39% of the people, only the oldest ones, can currently speak the Purépecha language (see Table 1 in Appendix).

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Economic activity in Cuanajo is mainly based on the production of artisanal furniture, the sale of plants, and embroidery. In addition, migrant remittances from the United States sent by relatives are important. At the present time, logging by people from outside the region has caused a scarcity of the wood used for furniture, which in turn poses a threat to family incomes.

Concerning people's health and as a consequence of the combination of their traditional heritage and the modern lifestyles learned, a set of diseases and unhealthy conditions threatens their life. First, diseases such as diabetes and high blood pressure are becoming common, since these are related to modifications in eating habits as people increasingly substitute their traditional food based on grains, vegetables, and meat for high-calorie foods. Second, the abuse of alcoholic beverages rooted in traditional Purépecha celebrations is a well-known problem among the community that not only affects men and women of all ages. Third, proliferation of street-youth gangs have emerged as imitations of gangs from the Mexico-U.S. border—learned when trying to get to the United States or “cruzar al otro lado”—threatens the security and peace of the community.

The Capability Approach (CA) suggests that people's quality of life is assessed by the freedom to achieve a set of interrelated beings and doings, called functioning, that constitutes the opportunity to lead one type of life or another (Sen, 1992). Thus, an indicator based on the so-called capability set could be used to monitor and evaluate progress in the health-related well-being of Cuanajo. However, each particular assessment exercise requires a set of specific capabilities. Therefore, health capabilities (Ruger, 2010a; 2010b), which are the corresponding freedoms in the health domain, should be used to evaluate people's HRQL. From an economic perspective, they represent a great opportunity to construct indicators that may be used in Economic Evaluations of Health Interventions (EEHI). In the context of Cuanajo, health capabilities will represent the freedom in the form of the ability and opportunity to achieve health states according to the different kinds of life valued by people.

More formally, health functioning reflects both a person's achieved health state, and their actions to maintain health. Thus, health capabilities “represent a person's overall freedom[s] to achieve health functioning” (Ruger, 2010b, p. 77). The Health Capability Set (HCS) is then formed by the achieved and potential health functioning when a person has the freedom to choose health states in accordance with the kind of life that he or she values. Despite that, we seek a means to measure and compare the HCSs of different people and there is no convincing way of doing so. Thus, for operational purposes both health functioning and health capabilities are defined in the same space, the HCS will be constituted by health functioning vectors, which can be used as a proxy (Ruger, 2010b), and health-related resources, a simplification of Ruger's (2010a), Health Capability Profile (HCP), that will be designed as a guide to construct the HCS. Accepting that the final assembly of the HCS must incorporate some form of public reasoning with open impartiality to avoid localism, previous work in the form of both philosophical and practical reasoning can help in this task.

The purpose of the long-term work is to generate an instrument that considers the main dimensions that must be incorporated in the HCS in order to construct a HRQL indicator for people in Cuanajo. Specifically, in this stage, the present work applies some kind of practical reasoning as a means to identify the relevant dimensions that could be subjected to later public reasoning.

## Methods

The interview guide was generated based on a previous list of dimensions obtained by means of theory and objective lists that imply some form of philosophical reasoning (Télez, 2015), but includes more general questions in order to allow the emergence of new dimensions. In total, 13 in-depth interviews among adult members of the community of Cuanajo were performed, considering mainly a purposive sample but attempting a variation among interviewees. Although the snowball technique was employed to contact potential interviewees, the final selection was done by means of assure maximal variation via a random exercise. In this sense, the sample has a variation of individuals aged 21 to 60 years old with different health conditions, education levels, and occupations (see Table 2).

Table 2.

### *Characteristics of the sample interviewed in Cuanajo*

| Age | Gender | Health status           | Education              | Occupation            |
|-----|--------|-------------------------|------------------------|-----------------------|
| 21  | Male   | Good                    | Incomplete high school | Retailer (cyber café) |
| 24  | Female | Good                    | Incomplete primary     | Homemaker             |
| 25  | Male   | Colitis                 | Complete high school   | Office worker         |
| 28  | Female | Gallbladder stones      | Bachelor degree        | Homemaker             |
| 31  | Male   | Good                    | Complete secondary     | Carpenter             |
| 34  | Female | Gastritis/Back problems | Complete secondary     | Carpenter/homemaker   |
| 39  | Female | Diabetes                | Complete primary       | Homemaker/plants      |
| 41  | Female | Diabetes                | Incomplete primary     | Artisan               |
| 42  | Female | Good                    | Bachelor degree        | Nurse                 |
| 43  | Male   | Good                    | Incomplete high school | Carpenter/retailer    |
| 43  | Male   | Good                    | Incomplete primary     | Carpenter             |
| 55  | Male   | Good                    | Complete primary       | Carpenter/retailer    |
| 60  | Female | Diabetes                | Bachelor degree        | Retired/homemaker     |

From this sample, seven women and six men were interviewed in order to understand what health means for them, why they value health, what aspects they consider are important to achieving health, and finally what they value in life. Through these 13 semi-structured interviews, which lasted between 30 and 65 minutes, it was possible to exercise some forms of practical reasonings (Alkire, 2002) in order to identify the relevant dimensions of the HCS. Data were processed and analyzed using MAXQDA software.

The dimensions identified in the previous work (Télez, 2015) share similarities with Ruger's HCP (2010a) but in a synthesized version, including the health component and both

internal and external factors. This simplification is needed in order to generate an instrument such as those used in typical EEHI, for example the EQ-5D (EuroQol Research Foundation, 2015) or the ICECAP-O and ICECAP-A instruments (Al-Janabi, Flynn & Coast, 2012). These dimensions are: physical, mental, and social for the health component; health agency as an internal factor (besides the health component); and material conditions and community functioning for external factors. While it was recognized that these dimensions do not constitute a definite list, it is argued that they represent objective and subjective elements that can integrate the HCS. In particular, the physical dimension considers the ability to do Activities of Daily Living (ADL) (Hausman, 2010), and mental and social dimensions are concerned with the ability to have positive feelings and the ability to have the personal relationships one wants, respectively (Seligman, 2010). Health agency, material, and community dimensions coincide with Ruger's HCP (2010a,) and also take into account what the right to health approach says (Office of the United Nations High Commissioner for Human Rights [OUNHCHR], & World Health Organization [WHO], 2008). It is worth mentioning that mental, social, health agency, and community dimensions have been identified as very relevant in the case of Mexico because their improvement can lead to expanding people's capabilities (Pick & Hietanen, 2015). Even though the interview guide was elaborated taking into account these previous dimensions, interviews were open enough so as to enable the emergence of new categories in a similar way as grounded theory (Merriam, 2009). In addition to what interviewees reported, statistical data obtained from the 2010 population and housing census (INEGI, 2010) and from that observed *in situ* concerning health capabilities, were employed to build the HCS.

## Results

Even if the importance of dimensions previously established was confirmed through interviews, it was possible to identify emergent sub-dimensions together with the attached value provided by the community of Cuanajo. Concerning the health component, everybody relates health to physical or bodily well-being and most of the people reinforce the emotional aspect of the mental dimension. One respondent stated that:

[Health] is the proper functioning of the body, for me it is to be well in all aspects of the physical body but also of the mind... Emotions, I think this is important too because if you are not emotionally well you can neglect everything.

People value and seek to be healthy and do activities to achieve this. Additionally, it is identified that having poor health reduces the freedom to achieve valuable things. One respondent stated "playing soccer is important for me because it helps me to be fit, because I do not become old. I feel it is good to run, because I feel... better physical and emotional performance." Another indicated "I could not crave money or fortune... what I truly wish is only well-being... not to feel physical pain, I want to feel what I feel know, well, joy, being happy." Another stated "I have gallbladder stones; I was diagnosed when I was eight months pregnant... It is painful, very annoying and doesn't allow me to carry out my responsibilities with my daughter and husband."

Most people recognize that having a positive attitude and having sources of distraction also contributes to improving bodily health. Love and support from their partners, family, and friends is considered as a very relevant dimension that affects health for all interviewees, as referenced in the following comments.

Being at home doing my girdles [a kind of craft] bores me and raises my blood sugar... and even if I take my pills, they do not work... When I'm thinking about going out to talk and to hit the bottle with my [girl] friends, I'm very happy. I take a bath even with cold water and I feel it's getting late to go out. I forget to take my pills and I'm from here to there... I don't feel sick or anything related to diabetes...

My family is the most important thing, I like to take care of my children, to take them to the school, I like it a lot... I would like to have better communication with my mother; for example, when we were young I would have liked to talk to her about sexuality, we could not talk about that with our parents, they scolded us. But now, we need to teach our children.

[To stop smoking] I would need professional help, isn't? As it happens with the AA [Alcoholics Anonymous] group. I stopped drinking thanks to this group; I enjoy going there because there are truly friends.

Concerning health agency (i.e., health knowledge, effective decision-making about health, self-management and self-regulation skills, the ability to control personal and professional situations to pursue health, and the recognition that good health is the right choice; see Ruger, 2010b, p. 147), people mention that it is important to do physical activity and to have good nutrition. However, when they feel ill, they do not seek medical advice immediately, preferring to medicate themselves. For example, one respondent stated "I barely do exercise but I know that it helps [to be healthy], I also know that I have to drink water, eat properly and healthy, avoid fatty meals." Another stated "when I feel ill, I do not go to the doctor immediately, I buy some pills and that's all... Those that are always advertised... Only when I feel really bad do I go to the doctor." One interview indicated, "I have many [ill related] problems, the first one is related to diabetes, which has affected my vision; anyway, I'm fighting against this disease... I consume the very basics: fresh vegetables, avoid fats and barely eat tortillas." Finally, one stated:

Here we work in the fields and I think that we do not take care about us as people in the city do... We eat vegetables and almost never consume sodas and fatty food because we live outside [Cuanajo] and there are not many stores there so we can't buy many things.

Because Cuanajo is still an indigenous community, people usually substitute prescribed medicine with traditional treatments such as plants and herbs. As they themselves recognize, whilst these treatments sometimes work, they do not always. "My mother has knowledge about home remedies and she prepares me herbal infusions. When the condition becomes worse, I go to the doctor to get a prescription and to be checked." Another indicated "pills irritate my stomach... you will say that we are very traditional but I need plants because they are more natural than pills." One stated "I almost never go to the doctor, I usually use home remedies," while another noted "sometimes I also pull out the amargoso [a bitter plant] that is around there and cook it with water and that's all, because I have even stopped my medicines [for diabetes]." Finally, one stated

I have substituted many medicines for alternative medicine... They are natural, natural plants... Here in Cuanajo there are a lot of plants, and there are old ladies who are dedicated to studying them and healing with them. When you feel bad, they pass

the plant above your body in order to know if your body will accept or will reject it... Then they make the diagnostic and give you a prescription saying “you have to take this and to do this.”

As external factors that compose the HCS, material conditions such as having a concrete house, flooring, and access to food were considered very important among the deprived people. For instance, one indicated “I would like to have my dwelling made of concrete with a firm floor in order to avoid bugs and diseases” while another stated

Right now, we do not have material things, we don't have money to have a better house... It lacks everything, it doesn't have a firm floor, it has an earthen floor, we don't have a door [it has a long plank of wood with plastic]. I'm very unhappy to be poor, sometimes we do not have money even to eat, sometimes we do not have firewood to cook... sometimes my children do not have shoes, it makes me feel really bad. I would like to have a decent house in order for my children to live well. At this moment there are many fleas inside but if I had a firm floor and a door, then dogs could not get inside and leave fleas.

Access to health care services for deprived people is not as available as they would like it to be, despite the Popular Insurance Program (Seguro Popular) implemented by the Mexican government as part of the anti-poverty program Oportunidades (now Prospera). People prefer to go to the cities of Pátzcuaro and Morelia to have private health care. For example, one noted “I have the Seguro Popular, but I frequently go to private doctors in Morelia or Pátzcuaro because here there is nobody who treats us.” Another stated “recently we got the Seguro Popular but we have never used it... I use alternative medicine and I think it is better for me; actually I have stopped taking many of my medicines.”

Security is also mentioned as important among local people, which is more related to proliferation of youth gangs in imitation of gangs from the Mexico-U.S. border. For example, one stated “nowadays, I don't like street-youth gangs... From five years ago until now... They fight between themselves but also attack other people.” Another said

Insecurity makes me unhappy because here there are groups of lads that go out not to have healthy fun but to beat people up even if they do not confront them ... They feel lords of the neighborhood or the street and attack you.

Finally, it is interesting to mention that alcoholism is the main health problem in the community that unambiguously constrains the HCSs of the inhabitants. Even though alcoholism is present in all societies around the globe, it is well documented that it was present in the Purépecha society before the Spanish conquest (Ruiz, 2000; Ochoa & Sanchez, 2011) as a way to celebrate their gods and war victories. Nowadays in Cuanajo, men start drinking before the age of 14 years old and keep doing it for the rest of their lives, and it is also a problem among women. According to interviewees, they drink because there is the social pressure to do so and because they want to be part of the community. While they generally recognize that it is healthier not to drink, they continue to do so. For instance, one stated “I used to binge-drink to please my buddies, to be accompanied and all that stuff.” Others report

What I can see here is that if you get drunk you are... you are everybody's friend because they see that you are just like them; if you behave differently they reject or discriminate you. I'm very quiet and with different ideas and tastes so I cannot go out... I'm afraid to go out.

That mentality bothers me a lot, they [people of Cuanajo] spend a lot of money in organizing parties, get indebted but cannot invest in their children's education... They neglect their children and that is the reason of the proliferation of gangs... In the parties, the most important thing is to get drunk... men are drunk and are lying on the floor, they do not take care of their children, children's moms are sometimes drunk too, dancing around... The poor children are crying and crying because they want to go to sleep.

When I was diagnosed as diabetic, a lady told me to drink a beer on an empty stomach, and I did it... Perhaps it [diabetes] was under control because when I went later to the doctor, she asked me "what did you do because you are better" and I told her "well, the beer." They don't believe me.

It [alcohol] doesn't help me but what happens is that when I go out I find my [girl] friends and they tell me "come on! have a drink" and I tell them "No, thank you, not now," but they insist and make fun of me, then I say "Ok give it to me!"

### Discussion

According to this study, it is possible to argue that the dimensions previously established through philosophical reasoning are not very different from the ones obtained here and that are important for this community. Nevertheless, there are some particularities that emerged in the interviews that need to be remarked upon.

In the health component, the physical dimension in the form of ADL is considered important but not as expected. This can be attributed to the fact that in general the interviewees did not have severe disabilities. As Table 1 also shows, the proportion of people in Cuanajo with some kind of disability is slightly smaller than the corresponding proportion for the entire state of Michoacán. This, however, does not mean that the dimension could be neglected because this would imply discriminations against people with disabilities. On the other hand, being emotionally well is considered as part of the health domain, reinforcing the idea that the mental dimension can be related to how positive feelings contribute to achieving health functioning. Concerning the social domain of health, it was identified that love and support obtained from relatives, friends, and also self-help groups is important as a means to achieving emotional health and to take care of one's body. This would support the idea that the social dimension of health should be included, but only as a minimum social life.

Health agency, considered as an internal factor, should also be included since it was found that even though people know what they have to do in order to preserve their health, they often do not do it. This fact was supported by a nurse's testimony in relation to a small clinic linked to the Seguro Popular. She remarked that people in the community like to buy *junk food* such as fatty meals and sugary drinks, women give their children Maruchan soups during the day, and in the

evening they buy enchiladas instead of preparing meals based on vegetables. On the other hand, it is important to note how the use of plants and herbs emerged in the interviews as a means of treating illnesses, which implies that this dimension must also encourage the use of evidence-based traditional medicine.

External factors in the HCS emerged as very important for the community. Due to the fact that the target population of the Seguro Popular are the most economically deprived and lack formal insurance (approximately 80% in Cuanajo, see Table 2), the group of people interviewed with these characteristics were already affiliated with this insurance. Among these people, it was found that having easy access to quality health care services is considered very important. This dimension should not only take into account the number of affiliated people, but the quality of the service. According to the interviewees, particularly those who are economically deprived, living conditions is a very important domain that constrains the ability to be healthy. This result is reinforced through analyses of official data. For example, Table 2 reveals that more than 56% of Cuanajo's dwellings have earthen floors. Finally, and considering that alcoholism is the main health-related problem in the community, it is very important to highlight how social pressure was mentioned unanimously by all the interviewees as the principal cause. This finding is very important because it implies that the community domain must take account of the social pressure exercised in order to monitor and evaluate health-related interventions. In this domain, a dimension related to security in the community must also be incorporated as a means to having both the perception of the general population but also that of the young people involved in street-gangs.

While the domains obtained in this exercise could be employed to construct the HCS for this community, the final dimensions must be selected through public reasoning with open impartiality considering its importance in the practice of democracy, related closely to the topic of justice in the CA (Sen, 2009). Thus, the next step is to exercise public reasoning using deliberative groups and public debates while taking into account a positionally independent objectivity perspective in order to avoid some forms of parochialism.

### **Conclusion**

Because health capabilities incorporate not only biomedical issues but also social and environmental aspects that affect health, they constitute a promising framework to generate measures of outcomes in EEHI to be carried out in the community of Cuanajo. The need to operationalize the CA in general and the health capabilities framework in particular implies that simplifications are required in developing instruments to be used in large-scale projects but preserving the guide provided by Ruger's HCP. In this work, as a previous step to the final selection of dimensions, it was possible to reinforce through practical reasoning that the tentative dimensions previously identified must be included in the HCS. According to this study, it is possible to conclude that six major dimensions should be discussed and valued through deliberative groups using participatory techniques in the next step: 1) physical, 2) mental, 3) social, as a minimal social life, 4) health agency, 5) material conditions, and 6) community. In particular, it can be argued that the health agency and community dimensions need special attention in order to construct sub-indicators that take into account particularities of this indigenous community, such as knowledge of evidence-based traditional medicine, social pressures, and security concerns. This study findings have significant relevance to any human service personnel working with the community, including social workers.

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## Appendix

Table 1.

*Comparison of population and dwelling characteristics in the state of Michoacán, Cuanajo and Rural Cuanajo in 2010*

| Group            | Description                              | Frequency |         |               | Percentage |         |               |
|------------------|--|-----------|---------|---------------|------------|---------|---------------|
|                  |  | Michoacán | Cuanajo | Rural Cuanajo | Michoacán  | Cuanajo | Rural Cuanajo |
| Population       | Total                                    | 4,351,037 | 4,758   | 2,492         | 100.00     | 100.00  | 100.00        |
| By gender        | Male                                     | 2,102,109 | 2,319   | 1,237         | 48.31      | 48.74   | 49.64         |
|                  | Female                                   | 2,248,928 | 2,439   | 1,255         | 51.69      | 51.26   | 50.36         |
| By age           | 0-17                                     | 1,630,927 | 1,751   | 963           | 37.48      | 36.80   | 38.64         |
|                  | 18-59                                    | 2,280,983 | 2,500   | 1,285         | 52.42      | 52.54   | 51.57         |
|                  | 60+                                      | 439,127   | 507     | 244           | 10.09      | 10.66   | 9.79          |
| By ethnicity     | Can speak Purépecha                      | 136,608   | 1847    | 918           | 3.14       | 38.82   | 36.84         |
|                  | Can speak only Purépecha                 | 16,613    | 117     | 46            | 0.38       | 2.46    | 1.85          |
| By disability    | Household head is Purépecha              | 206,119   | 3839    | 1976          | 4.74       | 80.69   | 79.29         |
|                  | ADL <sup>a</sup> disability              | 212,874   | 167     | 90            | 4.89       | 3.51    | 3.61          |
|                  | Motor disability                         | 120,894   | 90      | 52            | 2.78       | 1.89    | 2.09          |
|                  | Visual disability                        | 57,350    | 45      | 24            | 1.32       | 0.95    | 0.96          |
|                  | Communicative disability                 | 18,077    | 15      | 8             | 0.42       | 0.32    | 0.32          |
|                  | Hearing disability                       | 24,592    | 16      | 11            | 0.57       | 0.34    | 0.44          |
|                  | b-ADL <sup>b</sup> disability            | 9,929     | 10      | 3             | 0.23       | 0.21    | 0.12          |
|                  | Cognitive disability                     | 9,702     | 7       | 2             | 0.22       | 0.15    | 0.08          |
|                  | Mental disability                        | 19,223    | 7       | 2             | 0.44       | 0.15    | 0.08          |
|                  | Non-disabled population                  | 4,063,589 | 4568    | 2392          | 93.39      | 96.01   | 95.99         |
| By schooling     | Illiterate 15+ population                | 305,178   | 488     | 290           | 7.01       | 10.26   | 11.64         |
|                  | No schooling 15+ population              | 332,949   | 502     | 278           | 7.65       | 10.55   | 11.16         |
|                  | Average schooling 15+ population (years) | 7.42      | 6.12    |               |            |         |               |
| By health access | Affiliation to social security           | 1,930,320 | 3024    | 1629          | 44.36      | 63.56   | 65.37         |
|                  | -IMSS <sup>c</sup>                       | 944,255   | 859     | 393           | 21.70      | 18.05   | 15.77         |
|                  | -ISSSTE <sup>d</sup>                     | 249,190   | 72      | 24            | 5.73       | 1.51    | 0.96          |
|                  | Total (occupied)                         | 1,063,163 | 1,121   | 572           | 100.00     | 100.00  | 100.00        |

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| Dwellings                        |                                 |           |       |     |       |       |       |
|----------------------------------|---------------------------------|-----------|-------|-----|-------|-------|-------|
|                                  | Have earthen floor              | 109,379   | 628   | 359 | 10.29 | 56.02 | 62.76 |
| Material conditions and services | Have electricity                | 1,044,515 | 1,107 | 565 | 98.25 | 98.75 | 98.78 |
|                                  | Have piped-in water             | 935,651   | 914   | 408 | 88.01 | 81.53 | 71.33 |
|                                  | Have toilet/latrine             | 1,013,707 | 1,110 | 565 | 95.35 | 99.02 | 98.78 |
|                                  | Have flush to pipe sewer system | 944,928   | 453   | 149 | 88.88 | 40.41 | 26.05 |
|                                  | Have car                        | 483,119   | 298   | 141 | 45.44 | 26.58 | 24.65 |
|                                  | Have computer                   | 221,817   | 47    | 9   | 20.86 | 4.19  | 1.57  |
| Assets                           | Have land telephone             | 387,881   | 325   | 139 | 36.48 | 28.99 | 24.30 |
|                                  | Have mobile telephone           | 632,042   | 244   | 112 | 59.45 | 21.77 | 19.58 |

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<sup>a</sup>ADL=Activities of Daily Living; <sup>b</sup>b-ADL=Basic ADL such as eating, dressing, and bathing;

<sup>c</sup>IMMS=Instituto Mexicano del Seguro Social; <sup>d</sup>ISSSTE=Instituto de Seguridad y Servicios Sociales para los Trabajadores del Estado

Source: Compilation based on Sistema de Información territorial ITER (INEGI, 2010)

## **Impact of Floods on Rural Populations and Strategies for Mitigation: A Case Study of Darbhanga District, Bihar State, India**

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**Abstract.** Floods are one of the most disastrous acts of nature and impact human life in multiple ways. Damages by floods in rural areas are more severe compared to urban counterparts due to poverty, limited infrastructures and access to resources and health care services. The Province of Bihar in India, with a population of 104.1 million, has 76 per cent of the population living under recurring threat of floods. In 2008, Bihar experienced severe floods in the northern region that affected more than 2.3 million people; and in 2013, they affected more than 5.9 million in 3768 villages across 20 rural districts. Floods damage property, infrastructure and further decreases access to health care and social services. This paper draws from the data collected for the primary author's master's thesis, along with his personal experience on floods as an inhabitant of a flooded community. It outlines the impact of floods in the rural areas of Bihar and highlights the continuous marginalization and exclusion of flood-affected communities. This paper will raise awareness of the issue and call for global support to advocate for more effective flood mitigation strategies.

**Keywords:** flood mitigation, health, migration, livelihood

Natural and manmade disasters pose great threats to human life. Disasters include earthquakes, volcanic eruptions, landslides, tsunamis, floods, and drought. Natural disasters have serious health, social, and economic consequences. The number as well as the magnitude of the damage caused by natural calamities has been increasing all over the world in the recent decades. Each year more than 255 million people are affected by natural disasters. In the last decade, on average, natural disasters caused damages of an estimated US \$67 billion every year (Guha-Sapir, Hargitt, & Hoyois, 2004). Since 1900, more than 9,000 natural disasters have been registered in EM-DAT and 80% of these have occurred over the last 30 years (Guha-Sapir, Hargitt, & Hoyois, 2004). Previous studies show different patterns of damage across the world. Natural disaster damages more infrastructures in industrial countries, whereas developing countries lose more lives.

### **Literature Review**

Floods are among the most disastrous natural calamities. The Intergovernmental Panel on Climate Change (IPCC) predicts that climate change is likely to cause an increase in flood hazards in many areas of the world (McCarthy, 2001). According to World Disaster Report-2014, floods remain the most frequent natural disasters. Floods accounted for 44% of deaths caused by natural disasters and for windstorms 41% (International Federation of Red Cross and Red Crescent Societies, 2014). Worldwide flood damage to agriculture, households, livelihood systems, infrastructure and public utilities amount to billions of US dollars each year, in addition to the loss of precious human and cattle life. Flood impacts human life in complicated and subtle ways, and creates vulnerable conditions, which put human lives at stake. Floods can

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destroy field crops and cause food scarcity, destroy infrastructure and create barriers to access to services, affect business activities, and exacerbate health risks in the community (Blaikie, Cannon, Davis, & Wisner, 2014; Parker, 1999; Smith, 1996).

Floods can have significant impacts on the provision of health services. Floods reduce access to health service and can cause changes in the demand in health services (Axelrod, Killam, Gaston, & Stinson, 1994; Schatz, 2008). During floods, patients generally suffer from loss of medical services and find it difficult to access health care (Curry, Larsen, Mansfield, & Leonardo, 2001). Floods not only reduce access to health care, but also increase mortality and morbidity in the affected area. In one study, 43% of people reported health-related problems following a flood (Kunii, Nakamura, Abdur, & Wakai, 2002). Floodwater often brings debris and waste products close to the community and further contaminates the local water and food supply. This could further increase the risk of communicable diseases. Contaminated water sources result in waterborne diseases such as *escherichia coli*, diarrhoea and other diseases and increases the risk for communities and farm workers (Pianetti, Sabatini, Bruscolini, Chiaverini, & Cecchetti, 2004). Faecal contamination of livestock and crops can also lead to the spread of infectious diseases (Casteel, Sobsey, & Mueller, 2006).

India is the second most flood-affected country after Bangladesh. India accounted for one-fifth of the global death count due to flooding from the 1960s to the 1980s. The annual flood damage increased nearly 40 times from the 1950s to the 1980s. In India, about 40 million hectares, or one-eighth of the country's geographical area, is flood prone (Gupta, Javed, & Datt, 2003). Each year, an average of 7.35 million hectares of land is affected, 1793 human lives are lost, 85,599 cattle are killed, and 1,452,904 houses damaged. The total loss caused by flood amounts to US \$575 million (Dutta & Watts, 2010). Bihar, which shares a border with Nepal, is the most flood prone state in northern India. Bihar has 104.1 million people and approximately 88.7% of them reside in rural areas. About 76% (79.11 million) of the population in Bihar lives under the threat of flood, and over 73% (68800 square km) of the geographical area in Bihar is classified as flood affected region (WRD, 2015). Flood in north Bihar is mainly due to heavy water flow brought by the Himalayan ranges of rivers that originate in Nepal such as the Kosi, Gandak, Burhi Gandak, Bagmati, Kamla Balan, Mahananda and Adhwara. During the rainy season, these rivers carry a high discharge and heavy sediment that drops onto the plains area of Bihar that inevitably floods North Bihar. The major flood-impacted districts in Bihar are Saharsa, Khagaria, Gopalganj, Katihar, Darbhanga, Madhubani, Supaul, East Champaran, West Champaran, Begusarai, and other districts which fall in the catchment area of these rivers (WRD, 2015). In the last 30 years, north Bihar has recorded the highest number of floods with an increase in the total area affected by the flood in Bihar. Darbhanga is a district of North Bihar that is severely affected by the annual flood. The population of the Darbhanga district is 3.93 million with over 90% of the population living in rural areas (DHSD, 2012). Biraul, Kusheshwar Asthan (East and West), Ghanshayampur, Singhwara, Keoti, Jale are the most flood affected areas in the district by the Himalaya range of rivers. The flooding typically impacts the region for 3-5 months at a time and severely affects human life and living conditions, especially in marginalised communities (DHSD, 2012).

In 2008, the primary author was part of a humanitarian assistance program and worked in the flood-affected area of Biraul and the Kusheshwar Asthan block of Darbhanga district in Bihar. The humanitarian assistance program was focused on agriculture, water and sanitation, gender-based violence, and shelter in 30 villages. In 2010, the first author conducted a study on health care accessibility in flood-affected area of Biraul block, Darbhanga district as part of his master's thesis. This paper draws on the findings from the thesis, highlights the impact of

the flood on rural communities and describes how flood perpetuates poverty and continuous marginalisation of the flood affected area from mainstream development. In this paper, the authors attempt to explain how the flood contributes to poor health, food insecurity, and a culture of poverty in the rural areas of Bihar.

### **Methodology**

This paper analyzes data collected for the master's thesis that set out to understand the healthcare accessibility in the flood affected area of the Biraul block of the Darbhanga district, Bihar (Kumar, 2011). The study adopted a mixed method approach and was conducted in two phases. The first phase of the study was conducted between April and May 2010, with the focus of understanding the impact of flood on the community in the flood-affected area through using qualitative research methods. The second phase, which was conducted from October to November 2010, focused on understanding the health seeking behaviour of the population in the area using quantitative research methods. Due to the scope of this paper, quantitative analyses will not be discussed here. Instead, the paper mainly draws on the qualitative data collected in the first phase of the study to highlight the impact of the flood on the rural community.

Participatory Rural Appraisal (PRA), observation and interview were adopted as data collection methods in the first phase to understand the impact of the flood. Participatory Rural Appraisal is a bottom up approach that enables local people to participate, share, and analyse their knowledge of life and conditions; to plan and to act (Chambers, 1994). First, PRA method was employed to bring community together and explain the impact of flood on the community. Initially, community members were invited to participate in a PRA exercise, and 23 community members agreed to participate. The PRA exercise began with a transect walk in the community, followed by a focus group discussion with participants. Transect walk is a systematic walk on a well-defined path in the community with a group of community members to explore the geography of community issues by observing, asking, listening, looking, and producing a transect diagram (Intercooperation, 2005). The purpose of the transect walk was to determine the vulnerabilities and their impact on the community associated with annual flood. During PRA exercise (including transect walk and focused group discussion), participants discussed and highlighted issues related to health care accessibility, water and sanitation, poverty, livelihood, and migration and security issues, which will be discussed in the next section.

In order to collect more data from the perspectives of agency and front line workers, key informants were interviewed to collect wider perspective on impact of flood on the family and community. A total of 14 key informants were interviewed including 3 senior program managers from two international agencies, 1 medical doctor from a local health facility, 2 front line workers (auxiliary nurse midwife and accredited social health activist), 2 community health workers and 4 community members. PRA, observation, and interviews conducted by the primary author in Hindi (local language) were manually written (verbatim) in a field journal. Verbal informed consent was taken from each research participant and confidentiality was maintained. All data gathered were anonymized, and all identifying information was removed from the transcript.

Based upon the author's personal experiences as an inhabitant of the area, data collected through the PRA exercise, transect walk, observations, and interviews were used to generate the key themes that will be presented in the next section. The synthesis of multiple data sources such as interview transcripts, field journals, observation notes, and site visits allowed the author to reduce the effect of biases from one source and improve the validity of the study.

## Findings

### Health Service Delivery

The annual flood in the Darbhanga district affects health service delivery that has a severe impact on population's health and wellbeing. In the flood-affected region of the Biraul block of Darbhanga district, waterlogging lasts 3-5 months damaging roads and impeding transportation of essential medical supplies and services. Continuous water logging in villages creates physical barriers to travel to a health facility. Irrespective of the distance of villages from a block primary health centre in Biraul, almost all of the villages face a physical barrier that decreases access to healthcare in the community. All of the public transportation services in the area linking urban area and rural areas, such as buses, auto rickshaws, and manual rickshaws were closed for service. These services are only available in the urban areas where road conditions are better. Almost every village gets cut off from the main roads and communities and families in this area are largely dependent on small boats. These small boats are generally very old and do not have safety features such as safety jackets, buckets, ropes, etc. These small boats have a limited capacity of 5-6 people at a time. However, often it was observed that the boats were unsafely transporting 10-12 people at a time. It often takes more time to reach the destination than average normal walking pace. During the PRA exercise, community members reported that these boats are often not available for marginalised communities; and during an emergency, patients often cannot reach health facilities in time to get proper treatment, which often causes unnecessary loss of life.

The unavailability of a transportation system in the flood area also affects the delivery of essential health services such as routine immunization services, antenatal and postnatal check-ups of pregnant women and lactating mothers, and family planning services. Frontline workers reported that they were unable to reach villages to deliver essential healthcare services due to water logging in the villages. They also reported that during flood season, women are unable to reach health facilities and often delivered their babies at home without any medical support and assistance. Delivering babies under supervision of a trained medical professional at a health facility has been considered safe for both mother and child. Nonetheless, women often give birth in unhygienic conditions, which puts both the mother and the child at risk of infection that could lead to other health issues and even death in extreme cases. In most of the cases, women and newborn babies do not receive home visits by health workers within 24 hours, which is recommended by national health programs.

Due to water logging in the area and unavailability of public transport, community members mainly depend on local unqualified medical practitioners during a flood. These are individuals who have been working with medical professionals for a period of time and start their own private practice. They have no formal medical training, but take on the roles of medical professionals who diagnose, prescribe medicine, and provide treatment. This can lead to misdiagnosis and pose a risk to people seeking treatment. Nonetheless, the availability of these persons in the remote and flood-affected area could have a positive impact under some circumstances. Often they are the first contact point for health care and provide first aid services based on their experiences. They also decide when to refer patients to an appropriate health facility or a hospital for proper treatment in severe medical cases.

## **Water and Sanitation**

Water and sanitation are another problem in flood-affected areas, and are often ignored by local authorities in the villages of the Biraul block. Flood and water logging in the area also influence the water and sanitation practices in the community. Floodwater and water logging in the villages contaminate the local water supply. In Darbhanga, hand pumps are the main source of water for drinking and domestic purposes. In this area, almost every hand pump is installed at ground level rather than on raised platforms. During a flood, many hand pumps get submerged in floodwater and become contaminated. Communities are often solely dependent on these water sources, which regularly cause the incidence of waterborne diseases such as diarrhoea, cholera, skin diseases and eye infections during times of flood.

The community often defecates in the floodwater due to the unavailability of a household toilet or dry land for defecation, creating further risk for waterborne disease and related infections. Floods also bring a lot of debris and waste in the water, especially dead animals, as well as animal and human waste near human habitation. According to health workers and local medical practitioners working in the flood affected region of Darbhanga, the number of cases of illness related to waterborne and vector-borne diseases increases rapidly when a flood hits. Treatment is delayed due to poor health care service delivery and limited health service access. In flood and post-flood conditions, the burden on health facilities is exceptionally heavy due to the high number of patients affected by water-borne and vector-borne diseases.

## **Livelihood**

Flooding indirectly reduces economic and agricultural production, thus decreasing social-economic welfare (Appleton, 2002). Rural Bihar has a mainly agriculture based economy and has very few secondary industries. Agriculture, fisheries and daily wage labour are the main occupations of most people in Darbhanga district. Agricultural and economic activities are largely hindered in the flood-affected region of Darbhanga, which limits agricultural productivity. Annual flood and regular loss of agricultural production of wheat, rice, corn and mango continuously impact the food supply as well as employment opportunities in the region. Reoccurrence of the annual flood also deters investment for the establishment of industries and business in the region. Lack of employment opportunities creates challenges for families to survive and brings forth the issue of cheap labour due to limited job opportunities. Daily workers often receive wages equivalent to 1.5 US dollars per day, less than the national minimum wage of 2.75 US dollars. Livestock are considered a good source of income and social security for landless families and community. Selling of livestock, such as goats and chickens, is considered a source of income to cope with the financial situation during an emergency, especially in flood. In the Biraul blocks, we observe that families often sell their livestock when they are in need of money to buy food or pay for medical expenses. During the flood, livestock often die because of flood or water borne diseases and infections, which further causes financial loss for the family.

To remedy the situation, government and stakeholders have to come up with strategies to ensure proper implementation of existing programs and schemes, which are often poorly implemented in the flood-affected region. Strategies to improve livelihood and generate steady income for marginalised communities are important for ensuring social justice and equity in rural neighbourhoods. Formulating a new program and policy for flood-affected regions involving community participation are of utmost importance.



## Food Insecurity

Reduced agricultural productivity and poor transportation systems during floods affect the food supply in the flood-affected region of Darbhanga. Additionally, lack of employment opportunity and income reduces the household income of the families and further affects their purchasing power. According to women (aged 38), in most of the marginalised communities especially, schedule caste (groups recognized by Indian government as historically disadvantaged people in India), live in a Kachha house (made of wood, non-concrete) that provides very limited space for families. These houses lack storage space for food grains during a flood. They are totally dependent on market and cash purchases during a flood. Physical barriers and the lack of transportation during flood severely affect the food supply and its network in the Darbhanga region. This causes prices of food and essential household supplies to rise in the local market. Families and communities have no option but to buy food and essential goods at very high prices, benefitting local traders. Families who cannot afford high food prices often must change their diet.

In the Biraul block, villagers in marginalised communities switch to dry food such as flattened rice, sattu etc. during the flood because of the unavailability of fuel and the high price of fresh food in the market. Lack of fuel is another reason for changes in food consumption patterns. The community generally uses wood, paddy waste, and dry plants as fuel to cook their meals, which they collect from the local area and agricultural fields. During the flood, all the dry plants get submerged in floodwater and subsequently cause fuel unavailability in the area. This increases fuel prices in the market, especially for dry wood, which is essential for cooking. These factors jointly alter the food consumption pattern and nutritional intake in the flood affected regions, especially among children and pregnant and lactating mothers. These changes in consumption patterns can have a negative impact on the health of mothers and children and could be one of the reasons for high malnutrition and anaemia in the region.

Ensuring food security is one of the prime goals of the government and there are multiple campaigns going on in the country demanding the right to food security. Various schemes and programs that aim at providing welfare and reducing poverty are underway. Employment guarantee schemes, income generation programs such as MGNAREGA (national program that guarantees minimum 100 days of work in the rural area for marginalised communities), JEEViKA (Bihar government program that promotes self-help groups for income generation activities and women empowerment), and PDS (food security system run by Government of India that provides food at very low cost to families living under poverty line) focus on providing employment and income generation to the community and marginalised populations and are becoming more evident. The program manager of an international agency reported there is poor implementation and management of government programs mainly due to corruption in the system. The lack of a flood prevention system and its implementation along with the occurrence of floods on a yearly basis are major factors that affect management and implementation of such welfare programs and entitlement schemes. Ensuring proper implementation of these programs could help marginalised communities to cope better during flood seasons.

## Migration

Food insecurity and lack of employment opportunity in the flood affected region of the Biraul block often force members of the community to seek employment in nearby states and districts. Migration is a common feature in a flood affected rural area. Nearly 14 percent of the youth population migrates to metropolitan areas and industrial cities for employment (DHSD,

2012). Most of the migration occurs in marginalised and lower income communities. Male migration is a common phenomenon in these communities. Male family members aged 16 and above often migrate to other northern and western Indian states such as Gujarat, Punjab, Maharashtra, and Uttar Pradesh for employment during flood season. Migrant male workers often work in factories, industries, and the agricultural sectors in other states. They work in hazardous conditions at very low wages. The unhygienic living conditions also impact their health, thus defeating the purpose of leaving home and seeking relief for the whole family back in the village during flood time. The migration of adolescents disturbs the educational attainment as young people stop going to school to search for jobs in other states. Young people often discontinue their education once they start migrating for work to urban cities, reducing their opportunity to get decent or more professional jobs.

Migration due to flood continually affects social and economic factors that are associated with quality of life and/or family status, in the aspects of health, education and income. Women from the marginalised community (schedule caste) reported that they often take a loan from a moneylender for expenses related to rural-urban migration such as buying train tickets, food, and covering initial settlement costs at a very high interest rate as local banks refuse to lend money to them. The average interest rate from moneylenders is from 5-10 per cent per month, which is 8-10 times higher than the local banks. The role of microfinance institutions and banks are important to ensure access to personal finance assistance. This could also prevent communities from being exploited by moneylenders if implemented properly.

### **Vulnerability to Women, Children and the Elderly Population**

Floods, like other natural disasters, have a more adverse impact on women compared to men across the world (Massey, 1994; Rashid, 2000; Rose, 1993). Women are generally invisible during disaster as they are often confined to their “feminine space” and private domain of the home (Fordham, 1998). They suffer more inconvenience when their routine gets disturbed at home as primary caregiver and chief homemaker. In Indian society, women are primarily responsible for providing care to the family, whereas the primary role of men is to earn for the family and ensure their safety. Male migration adds vulnerability to the family and decreases family support. Due to the patriarchal nature of Indian society, the absence of males or head of the family could make family members feel less secure. Also, female members of the family become responsible for managing the family, taking on various roles including providing care to children and elderly, and ensuring their health and safety. Thus, women compromise their own health conditions for those they care for, often playing multiple roles and taking on the sole responsibility for their family. That, in turn, affects their health and wellbeing, which leads to further complications for the entire family. Like women, young children and elderly are vulnerable during flooding. Many studies have highlighted the psychological impact of flood and disaster and reported that the young, elderly and women frequently experience high levels of anxiety and Post Traumatic Stress Disorder (PTSD). These psychological stresses on vulnerable populations can have a severe impact on their physical health and also influence long-term mortality (Jonkman, 2003).

### **Recommendations: Strategies for Mitigation in a Flood-Affected Area**

To minimize the negative consequences and ill effects of flooding on the rural communities, a multi-sector approach is needed to restore the life of the people to normal. This involves joint planning, monitoring and execution of policy with community and government departments. Based on discussion with NGO workers, frontline health workers, and local health officials, some of the key strategies to mitigate impact of flood on communities are as follows:

### **Provision of Clean water for Domestic Purposes**

Some of the local organisations have provided training to local communities on how to clean water for drinking purposes by using chlorine tablets. However, these strategies were largely unsuccessful due to unavailability and inconsistent supply of chlorine tablets in the areas. Regular supply of chlorine tablets for water treatment and its proper use by the community could potentially improve water conditions in the area. Additionally, the installation of hand pumps on high raised platforms instead of at ground level could help alleviate the problem as long as hand pumps remain above the water level during floods. This could potentially improve health status by decreasing water related diseases in rural areas.

### **Improving Availability of Health Care and Social Service Workers**

Properly trained personnel are crucial to deal with any crisis situations. The Darbhanga region suffers from a severe shortage of trained healthcare staff, which in turn badly affects health care delivery system. Developing and recruiting trained human resources should be a strategic priority for the government to increase coverage for the provision of health care. Filling various positions such as doctors, axillary nurse midwives (ANMs), paramedics and other health workers could help communities to restore their health and wellbeing. Additionally, to deal with crises like floods, volunteers, social workers, relief workers, and emergency teams are encouraged to work together and assess the need of the population and to provide essential health and social services. Currently, university curriculum in Bihar lacks a specialised module on social work, disaster management, and other academic disciplines that could help alleviate this problem (Thomas, 2015). These subjects need to be incorporated into the current academic curriculum. In the absence of trained human resources, it is very challenging for the state to provide effective and reliable services. Providing trained human resources are essential for social development and to decrease regional inequity.

### **Financial Protection and Employment Opportunity**

Flood affected communities are largely dependent upon loans from moneylenders to meet their on-going health care costs and living expenses. Loans at high interest rate often push families into extreme poverty that creates further vulnerability for the family. In this situation, flood affected communities require financial protection from the government to restore their lives and prevent themselves from falling into extreme poverty. Easy access to micro credit at low interest rates would allow families and communities to manage on-going expenses and living costs. This will prevent communities from paying high interest rates to moneylenders and help them to contribute towards saving for emergencies and future needs. Many local organizations help communities to form women's self-help groups to engage them in saving and micro finance related activities. This strategy has a limited impact on their lives in relation financial protection, especially for flood-affected communities. During flooding conditions, all families have similar needs and self-help groups are not a solution to the problem. However, the involvement of regulated financial institutions could have a huge impact by providing families with secured loans.

Flooding continuously affects agricultural and economic activities in the Darbhanga region. This further leads to unemployment in the region; and as a result, many people migrate to cities for employment. Migration has very negative consequences on family, especially women and children. It affects the stability and structure of the family. Financial investment, establishing new industries and creating job opportunities for the affected population could help restore their economic status up to a certain level. Migrant workers often work in very

harsh and vulnerable conditions that lead to death and injuries. Job opportunities in the local area will allow them to live with their family and community, which will help them to nurture their family and social relationships. The parent-child relationship is important for children to learn social values and provide a sense of safety and security to children. Due to migration, the family relationship is disrupted and often creates personal and social problems.

### **Designing Special Educational Curriculum for Affected Communities**

Level of education has a close correlation with the economic status and income of the family. Flood affects educational services severely, which causes interruption in educational service to children. Both teachers and students are unable to attend school due to the waterlogging situation. As a result, these children form a pool of unskilled labour, which can be exploited by the urban counterparts. Most dropouts continue to work in agricultural fields to supplement income for their family. Overall, children from a flood-affected area require special educational modules and curricula, which should be flexible and tailor-made for the circumstances. This will help retain and continue education for children and youth without any interruption. In this regard, further research on pedagogy and learning is required to develop the educational curriculum and modules.

### **Community Empowerment and Local Planning**

Various authors have highlighted the importance of community participation in immediate response during crises (Chambers, 1994; Pandey & Okazaki, 2005; Thomas, 2015). Building local resilience and adopting the strength-based and empowerment approach can help lift families and communities from the risks and vulnerable conditions in multiple ways. Building community capacity to develop and execute a community contingency plan, together with disaster preparedness plans, could save human lives and injuries. Training, such as an early warning system, evacuation, search and rescue, first aid, relief and coordination, and a temporary housing relief plan could help deal with immediate and urgent needs more effectively (Krzyszhanovskaya et al., 2011). In this context, the help and support of local community based organization (CBOs) and voluntary organizations become very important to local communities. Developing local organizations and building their capacity and skills could be another strategy towards community empowerment for mitigations (Allen, 2006).

### **Infrastructure Development**

Recurrence of floods has severely affected the infrastructure development in the region, which has continuously hampered the development process. A strong infrastructure development is necessary to tackle some of the issues rural, vulnerable, and marginalised communities are facing. Building a flood resistant infrastructure such as connecting roads, health facilities, schools and other institutions on high raised platforms could help communities and villagers to access health and social services. Besides, constructing health facilities on a raised platform or high-rise area could be a good strategy to keep health infrastructure or facilities safe from floods. New construction technologies and designs can be utilised to build a stronger health infrastructure that can withstand a flood and minimize the damage done.

Additionally, utilizing motorboats in rural areas can ensure that doctors and health care workers are able to reach difficult areas during a flood. Improving health care access is very challenging in the flood-affected area. Social services, especially healthcare and family-based services are very much essential services that help communities to run their day-to-day life, and infrastructure is essential for guaranteeing service delivery. Building reliable roads and

deploying motor boats would certainly be very helpful for a community to access essential services and carry out daily activities in times of a flood.

### **Political Mobilization**

The development of a flood-affected area has been largely ignored and does not get enough attention. Re-occurrence of floods and the continuous loss of infrastructure and property have diverted the business and industries to other regions. One of the major reasons for underdevelopment of the Kosi regions (i.e., Kosi River area) including the Darbhanga district was the lack of political interest in the development of the flood-affected region. Representatives of the Darbhanga region failed to mobilise the necessary political support to improve the condition of the population. Lack of leadership and political mobilization towards development in the flood-affected community could further promote rural backwardness. The issue of the flood-affected community has never been a priority of the state, and one of the main reasons is the lack of capable and experienced leadership.

Political mobilization is essential to mobilise political support from the government and advocate for the rights of people. There is need of political mobilization and social action to push disaster prevention into the state's agenda. It is important to include the development agenda of flood regions in state and national policy. In this regard, it would be important to organise and mobilise academic institutions, as well as local and regional organisations to come forward and advocate for the rights of the marginalised and flood affected communities to improve their life conditions.

### **Conclusion**

Annual flooding in the Darbhanga region has slowed down the development process and pushed marginalized communities into extreme poverty and exclusion. Water logging in the area of the Biraul block, which usually lasts 3-5 months, adversely impacts the social and economic life of the communities. It also negatively affects health care delivery service and access to healthcare. The on-going loss of infrastructure, property, human life, crops, agricultural land, and livestock during floods results in huge personal and economic loss. Continuous damage to infrastructure and reduced access to health and social services makes it difficult for rural communities to get out of extreme poverty or have a new start. They continue to suffer and cope with extremely difficult living conditions in the Darbhanga region. Vulnerable communities witness women, children, elderly people, individuals with mental health issues, and individuals with disabilities struggling with minimal support from their government. Mobilizing political support and empowering communities is essential to accelerate the development process in the region. It is high time that we advocate for the urgent needs of these rural communities and explore practical and feasible solutions to flood related problems in these areas.

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## Colonial Subjugation and Human Rights Abuses: Twenty-First Century Violations against Brazil's Rural Indigenous Xukuru Nation

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**Abstract.** This article addresses the struggle of the *Xukuru do Ororubá* indigenous people in rural Pernambuco, Brazil as they organize to stop historical violence against them and work to regain their constitutional right to their ancestral lands. Since Portuguese colonization and throughout Brazil's nation-building, the Xukuru have been particularly at-risk for human rights abuses. With the creation of the United Nations in 1945 and the drafting of the Universal Declaration of Human Rights (UNDHR) in 1948, member states have often provided rhetorical validity to human rights documents and conventions – rhetoric that is often ignored upon return to their sovereign territories. It is well understood that international human rights documents are based on constructed realities that historically validated Western European notions about the rights of individuals (Said 1994, 1979; Ignatieff, 2001; Niezen, 2003). As a member of the United Nations and a signatory of international human rights documents, Brazil has turned a blind eye to human rights norms as applied to indigenous peoples whose rural locations leave them vulnerable to persecution. This article: 1) situates the Xukuru Nation's rural location and presents a brief history of Portuguese colonial contact with Brazil's Indigenous peoples; 2) briefly discusses the Indian movement in Brazil as a background for the contextualization of the Indigenous Xukurus' fight for the return of their ancestral lands in the *Serra do Ororubá*, in the state of Pernambuco in the late 20<sup>th</sup> and early 21<sup>st</sup> centuries; and 3) articulates the human rights abuses perpetrated against them by the Brazilian Nation-State.

**Keywords:** indigenous, Xukuru, human rights, nordeste, Brazil

Brazil's *Nordeste* (Northeast) region is comprised of nine states that include Maranhão, Piauí, Ceará, Rio Grande do Norte, Paraíba, Pernambuco (and small islands off the NE coast), Alagoas, Sergipe, and Bahia. Stereotypes about the *Nordeste* are based on historical lore about Salvador da Bahia, sugar plantations, slavery, *cangaceiros* (bandits), *bandeirantes* (slave hunters and explorers), and the *latifúndios* (captaincy colonies) and their autonomous and privately owned Captain-majors (wealthy landed elites) appointed by the Portuguese Crown. Despite historical droughts, sugar cane, agriculture and cattle ranching are common occupations to this day. The Brazilian *Nordeste* is notoriously described as a region that is riddled with poverty and plagued by intense droughts, but rich in historical lore of both African and Indian peoples.

The Portuguese first landed on the coast of Bahia in 1500, and found the continent inhabited by indigenous peoples. Estimates vary regarding the population of Brazil's Indians in the 1500s, ranging from 500,000 to over two-million indigenous people who spoke over 100 diverse languages (Silva, 2008; Skidmore, 1999). Bahia, one of Brazil's most famous cities, is part of Brazil's *Nordeste*. As one of the oldest colonial cities in the Americas, Bahia was the first colonial capital of Brazil, and was a major sea port for the exportation of sugar and importation of slaves from Africa. Recife, another historic colonial city, and the current capital of Pernambuco is about 120 miles (193km) from Pesqueira (population 66,153). Pesqueira is the closest city to the Xukuru whose land lies adjacent to

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it in the rural mountainous regions of the *Serra do Ororubá* (Mountain Range of the Ororubá) (IBGE, 2015). The Xukuru word *Ororubá* signifies a type of wood, and also refers to the numerous birds in the region. Hence, *Xukuru do Ororubá* represents respect for nature and provides symbolic meaning to Xukuru identity (personal communication, Cacique Marcos Xukuru, 2009 & 2016).

In 1654, colonization of the region inhabited by the Xukuru occurred when the Portuguese Crown provided large land allotments (captaincies) in the area for cattle ranching to Portuguese landed elites. In 1661, the Catholic Church founded the Indian *aldeia* (village) of *Ararobá de Nossa Senhora das Montanhas* and built a church that would prove to be a key player in the battle for the return of Xukuru lands. Cattle ranchers were provided with Indian laborers from the mission. In return for labor and a small plot of arid land, Indian laborers worked for little to no pay, surviving by practicing forms of subsistence farming. In 1762, according to historic records, the *aldeia Ararobá de Nossa Senhora das Montanhas* was renamed *Cimbres*. Multiple requests by the Xukuru and their relatives were made to provincial authorities in the mid-1850s to return their lands to them. The city council of *Cimbres* argued that after 108 years, the Indigenous Xukuru no longer existed since they had been assimilated through miscegenation and were now referred to as *caboclos* (*mestiço*, a poor farm laborer of mixed blood and of low social class) (Gomez, 2000; Renato 2007; Silva, 2008; Stephens, 1999).

Population growth in *Cimbres* resulted in another name change in 1880, when the *aldeia* of *Cimbres* was abolished and renamed the municipality of *Pesqueira*. Cattle ranches (referred to in this research as wealthy land owners) continued to live on Xukuru land for the next century, using Xukuru Indians as surf laborers. Some Xukuru, defeated over time by the Catholic Missions built on their land, and by the Church's persistent efforts to Christianize them, fled the area for more remote regions in the interior. Others stayed and worked for cattle ranchers as their surfs, continuing to live on small pieces of arid land. Over time, the Xukuru intermarried with African slaves and Portuguese peasants and became part of the miscegenated *mestiços*. They were referred to as *caboclos do Orubá* (Gomez, 2000).

Today, the drive from *Pesqueira* to Xukuru lands takes approximately thirty-minutes by car. The Xukuru's ancestral lands were returned to them after years of struggle that began during the onset of the Brazilian Indigenous movement in the mid-1970s, and after the newly established Brazilian democracy of 1988. The movement was supported and fortified by the help of Non-Governmental Organizations (NGOs) in regional areas where Indian ethnicities lived in virtual isolation from other Indian peoples. As the movement expanded beyond local rural communities, it spread into a national movement. During this period of social and political change, the new Brazilian Constitution of 1988 provided a progressive chapter (chapter 8) ensuring Indian peoples' rights to live on, but not own, their ancestral lands (Brazilian Constitution, 2010). In 1991, a Constitutional Decree was added allowing for the return of Indian lands for their ownership (Brazilian Constitution, 2010).

A brief discussion on two polemical issues related to social justice research among rural peoples is needed to clarify the importance and difficulty involved in working with Indian peoples in Brazil. First, social scientists and activists (anthropologists, social workers, and sociologists) face unique challenges working in rural areas. Rural peoples have political and social circumstances not faced by most urban populations, including a lack of professionals willing to work among them in isolated locations.

In the case of the Xukuru, human rights abuses and the dangers of investigating them narrow the number of social scientists willing to risk such work. In addition, rural locations are often synonymous with isolation. Lack of financial resources allocated for studying rural peoples is common; for Indians in Brazil, this is a persistent problem. Additionally, lack of funding is often the cause of a litany of hardships commonly found in rural areas that include a lack of transportation for Indian peoples, hunger, poverty, alcoholism, drug addiction, poor health, mental health problems (including suicide), domestic violence and child abuse (Lima de Portal, 2009). In the case of the Xukuru, human rights violence perpetrated against them by the state for their human rights activism makes research, observation, and reporting difficult (and dangerous) for the social scientist. If the state is the perpetrator, quite often state and federal organizations charged with serving Indian people are also either somewhat indifferent to their plight or antagonistic against them as clients. Hence, the state is likely not to be supportive of research that exposes inequalities that harm marginalized peoples (Benson & O'Neill 2007; Bourgois, 1990; Feldman, 1995; Gledhill, 1999; Kovats-Bernat, 2002; Scheper-Hughes, 1995).

Second, the treatment of the Xukuru in terms of their land and their identity as marginalized people needs explanation. The identity of whom the Indian was, and as argued in this article still is, in the Brazilian national identity is intimately linked to their land and to their resistance to assimilate into Brazilian national identity at large. In part, Indian identity, including Xukuru identity, is contentious due to nation-state designations that define them, and also due to indigenous constructions about themselves which draw upon their history of social marginalization and human rights abuses (Jones, 2011; Melatti, 2007). Current international indigenous human rights documents articulate that Indian identities are understood to be as authentic as Western European identities (Basso, 1979; UNDRIP, 2008). As such, social justice research does not seek to authenticate Indian identities, but rather to support them through the practice of ethno-science using the methods of observation, documentation, and dissemination of fieldwork (Scheper-Hughes, 1995).

### **A Brief History of Portuguese Colonial Agendas, the Brazil Indigenous Movement, and the Xukuru**

According to anthropologist Guillermo de la Peña, the term *Indio* referred to the peoples found in the Americas; and during Portugal's colonial control over Brazil, the term came to define the Indian as a "lower-caste" human (de la Peña, 2005). Such pejorative meanings can be found in early human rights documents such as the assimilationist perspective of the 1957 International Labor Organizations (ILO, 1957) Convention 107, which defined indigenous peoples in terms of evolutionary cultural hierarchies. The ILO 1957 Convention designed notions of Indian rights based on colonial perspectives that rendered indigenous peoples as less advanced in terms of stages of cultural evolution. Based on these assumptions, state policies reflected racist assimilationist perspectives that embedded Indian people into national policies designed to assimilate or exterminate them (Gomez, 2000; Hodgson, 2002; Mikulak, 2011; Ramos, 1998). The formation of the Indian by nation-states and by early human rights documents in the United Nations were pejorative, constructed largely from Western European pseudo-scientific notions about sociocultural evolution. As this paper demonstrates, Indian identities have been, and continue to be, pejorative because it has benefited nation-states in their appropriation of territories and their resources. This research agrees with Souza Lima who defines the term "Indian" as "...a set of ideas concerning the incorporation of Indian peoples into nation-states" (Souza Lima, 1991, p. 239).

After 1889 (slavery officially ended in 1888), the Republic's colonial agenda included an unofficial policy to "whiten" its population by homogenizing its diverse ethnicities. Historian Thomas Skidmore has written extensively on this polemical topic (Skidmore, 1999; Hoffman French, 2004), the complexities of which are relevant, but too lengthy for this article. The policy led to Brazil's *mestiço* population and to a new Brazilian national identity (Mikulak, 2011; Skidmore, 1995) valorizing the *mulatto*. In conjunction with the Brazilian government, the Indian Protection Service (SPI, founded in 1910) implemented a new state policy whose ultimate goals were to end Indian historical memory and identity, and to increase Indian labor, while aggressively controlling Indian activities and lands (Ramos, 1998; SPI, 1910). While the *mulatto* was ultimately the ideal Brazilian identity, Indians were problematic not only due to their isolation and resistance to Portuguese oppression, but also due to their status as wards of the state.

The Crown deemed Indians as ethnically distinct and developed civil codes that defined them as incapable of meaningful civil participation. Destroying Indian cultures and religions was seen as necessary if their assimilation was to occur. Part of the SPI's official responsibility was to "civilize" Indians by assimilating them, or by carrying out guerilla violence against those seeking claims for land used for Indian missions (MacDowell Santos, 2009). Indigenous language use, cultural practices, and religious rituals were forbidden and their use and practice were reported to the SPI. In 1944, a report was written by an SPI official stating that 2,191 *Xukuru do Ororubá* "...danced the 'Toré' and secretly partook in rituals to avoid threats and persecution by the Pesqueira city police" (MacDowell Santos, 2009, p. 6). The *Toré* is a fundamental element in the cosmological system of the *Xukuru* and its meaning is multifaceted. The relations between the sacred and the profane are mediated by a shaman who handles all aspects of *Xukuru* life including political decisions, social organizations, and healing. The *Toré* is the foundation upon which the *Xukuru* built their resistance movement, their *retomadas*, and their political organizations. Such cultural expressions were forbidden, feared, and viewed as pagan. Persecution of the *Xukuru* was ongoing and persistent (personal interviews with the *Pajé*, 2011).

In 1967, the SPI was officially terminated and replaced with the National Foundation of the Indian (FUNAI, *Fundação Nacional do Índio*, Brazil's governmental organization for Indian affairs). The continued purpose of FUNAI was to integrate and assimilate Indians into Brazil's national *mestiço* population. Indeed, the Minister of the Interior, Rangel Reis, stated in 1976:

Let us seek to fulfill the objectives fixed by President Geisel, so that, through concentrated work among various Ministries, within ten years, we can reduce to 20,000 the 220,000 Indians existing today in Brazil, and within thirty years all of them shall be duly integrated into the national society (Warren, 2001, p.54).

Today, the murder and assassination of Indian leaders and human rights defenders continues (Amnesty International Annual Report, 2011; 2014). These cases include the continuation of discrimination, threats, and violence particularly within the context of ancestral land disputes. Indigenous populations are at-risk due to their ethnicity AND their isolation in rural areas where they seek the return of ancestral lands. For example, President Dilma Rousseff presented a decree that facilitates the acquisition of licenses to large companies for environmental exploitation that will benefit development projects, many of which are on indigenous lands or lands of traditional non-Indian peoples in rural locations, including existing *Quilombola* communities. Indigenous peoples such as the *Guarani-Kaiowá* in the state of Mato Grosso do Sul continue to live in fear of being

attacked. Amnesty International's (2005) "Foreigners in Our Own Country: Indigenous Peoples in Brazil" reported:

In areas where there has been an identified and recognized need for federal protection of Indians and their land, the authorities have failed to take action despite the warnings of senate commissions or the Organization of American States, as in the cases of the *Cinta Larga* in R ndonia and the *Xukuru* in Pernambuco. A failure to punish those who have carried out attacks and killings in the past, has laid the foundations for the violence of the present (Amnesty International, 2005, p. 1).

Debates in Brazil during the 19<sup>th</sup> century focused on the conundrum over Indian rights to land; that is, whether or not such rights were inherited or given to them by the state. For example, the 1934 Brazilian Constitution provided only a guarantee that Indian lands could be inhabited – not owned – by the Indian, and once vacated (as designed by the nation's assimilation and miscegenation policies), those lands revert to the state (Brazilian Constitution, 1934). Hence, such territories were conceived as "empty," available for possession by the state to use, develop, or exploit as it saw fit (Lombardi, Simoni, Estanislau & Arruti, 2013; MacDowell Santos, 2009).

Due to civil and federal laws and nation-state constructed identities about Indians, gaining title to their lands continues to be difficult, and at times impossible. Consequently, non-Indian land owners aggressively registered Indian lands in their names, a tactic that has proven successful for them. It was in this manner that the confiscation of *Xukuru do Ororub * communal lands by non-Indians occurred. Their marginalization within Brazilian society, their rural location and social and political isolation, and their staunch resistance against state mandated rights to their lands made their struggle a dangerous one. The importance of indigenous historical knowledge for social scientists and those working for social justice in the international sphere is critical since state policies evolve from historical social processes. Changing local perceptions that generate social inequalities requires addressing the historical, cultural and social processes that produced them.

Until the late 1980s, only a handful of Xukuru had small pieces of land where they scraped out a living while also paying rent to wealthy non-indigenous farmers for land that was once theirs. Since the mid-1980s, the Xukuru have endured threats, illegal arrests, beatings, and assassinations. During the period of this research, 2007 to 2011, the Xukuru faced the ongoing criminalization of their people within the Brazilian courts, and continued to live with the real potential of violence and additional assassinations from vengeful elites who continue to threaten them, yet they vowed to continue their activism (Amnesty International, 2005; 2011). Social scientists, social justice advocates, and NGOs play a critical role in bringing attention to the media and to national and international court systems regarding the perpetration of violence by state actors against indigenous human rights defenders seeking their national and international human rights.

### **International Human Rights**

Three years after the end of WWII, the 1948 Universal Declaration of Human Rights (UNDHR, 1948) laid the groundwork for equality under the law for individuals and collectives from the destructive capacities of fascist and nationalist regimes, and made it clear that all peoples could claim a right to social, economic, cultural, and political equality (Minde, 2008). The indigenous

movement called for a special category for human rights that disempowered nation-states' ideologies of assimilation and homogenization of their peoples.

The Indian movement (Indian is used synonymously with indigenous in this research) made significant gains in challenging and broadening indigenous rights in the local, national, and global arenas. In 2007, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) was ratified in an atmosphere of controversy (UNDRIP, 2008). The document addressed questions of the pragmatic meaning of self-determination, such as to which populations this term applies, and what self-determination means in terms of state rights, state sovereignty, and national security. More than any other human rights document originating within the United Nations, UNDRIP requires rather immediate pragmatic applications in terms of indigenous collective rights within nation-states, particularly regarding land rights, resource appropriation, health, educational, and economic rights, and political participation at national and local (particularly rural) areas where state and legal infrastructures are least likely to monitor rights abuses (UNDRIP, 2008).

The indigenous rights movement challenged 19<sup>th</sup> century constructed notions of racial inferiority about Indians, and demanded that collective rights apply across the board to all indigenous peoples: their sustainable living, food security, social cohesion, and cultural identities (Hanchard, 2005; Mikulak, 2015; Ramos, 1998). The movement also added depth to social science studies of individual agency identity formation, and everyday praxis, assisting researchers and professionals working for the welfare of Indian peoples. An important aspect of indigenous peoples' human rights is their need for social cohesion and cultural identity as a global community. Indigenous peoples share experiences of colonial practices that sought to eliminate their perspectives and cultural world views, and often led to the extermination of entire communities (Graham, 2002).

The Brazilian Indigenous movement shared the need for a global community. The Indian movement was supported and essentially launched by the creation in 1972 of the Non-Governmental Organization (NGO) *Conselho Indigenista Missionário* (CIMI, The Indigenous Missionary Council) in Brazil. CIMI recognized the isolation experienced by indigenous peoples who are separated by large distances between rural areas where they lived. CIMI emerged from the Liberation Theology movement in Brazil, and began providing assistance by organizing and sponsoring the first conferences of indigenous peoples, bringing diverse Indian peoples together to discuss the problems they had experienced by providing transportation, lodging, and food (CIMI, 1972; Ramos, 1998). The common issues shared by indigenous groups in Brazil led to the development of a powerful awareness about the similarities of the injustices that groups experienced – both individually and collectively. Accordingly, strong leaders emerged who spent time politicizing and educating their people about the legacy of colonial violence perpetrated against them, encouraging a resurgence of a collective historical memory about their ancestors, religions, rituals, and territories.

The geographically scattered and rural nature of Brazil's Indigenous peoples, and the lack of organizational structures that could have coordinated activists and directed policy and procedures back to local communities, explain why indigenous organization and politicization has been so difficult. The energy and political organizational capacities of (NGOs), social scientists, university professors, and social workers brought the Indian Movement to a point of effective action at the level of state policies regarding their rights, both in Brazil and in the international arena.

### **Xukuru Activism, Reconstruction of Identity and Self-Determination, and State Violence Against the Xukuru**

Until the late 1980s, only a handful of Xukuru had even a scrap of land. “Most have for decades practiced subsistence farming, paying rent to *fazendeiros* for land of which they themselves were the traditional owners” (Hemming, 2003b, p. 597).

Archives dating to the 16<sup>th</sup> century provide proof of Indigenous Xukuru people living on their ancestral lands (Hohenthal, 1958). At the time of the first Portuguese contact in the 1500s in Brazil, Xukuru territory encompassed a vast area, which was slowly absorbed by the Portuguese Crown through colonial decrees, until completely appropriated in the 1700s (Hemming, 2003a).

In 1984, the Xukuru began active campaigns to regain territories that were confiscated by the Brazilian state since the 1700s. By the mid-1990s, death threats against Xukuru leaders by ranchers who would lose their land if the Xukuru were successful were common. In spite of these threats, no protection was offered by the state to those identified for execution. The Indian chapter in the 1988 Brazilian Constitution called for protection of Indian people by state agencies. The responsibility for protecting the rights of indigenous peoples falls on FUNAI, a federal organization that has a long history of internal corruption, misappropriation of funds and resources, and explicit violence against Indian peoples (Graham, 2002; MacDowell Santos, 2009; Stocks, 2005; Warren, 2001). While the new constitution provides for protections from human rights abuses against Indian people, the agency tasked with protecting them, is structurally flawed: FUNAI inherited and accepted the colonial notions about the inferiority of Indians assumed by the SPI. The federal government’s rhetoric about Indians as backward, childlike, undisciplined, and economically marginal justified their alterity in terms of Brazil’s progress as a developing nation. Hence, Indian people needed to be managed and given a protected status until such time that the state deemed them to be fully assimilated in to civilized Brazilian society. Both the SPI and FUNAI have left a litany of neglect, persecution, and abuse in their wake (Ramos, 1998; Warren, 2001). Indeed, the famous *Figueiredo* report of 1967 (ironically commissioned by the Brazilian Military Dictatorship) documented the degree to which violence against indigenous peoples was exposed. Brazil’s military regime, known for its brutal torture and oppressive practices, reported on the horrors perpetrated against indigenous peoples (Cockcroft, 1989; Davis, 1977). Unfortunately, the carnage continues today.

The Xukuru, referred to as *caboclos* by Brazilians-at-large in the 1980s, still had small parcels of land on which they practiced meager subsistence farming; moreover, they still paid rent to wealthy non-indigenous farmers. Their Indian language, traditions, rituals, and world views were virtually non-existent, with a couple of exceptions; they managed to maintain their traditional practice of the *Toré* (religious practice), and they held onto their passion to retain their Indian identity, and their reverence for their *Pajé* (spiritual leader) and their *caciques* (leaders) (Fialho, 1992; Hemming, 2003). Prior to Xicão’s assassination, he worked closely with the *Pajé* and a trusted female school teacher, walking the long distances to each of the 24 *aldeis* holding meetings with a few people who were willing to begin organizing their people to achieve the return of their land. The rural environment and mountainous regions of the *Serra do Ororubá* were inhabited by non-Indian farmers, mostly wealthy elites who spent time living in the city of Pesqueira, leaving the work of cattle ranching to their Indian *caboclos*. The long distances between ranches, and the danger of organizing his people to join together as a collective to claim their lands was dangerous and difficult. Ranchers threatened death

to Indians who had been contacted, or promised they would never find work again (personal communication with Cacique Marcos Xukuru, 2010; 2011).

In 1989, traditional indigenous lands (including Xukuru land) were finally under consideration for the process of land delimitation and demarcation. The growing Indian movement in Brazil and the chapter on Indian rights in the new Brazilian Constitution required the fledgling Brazilian democracy to begin demarcating Indian lands. Cacique Xicão Xukuru was a key player in the fight for Indian rights in the Northeastern state of Pernambuco, and he forged the way for the long, bloody – but eventually successful – fight for the return of his people’s land (Fialho, Neves, & Figueiroa, 2011).

In 1995, the physical demarcation of their land was completed; yet by 2005, the Xukuru occupied only a fraction of their land due to compensation claims of wealthy and politically powerful farmers who contested the demarcation. At this point in time, Xukuru land was still not formally (legally) registered, leaving them vulnerable to increasing violence by ranchers, the intent of which was to intimidate and stop the Xukuru movement to continue their fight for their land. Xicão knew that their activism had to increase, since their ancestral lands were aggressively being purchased and developed by wealthy large-scale ranchers expanding their livestock herds. In Brazil, land is used for production, and increased livestock herds generated large sums of money for the region. These same ranchers were deeply entrenched in local politics and were supported by regional development groups and agencies with the aim of expanding upon the beef industry. The second economic industry in the region is religious tourism. The historic church in *Cimbres* was known as a religious pilgrimage site based on the supposed sighting of the Virgin Mary by two young girls in 1952 (personal communication with Cacique Marcos Xukuru, 2010; 2011; MacDowell Santos, 2009).

The village of *Cimbres* and its historic Catholic church, *Nossa Senhora das Graças*, is on Xukuru ancestral lands and was a main target for the development of a religious tourism site, supported by wealthy farmers, Politicians, and city councilmen. Due to the potential threats posed by farmers purchasing Xukuru land and the growing movement by politicians and city developers to increase religious tourism in Pesqueira in late 1989, several Xukuru leaders wrote a formal letter to FUNAI demanding protection from armed non-Indian cattle ranchers who threatened death to Xukuru leaders and community members. While their letter and their activism led to eventual demarcation in 1995, FUNAI did nothing to protect the Xukuru from death threats by local farmers.

Land demarcation often leaves indigenous peoples vulnerable to the special interests of local, national and multi-national corporations. Their rural locations make them even more vulnerable to violence and the impunity of their perpetrators. Businesses and corporations can seek to extract resources from land under consideration for homologation, most often with the support of the Brazilian government. The personal dangers many Indians have faced include assassinations, disappearances, rapes, and fatal beatings because they have participated in the *retomadas* (strategies to retake their lands by camping on them until the ranchers leave). By design, each phase of the process to return indigenous lands is complicated, and each phase has been plagued by local legal problems and violence (Fialho, Neves, & Figueiroa, 2011). The land demarcation process consists of five phases: a) identification and delimitation; b) challenges to third parties; c) decision of the Minister of Justice; d) approval by Decree of the President of the Republic; and e) recording of indigenous land (GAJOP, 2011).

Yet another blockage in the demarcation process of Xukuru land occurred in 1988 when the federal government ruled in favor of an agricultural project submitted by a local farmer, Otávio Carneiro, in the region where the *Xukuru do Ororubá* live. This ruling led to a more intensive mobilization of the Xukuru by Cacique Xicão Xukuru, and the Xukuru *Pajé* (spiritual leader) (Mikulak, 2012). As part of their mobilization, they solicited the Federal Public Ministry to open a civil investigation into the failure of FUNAI to demarcate the territory Otávio chose for his agricultural business.

In 1989, Xicão's renewed efforts led to pressuring FUNAI to create a working group to investigate the identification and the demarcation boundaries of *Xukuru do Ororubá* land. At that time, the working group identified 282 residences inhabited by non-Indians who were living on 56.2% of the land that was demarcated as Xukuru territory. Most of the non-Indians were farmers and families of politicians (Almeida, 1997; Fialho et al., 2011; Marques, personal communication, June 25, 2010). During 1989, and in accordance with the 1988 Constitution and the processes of homologation, the 282 residents were to be removed, with the "owners" compensated for their loss. The ruling to remove non-Indian residents increased the violence against the Xukuru, who were not receiving the protection that FUNAI was mandated to provide them as the federal Indian agency. In retaliation, ranchers on Xukuru land registered their legal claims within the courts against the return of lands already demarcated to the Xukuru.

Additionally, in the 1990s the Xukuru political process of laying claim to their ancestral lands through the *retomada* process increased. Each *retomada* resulted in scores of Xukuru squatting on the ranchers' property until the courts homologated their lands. *Retomadas* occurred in isolated areas, where police protection is most often not available. FUNAI left the Xukuru to face the inevitable violence of ranchers that was, for all practical purposes, invisible. Without the NGOs and other non-Indian observers, evidence of such violence would not have been collected. Over 43 *retomadas* were carried out, and during this process farmers frequently shot at the Xukuru, which made it difficult – if not impossible – for food and supplies to get to those participating in the *retomadas*. Their isolated location often led to physical violence by ranchers who hired men to beat and verbally shout death threats at the participants.

After the intensity of the *retomadas* in the 1990s, the physical demarcation of Xukuru land was finally determined in 1995 to be 27,555 hectares (68,090 acres), which was far less than Xukuru historical memory requested (Brasileiro, Ferreira, & Fialho, 1998). The lands inhabited by the Xukuru Indians originally covered an area of approximately 40 square leagues (93,240 hectares or 230,399 acres) (Fialho et al., 2011). In other words, the Xukuru received only 30% of their original territories.

### **Political Context for the Criminalization of the Xukuru**

The Xukuru chose the strategy of using *retomadas* because they provided a more public form of resistance and increased the force of the Ministry of Justice's ruling in recognition of their territorial rights (Fialho et al., 2011; MacDowell Santos, 2009; Mikulak, 2012). The *retomadas* worked to solidify and reinforce Xukuru identity through the practice of the *Toré*, and the experiences and messages received through trance from the *encandadas* (spirits) who inhabit nature, and in particular the ancestral lands of the Xukuru. While the *retomadas* at times gained the attention of the local press, this period proved to be deadly for the Xukuru (personal communication with Cacique Marcos Xukuru, 2010).



Soon after the first *retomada*, the first death associated in the Xukuru fight for their land occurred with the 1992 assassination of José Everaldo Rodrigues, the son of the man who is the Xukuru *Pajé* (spiritual leader). Only three years later in 1995, the second assassination occurred: Geraldo Rolim, the lawyer assigned by FUNAI to work on behalf of the Xukuru was murdered (Fialho et al., 2011; Mikulak, 2012).

In 1996, contrary to Article 231 of the 1988 Brazilian Constitution, President Fernando Cardoso set in motion a decree that stalled demarcating indigenous lands by introducing the “contradictory principle,” which allowed for non-indigenous claims against territories designated as historically indigenous. Dubbed the “genocide decree” by indigenous leaders, Decree 1.775 undermined the land rights that are essential for the survival of their cultures and allowed state governments and businesses to contest the jurisdiction of over 49 million hectares (over 121 million acres) (Hemming, 2003b). By the decree’s April 8, 1996, filing deadline, over 530 parties had challenges pending with FUNAI, and 272 claims had been made against land demarcated for the Xukuru (Decreto No 1.775, 1996; GAJOP, 2011; Hemming, 2003b; MacDowell Santos, 2009).

While it is perhaps difficult to comprehend how a legal constitutional article can be quickly overturned by President Cardoso’s decree, such flip-flops are historically not uncommon when indigenous peoples’ rights are at stake. Reasons for such actions are commonly justified based on the ideology of political parties in office and the economic practices supported by national and international interests. In the 1980s, for example, hydroelectric projects and mining for gold received large amounts of funding from the World Bank and the International Development Bank. Both national projects have been disastrous to indigenous peoples whose lands were exploited, flooded, and expropriated by the Brazilian nation-state (Ramos, 1998, p. 208). Indeed, the rights of Indian people as outlined in the new constitution, have proven to be a continuation of broken promises. Article 67 in the new constitution stated that all indigenous territories were to be demarcated within five years of its ratification. While the new constitution sought to redress the crimes of slavery, genocide, murder, racism, and land theft, indigenous peoples find that more than 20 years have passed and their lands remain out of their reach.

Formal objections to the demarcation of Xukuru land numbered 272. In other words, 272 *fazendeiros* were pressuring FUNAI to work with them and against the claims of the Xukuru. Among those who pressured FUNAI was the mayor of Pesqueira, the city council, and local farmers. Those objecting to the return of land to the Xukuru took their cases jointly to the supreme court of justice, which upheld them and opened their claims for further investigation (Fialho et al., 2011; MacDowell Santos, 2009; Mikulak, 2012).

Due to the invasion of new *fazendeiros* and their families, who bought and sold additional land that had been designated as Xukuru (in an obvious attempt to stop the land return process), the supreme court’s involvement spurred increased tensions and violence against the Xukuru. In reaction, the Xukuru began their *retomadas* with renewed vigor; numerous death threats against the life of Xicão began to intensify; Cacique Xicão Xukuru was assassinated on May 21, 1998. His death was a horrific setback to the Xukuru community, and for a time, their activism was slowed.

A new Cacique (leader) was chosen by the *Paje*, the spiritual leader, and Cacique Marcos Xukuru (son of Xicão) was chosen to lead his people. Despite his youth, Marquinho, who was in his early twenties when he became Cacique, has gained the respect, admiration, trust, and loyalty of his

people. Like his father, Marquinho is a leader in, and defender of, the indigenous human rights movement, not only in Brazil, but also throughout South America (Mikulak, 2012). Human rights observers argue that without the involvement of local NGOs such as CIMI (*Conselho Indigenista Missionário*), Amnesty International, and committed social scientists, more deaths would have been likely (Amnesty International 2005; 2011; CIMI, 2002). The participation in, and observation of, the *retomadas* by the Xukuru and those who have worked alongside them provided evidence of human rights violations by state and non-state actors.

During the 1990s when Xicão was the main protagonist in the articulation and promotion of Xukuru indigenous identity, the local political environment in Pernambuco sought to undermine and negate their authenticity in order to deny them the protection and legal rights outlined in the 1988 Brazilian Constitution's chapter on Indian rights (Brazilian Constitution 2010; Mikulak, 2012). In 1991, Francisco de Assis Santana (known as Chico Quelé), the leader of the *aldeia Pé de Serra* was murdered. The consecutive assassinations of Xukuru leaders and advocates have been documented by Amnesty International (2011), the Inter-American Commission for Human Rights (IACHR, 2009), The Cabinet for the Legal Assistance of Popular Organizations (GAJOP, 2011), and the Indigenous Missionary Counsel (CIMI, 2002). In March, 2003, a special commission to study the Xukuru situation was finally requested by the Defense Council for Human Rights (IACHR, 2004), Brazil. According to the Xukuru, CIMI advocates, and legal counsel for the Xukuru, their deaths are attributed to retaliation by non-Indian ranchers who felt justified in their actions – based on Brazil's long history of Indian assimilation policies. Indeed, it is common for large-scale farmers to argue that less than one-percent of Brazil's population is indigenous, and that they already “have” twelve-percent of the national territory. In reality, indigenous people own approximately 12 percent of Brazil's land, and they represent approximately 0.4 percent of the population (Ramos, 1998; USAID, 2011). To put this large distribution of land to such a small population of Indians into perspective, only one-percent of Brazil's population owns 45 percent of all of Brazil's territory (USAID, 2011). This analysis of land holdings corresponds to Brazil's national agendas for land production and development. Indigenous land use most often is in-sync with Brazil's aggressive, neo-liberal, global trade agendas of production and extraction of resources (Davis, 1977; Ramos, 1998; Silva, 2007).

Marquinho's responsibility as the new leader was to demand from the Brazilian authorities a continuation of the demarcation process of Xukuru ancestral lands and to achieve the removal of non-Indian ranchers who continued to inhabit their land. Following the path established by his father, Marquinho continued to lead his people in additional *retomadas*. The resident non-Indian ranchers responded by redoubling their resistance to ceding the land because of a growing interest in constructing the large religious tourism center in the *Aldeia de Cimbres* on Xukuru land. Needless to say, this project promised to be very profitable to local politicians and city councilmen.

The proposed tourism project was not accepted by the majority of the Council of Xukuru leaders, including Cacique Marcos Xukuru, since it would mean a renunciation of their ongoing effort to preserve Xukuru culture, land, and traditions, and would represent a betrayal of their collective historical memory and self-determination. Marquinho, representing his people, remained a strong objector to the interests of non-Indian ranchers, local politicians, and city councilmen, who proceeded to co-opt a small group of approximately 100 Xukuru, influencing them to support the tourism project, while promising them lucrative financial benefits. Events were to unfold that linked this rogue group to the attempted assassination of Cacique Marcos in 2003, the subsequent riot that

ensued by the Xukuru, and the burning of the suspected assassin's homes and cars. Cacique Marcos Xukuru was eventually wrongfully charged for leading the revolt and its subsequent violence.

Marquinho and his mother, Zenilda Maria de Araújo, a nominee for the 2005 Nobel Peace Prize, began to receive death threats, which prompted a 2002 order by the Inter-American Commission on Human Rights (IACHR, 2009) charging that the Brazilian government take full measures to protect them. Despite the requests for protection and intervention by the Xukuru and the IACHR, the Brazilian government did not comply with the cautionary measures ordered by the IACHR. As a consequence, Cacique Marcos Xukuru was ambushed in February, 2003, in an assassination attempt led by José Lourival Frazão, who, along with approximately 100 Xukuru aligned against their Cacique. In this incident, Josenilson José dos Santos and Ademilson Barbosa da Silva, two young Xukuru men, were killed while protecting Cacique Marcos. Their deaths, however, allowed Cacique Marcos to escape, but not without injuries, at which time he was taken to the hospital in Pesqueira. When news of the ambush and the murders spread, approximately 1,000 Xukuru members spontaneously revolted, resulting in the plundering of the cars and houses of the people assumed to be involved in the ambush.

In 2007, this researcher began to investigate the case of Cacique Marcos Xukuru. As a country specialist for Amnesty International (AI), requests were made again to provide protection for the Cacique. Acting alone as a social-action researcher – not as a country specialist for AI – who was investigating indigenous rights and social justice, provisions were made by this researcher through independent state actors to provide “twenty-four/seven” protection by the Military Police for the Cacique when he was not on Indian lands.

This social-action research, carried out since 2007 in collaboration with local NGOs and the defense lawyer for Cacique Marcos Xukuru, Gilberto Marques, resulted in the drafting of a dossier that identified important human rights abuses by the state's judicial system and by the Federal Police in their investigation of the attempted assassination of Cacique Marcos Xukuru and the deaths of the two Xukuru young men in Pernambuco (personal communication, Cacique Marcos Xukuru, 2011).

The purpose of this article is to demonstrate the seriousness of judicial oversights in the case of the Xukuru that stem from three principal aspects of the legal processes during his trial: the curtailment of the Cacique's right to use all legal means to defend himself; the noticeable presupposition of his culpability (assumed prejudices against the Xukuru and their Cacique due to historical bias against Indians based on national policies aimed at determining Indian identity and subjectivity); and the de-politicization of pre-existing conflicts between Indians and non-Indian ranchers over Xukuru ancestral lands.

In collaboration with CIMI, further research reported that elite politicians and economic interests within the region of Pesqueira played a part in ensuring the legal criminalization of the Xukuru and the targeting of Cacique Marcos Xukuru as a provocateur rather than a victim of an assassination attempt. Forensic crime scene evidence by Federal Police at the scene of the assassination attempt did not occur; moreover, interviews of witnesses were not conducted. Research suggests that the rural environment of the Xukuru enabled such faulty evidence collection due to lack of management and supervision of the federal investigation in the field (personal communication with Gilberto Marques, 2011; personal communication with Sandro Lobo, Assistant Legal Counsel to CIMI, 2011).

During the court proceedings held in the city of Caruaru (approximately 74 miles west of Pesqueira), a clear restriction on the right to use all legal means available for Cacique Marcos Xukuru to defend himself was imposed; the court declined to hear the testimony of 152 witnesses, including the testimonies of Federal Deputy Fernando Ferro, and Assistant Head Federal Prosecutor Raquel Dodge. The elimination of witnesses ensured that questions raised regarding the actions and whereabouts of Cacique Marcos Xukuru – both during and after the Xukuru revolt – were not addressed. Indeed, the trial dismissed the occurrence of the attempted assassination altogether. Each witness that was excluded diluted the ability of the court to accurately analyze the alleged crimes against Cacique Marcos. The defense attorney (Gilberto Marques) and the Cacique's rights to a fair trial were left in an increasingly precarious state that eventually permitted the faulty construction of facts against him to be assumed correct by the judge. Both the Cacique and his defense lawyer's legal right to a fair trial were violated as outlined in the 1988 Brazilian Constitution's Indian Chapter, UNDRIP, and the ILO (Brazilian Constitution, 2010; ILO, 1989; personal communications, Gilberto Marques, 2010; 2011; UNDRIP, 2008).

Another important finding of this research is the presupposition of the culpability (presumption of guilt) of Cacique Marcos Xukuru, the *victim* of an attempted assassination. The federal police report stated that there was no attempted assassination, and that the deaths of the two murdered young men was due to internal feuds among the Xukuru, ignoring and/or suppressing evidence from the crime scene. In addition, the prosecution argued that Cacique Marcos was guilty based on the leadership he exhibited in advocating for his people as a human rights defender in his fight to regain Xukuru ancestral lands. Indeed, the assassination attempt on his life was not even considered, and the perpetrators of his assassination attempt were not sought. The involvement of political elites in attempting to develop a religious tourism site on Xukuru land was not allowed as evidence linked to the assassination attempt. Instead, the court focused on the destruction of the homes and property of the two male individuals who the Xukuru argued were the murderers that killed the two young Xukuru youth attempting to protect their Cacique (Fialho, Neves, & Figueiroa, 2011; personal communication with Sandro Lobo, 2011).

Evidence for the whereabouts of Cacique Marcos Xukuru's presence in the hospital in Pesqueira was not permitted; he was found by Xukuru farmers in the hills, his shirt and pants bloodied from injuries received as he ran through barbed wire fences while fleeing his assassins. The Cacique was not only unaware of the revolt, but also not present at the place and time during which it transpired, but the court considered him to be the principal actor who led his people in a revolt against those who were seen as his attempted assassins.

The argument in support of attributing responsibility to Cacique Marcos was additionally based on ideas that conflated his tribal leadership role (as an individual) and his supposed command over the Xukuru people (the collective). Evidence introduced in the trial, such as spent shell casings left at the scene of the crime, the bodies of the two Xukuru young men, and Cacique Marcos Xukuru's injuries (all of which would have palpably supported his defense), was either not collected, lost, or poorly processed, and was summarily dismissed by the court (personal communication with Gilberto Marques, 2011).

The Xukuru community, having experienced a spate of assassinations over a nine-year period and numerous death threats, reacted spontaneously with a justified sense of grief and anger as they evicted those suspected of attempting to murder their young chief. The deaths of two, unarmed young

Xukuru men as they attempted to protect their chief, increased the sorrow experienced by the community. The accused assassin José Lourival Frazão spent one year in prison, and was released. According to Cacique Marcos Xukuru, the other perpetrator, Frazão, has disappeared, for which his whereabouts are currently unknown. Details of the attempted assassination are still unknown, and no further investigations have been forthcoming, ostensibly leaving others who may also be responsible free and at large.

Finally, the proceedings reveal a complete de-politicization of the underlying land rights conflicts between the Xukuru and non-Indian ranchers. Having considered the ambush of the Cacique a mere isolated, contingent occurrence with its true motives obscured – but assumed to be caused by internal feuding – the court interpreted the Xukuru tribe’s reaction as a disturbance lacking motive, and as an act of unprovoked hatred. The failure to consider any political context is one more example of a complete abdication of responsibility by the relevant authorities regarding conflicts in the region (personal communication with Gilberto Marques, 2010; 2011).

According to Gilberto Marques, lawyer for the defense of Cacique Marcos Xukuru, failures by FUNAI, the federal police and the public ministry historically contributed to the violence perpetrated against the Xukuru and their leaders. FUNAI repeatedly delayed the identification, compensation, and eviction of non-Indian farmers from demarcated Xukuru territories, and they failed to participate in the planning of *retomadas* and to provide critical information about potential threats that resulted in the deaths of leaders, activists, and of the two Xukuru youth who attempted to protect Cacique Marcos Xukuru.

Further violations of forensic criminal investigation procedures and judicial protocols were attributed to the failure of the federal police to investigate the attempted murder of Cacique Marcos Xukuru and the criminalization of additional Xukuru leaders. Lack of verification of facts under investigation, failure to provide a valid motive for crimes committed, and clear bias against the Xukuru was demonstrated by the federal police who “investigated” the attempted assassination of Cacique Marcos Xukuru. Indeed, the federal police prioritized the assessment of material damages that occurred in the Xukuru riot against those believed to have planned the attempted assassination of their Cacique, ignoring proper procedures for crime-scene evidence collection and accounts from eyewitnesses (personal communication with Gilberto Marques, 2011).

Finally, the Brazilian Secretariat of the National Council for the Defense of the Rights of the Human Person (CDDPH, 2003) and his team in Recife reviewed the proceedings of Cacique Marcos’s trial and determined that the legal processes against him and other Xukuru leaders were contaminated at their source by a botched and prejudiced investigation. The CDDPH argued that the trial and conviction of Cacique Marcos Xukuru was an act of institutional violence seeking to construe them (the Xukuru) as “. . . dangerous people who do not respect the state because of their human rights activism” (CDDPH, 2003; personal communication with Gilberto Marques, 2010). In addition, the CDDPH stated that the defense for the accused was pressured by the trial judge not to hear the testimony of 152 enrolled witnesses (all of whom had been scheduled by the judge to be heard on a single day; an obviously impossible feat!); all witnesses for the prosecution were allowed to give their testimony. Prior to the end of the trial, the judge was transferred to another federal court, and the sentence levied against Cacique Marcos Xukuru was issued by a newly arrived judge, violating the legal principle of knowing in advance the physical identity of the judge who will preside and levy a legal sentence against the accused (personal communication with Gilberto Marques, 2010; 2011).

## Violations of International Human Rights Norms

This research found that the trial proceedings demonstrated a broad context of violations of international norms. These violations can best be understood in light of the provisions of the following international human rights documents of which Brazil is a state-party:

- The Declaration on the Rights of Indigenous Peoples
- The Universal Declaration of Human Rights
- The International Covenant on Civil and Political Rights
- The Convention for the Elimination of All Forms of Racial Discrimination
- The Declaration on the Right and Responsibility of Individuals, Groups, and Organizations of Society to Promote and Protect Universally Recognized Human Rights and Fundamental Freedoms
- The International Labor Organization Convention on Indigenous and Tribal Peoples (ILO 169, 1989)

According to UNDRIP, Indian peoples are equal to all other peoples, and have the right to be free from all kinds of discrimination in the attribution and assurance of their rights and their identities. Indeed, Article 40 of UNDRIP guarantees that:

Indigenous peoples have the right to access to, and prompt decision through, just and fair procedures for the resolution of conflicts and disputes with States and other parties, as well as to effective remedies for all infringements of their individual and collective rights. Such a decision shall give due consideration of the customs, traditions, rules, and legal systems of the indigenous peoples concerned and international human rights (UNDRIP Article 40, 2008).

This research provides evidence that the Xukuru case must not be isolated from the context of insecurity and unjustified delays in the process of demarcation of their indigenous lands and effective transfer of traditional territory to indigenous communities, and that trials against indigenous leaders for their activism for cultural, political, and self-determination rights must be historically contextualized within legal proceedings against them (Fialho et al., 2011; MacDowell Santos, 2009; Mikulak, 2011; 2012). Accordingly, Article 27 of UNDRIP affirms that:

States shall establish and implement, in conjunction with indigenous peoples concerned, a fair, independent, impartial, open and transparent process, giving due recognition to indigenous peoples' laws, traditions, customs, and land tenure systems, to recognize and adjudicate the rights of indigenous peoples pertaining to their lands, territories, and resources, including those which were traditionally owned or otherwise occupied or used. Indigenous peoples shall have the right to participate in this process (UNDRIP, 2008).

## Conclusions about State Violence against the Xukuru

Associate Professor of Sociology Cecilia MacDowell Santos at the University of San Francisco states:

In the case of the Xukuru...a strong implementation and hegemony of a mono-cultural and individualist perspective of indigenous human rights has been demonstrated...[and] this perspective is legitimated by laws...that are still in effect and are linked to a colonial past of authoritarian power structures within the state and within Brazilian society (MacDowell Santos, 2009).

MacDowell Santos' scholarly article is one of the rare academic texts in English that addresses the Xukuru do Ororubás' human rights case from a human rights and historical perspective. Her article articulates Brazil's national policies related to the maintenance of a homogenous identity based on the policy of "whitening" this multicultural population (MacDowell Santos, 2009).

MacDowell Santos argues that social science research, particularly social action research, needs to conduct comparative analysis on state organizations that investigate, document, collect, and handle trial evidence, and bring to trial cases for the human rights of indigenous peoples. Such a body of research should include different states and regions, particularly rural, isolated regions, within Brazil and across Latin America. This researcher found that an examination of legal, social, and political processes used within Brazil's national courts can identify different situations and/or degrees of heterogeneous state actions that violate international human rights norms (personal communication with Gilberto Marques, 2011; Speed, 2006). Investigations of this kind could be especially helpful in identifying and comprehending obstacles and conditions linked to oppressive state actions against indigenous peoples. MacDowell Santos' research provided this researcher with helpful tools to collect data that assisted in the defense of individuals acting as human rights defenders seeking the collective rights of their peoples (MacDowell Santos, 2009).

The results of this research led to the submission of a dossier of findings of human rights abuses against the Xukuru to the American Anthropological Association's Committee for Human Rights (AAA-CfHR, 2010). Subsequent vetting by the AAA-CfHR led to the public support by the AAA of the Xukuru indigenous peoples with letters and appeals sent to the 5<sup>th</sup> Regional Tribunal in Recife and to the Governor of the State of Pernambuco. The good news in terms of the successful activism of the Xukuru, and the results of this social action research, came in October, 2012: the American Anthropological Association's public stance called for the inclusion of historical state violence against the Xukuru in terms of achieving a fair and just trial, notifying the Tribunal that the actions of the court were being observed internationally. Due in part to this research and the collaborative activism of Brazilian academics and social justice activists, the 5<sup>th</sup> Regional Tribunal in Recife, under appeal, dropped the criminal charges against all of the Xukuru leaders, including Cacique Marcos Xukuru.

The Brazilian judicial system's capacity and willingness to adjudicate – fairly and impartially – indigenous legal cases, especially those involving land demarcation rights, is unfairly biased toward a colonial model that favors land owned by wealthy productive farmers. International human rights norms that define the rights of indigenous peoples to use their lands according to traditional cultural values are often ignored and unacknowledged by Brazilian judges who, more than likely, are not

encouraged to “bend the arch of justice” toward indigenous peoples’ rights, rather than toward nation-states capitalist production.

The assassination of Xicão Xukuru not only provided a catalyst in strengthening the Xukuru in their fight for the return of their traditional territories, but also led to the indignity and fear that drove the spontaneous riot after the attempted assassination of his son, Cacique Marcos Xukuru. Xicão’s tragic murder ignited a powerful engine for the continuation of the Xukuru fight for their land, as well as the right to determine the trajectory of their cultural lives as indigenous Xukuru.

While the government-sanctioned criminalization of the Xukuru has led to the judicial condemnation of many of their leaders by the federal justice system, such actions have fortified the Xukurus’ knowledge of their courage and led to the martyrdom of Xicão Xukuru. Xicão’s leadership, participation in the national Indian movement during the 1980s, and his willingness to stand for the legal rights of his people continues to inspire and inform the Xukuru.

Indeed, the *Plantacão* (planting of Xicão into the earth – the Xukuru do not “bury” their dead: they are planted in the ground and produce the continuation of the life force) of Cacique Xicão occurred on May 20, 1998 (Fialho, Neves, & Figueiroa, 2011). He was ritually planted in the symbolic location of *Pedra do Rei* (Rock of the King) in the village of *Pedra D’Água* (literal translation is Rock of the Water). For the Xukuru, death is not the final event of life; rather, it is perceived as a transitional continuation from one’s physical place in the world, leaving the visible or physical experience for the invisible actuality that brings life into concrete being. To the Xukuru, Xicão’s implanted body in the earth continues to produce the fruits of wisdom that inform Cacique Marcos Xukuru and his people in their daily life and potentially other indigenous peoples living in the northeastern regions of Brazil (personal communication with Cacique Marcos Xukuru, 2012).

While Xicão was planted in the sacred earth at *Pedra do Rei*, the perspective of the Xukuru remains: Their connection to the earth and their land is a fundamental principle that is pragmatically understood in their daily life. Land is, as non-Indian academics would claim, a “marker” of their identity. To the Xukuru, land *is* their relationship to the *encantadas* (spirits and ancestors). Accordingly, for the Xukuru successful community and social relationships can only occur through their relationship with the land, which passes wisdom through the bodies of their ancestors on to their progeny. For the Xukuru, communication with their ancestors occurs every day – it is emitted from the earth, and brought forth with each new infant. In this system, nothing exists without the realization and practice of their connection to their land. In actuality, the Xukuru live in perpetuity – both in the now, and in and through, their ancestors – via the earth (personal communication with Cacique Marcos Xukuru, 2011).

The importance of understanding Indigenous Xukuru perspectives about life and death are critical to the understanding of the events surrounding the attempted assassination of Cacique Marcos Xukuru and his subsequent trial. The world view of the Xukuru, their understanding of life in perpetuity, their conversations with their land and their ancestors, must be considered as authentic and actual within the Brazilian legal system if justice for ethnic diversity is to be achieved.

The successful outcome of the 5<sup>th</sup> Regional Tribunal’s appeal can be considered a victory for indigenous people not only in Brazil, but also around the world in terms of recognizing the inherent rights to land, dignity, justice, and equality within the nation-states where they live. The success of



their appeal was in part made possible by social science applied research in collaboration with various NGOs and non-state actors, acting as witnesses to injustices occurring in rural locations, often hidden from public notice. While the paradigm that embodies and informs the Xukuru in terms of life and death was not part of the legal proceedings that criminalized and eventually decriminalized them, could it not be said that the leadership and social charisma of Xicão, the Xukuru extension of life into death, and the agency of ancestral discourses with the living proved to be effective in the end? As a consequence of justice being rendered to first-nation peoples, the injustices of colonial history are diminished, and the potential for new paradigms of justice are, in part, realized.

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## **Ideas for Capacity Building and Educational Empowerment of Female Children in Rural Butaleja, Uganda: Applying the Central Human Capability Approach**

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**Abstract.** Building upon the concepts of Capability Approach, this paper discusses how these ideas can be effectively utilized within the setting of a small rural village in Uganda, Africa to empower female children to create a valuable life that affects positive social change. Colonization left a devastating blow to the socioeconomic conditions among many ethnic communities in Uganda. However, Uganda's political outlays and social constructs further deepened the inequity gap between female and male children. This paper explores ways in which female children may be given the capacity to create agency for themselves as a stepping stone towards building a life they value in Butaleja, Uganda.

**Keywords:** Human Capability, education and health, gender and education, Uganda, empowerment, capacity building, unfreedoms, gender inequity, rural

Uganda is by and large a rural nation, with about 85% of its population of 31 million still living in rural areas (Uganda Bureau of Statistics, 2009–10). Situated on the northwestern side of East Africa, Uganda is a country with many small diasporas of multi-ethnicities and communities. Statistics indicate that in Uganda, between 20% (Central Intelligence Agency, 2013) and almost 40% (UNICEF, 2010) of people live in poverty (PPP) below US\$1.25 per day, and most of these are women living in rural areas. Lacking education and burdened with family duties, the female children of Uganda, particularly in rural areas, have resorted to menial labor in agricultural fields, the sex trade, or simply taking on the role of mothers. According to the United Nations Development Program's (UNDP) Human Development Index (HDI) (2011), which measures education, health, and income, Uganda ranks 167 out of 187 similarly measured countries worldwide. While HDI reports show an 81% attendance rate for females for primary education, there is only a 17% attendance rate for lower secondary education. Recent data show that over 400,000 children are out of school in Uganda (RESULTS Educational Fund, 2013). Additionally, a Gender Equality Index of 0.517 shows high inequality, with 46.5% of the girls getting married before the age of 18 (United Nations Girls' Education Initiative [UNGEI], 2008).

These data show a high need to address capacity building through education as a whole in Uganda. Yet, the real need for basic education lies deep within rural communities, areas that were often bypassed in empirical studies and developmental data collection by institutions and individual researchers. For example, the HDI report by the UNDP (2012) for Uganda has mostly taken into account urban and suburban communities, as opposed to communities in rural settings where there is the greatest need for education, especially in the case of female children. It is in these communities that female children lack access to schooling and social support and are relegated to menial work in the fields in order to support their immediate families and elders of the village.

This paper focuses on a small rural community in Butaleja that is deep within the Tororo District in Uganda, where there is no access to schooling within a ten-mile radius. Butaleja is an

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ideal place to address the question of how to advance the capability of female children through basic literacy, and how to help them overcome traditional gender inequity and become a capacity-building workforce through ownership of agency. Drawing on the philosophical work on Capability published by Sen (1992; 1999; 2002; 2006) and Nussbaum (1999; 2000; 2010), the present study argues that educating female children in Butaleja is not a simple linear process; rather, a matter of paving the pathway by gradually initiating social changes that accommodate accessible education. These changes may point toward areas of sociocultural and economic disparity that also require effective and sustainable transformation. This paper presents an idea for a locally sustainable model as a part of a future project in capacity building for female children.

### **The Need for Literacy Education for Female Children in Butaleja, Uganda: Country Education Profile**

The British colonized Uganda, like many other developing countries, in the late nineteenth century. During this time, the emphasis was on religious education through British cultural assimilation of the local people by missionaries. As a direct result of this enculturation, the local people broke away from their own traditions, leaving a significant void within their Ugandan cultural identity. People, especially children, did not receive an education that directed them eventually to a vocation. Although an attempt was made by the British to set up a system of formal education in 1925, schools were mainly provided in the townships, and most of the attendees were boys. Being a patriarchal system, boys were considered more important and valuable. Moreover, the education that was offered did not teach skills or trades, but just enough to read religious literature and to do menial jobs. Hence, colonization by the British left Uganda without a strong middle class in the wake of its independence in 1962 (Stiglitz, 2006). Consequently, this situation translated over time into socioeconomic and political disparities within each region. The establishment of a strong middle class is an anchor for job creation (Fashoyin, Herbert, & Pinoargote, 2003). Although almost everyone in the townships speaks both Swahili and English, education in literacy and numeracy eludes female children throughout Uganda (Fashoyin, Herbert, & Pinoargote, 2003).

Geographically, Uganda is rich in natural resources. However, lack of technical skills to mine these resources, coupled with underdeveloped transportation systems and internal government corruption, have added to the already worsened socioeconomic and political condition of the country (Stiglitz, 2006). The advent of modernization has also led to the eradication of subsistence farming in favor of cash crops that profit foreign economies. Families often bypassed children's education in favor of cash crop production in order to pay for food and provide support for the extended family. Unfortunately, it was and still is the girls who have been burdened with caring for the family. Often girls as young as five years old are helping their mothers—either out in the fields tilling the land or looking after the younger ones at home, so that money can be made to help support the family (Stiglitz, 2006).

The lack of the necessary education and technical skills to establish and operate local and national businesses has brought about a situation in which multinationals have set up shop in Uganda (Fashoyin, Herbert, & Pinoargote, 2003). Unfortunately, these large corporations and their multilayered tax levies, trade embargoes, and high interest rates keep Uganda on a continued "need-basis" (Stiglitz, 2006, p. 34). Turning to the International Monetary Fund (IMF)

in order to reduce debt load has often crippled countries in a poor economic situation. The IMF generally “provides money only with a long list of conditions, including government spending cuts, tax increases, and high interest rates” (Stiglitz, 2006, p. 34), which further burdened crippled economies. Worse for Uganda, the AIDS epidemic hit the land with brutal force, leaving a great number of young males dead or dying and the burden of supporting their families falling squarely upon the shoulders of young female children (Stiglitz, 2006), maintaining many barriers to advancement of female education. Without advancement in educational capabilities, particularly for female children especially in rural areas, capacity building will continue to be a challenge in Uganda.

### **Butaleja District**

**Cultural heritage of Butaleja people.** Butaleja, a rural village district, is one of 111 districts in Uganda and is bordered by Budaka District to the north, the Mbale District to the east, the Tororo District to the southeast, the Bugiri District to the south, and the Namutumba District to the west. The population of Butaleja District in 2014 was 245,873. The town of Butaleja, where most of the government representative offices are situated, has approximately 19,519 people (Brinkhoff, 2015).

Originally a nomadic people from Egypt and Sudan, the majority of the people in Butaleja are identified as the Banyole (or *Abalya Obwoba*, “those who eat mushrooms”). The remaining population is comprised of Jopadhola, the Bagisu, the Basoga, the Iteso, the Karimojong, and the Bagwere (Oluka, 2009). The Banyole people are believed to have migrated to Uganda around 1500 BC. They speak Lunyole, one of the Bantu family languages, linguistically close to the Basamia (a Bagwe people who live on the Kenyan border). Lunyole has been listed as an “endangered minority language” by Makerere University Institute of Languages, Uganda (Nexus, 2015). This is due to the fact that Uganda has formalized English and Swahili as the official and national languages. This decision helped communication for international trade and commerce; however, domestically, it has paved the way for language erosion and cultural degradation among minority ethnic groups. Lunyole, spoken by the majority Banyole of Butaleja, is no exception.

**Social construct of rural Butelaja.** Culturally and traditionally, the Banyole people are an agriculturalist society, where women and girls are in charge of cultivating land for family sustenance. The meal preparation is also entirely in the hands of the female population. Banyole is strictly a patriarchal society where “women are economically dependent on the male next of kin (husband, father, uncle, or brother). Dependence on men deprives women of influence in family and community matters, and ties them to male relationships for sustenance and the survival of their children” (Haynes, 2012, para. 33). Although polygamy is on the decline, many marriages remain polygamous, which leave women at various levels of relative empowerment, struggling even within their own family. For example, the senior wife, in his absence, may have power equal to her husband over other wives. Overall however, even though women make a significant contribution in agriculture, they do not hold solid tenure rights. As a wife, a woman has, according to modern Ugandan law, 15% of the joint land rights of her husband’s estate. In the event of his death, she may lose all that, if traditional law comes into play, as is the case in most rural villages. If the wife dies, the husband inherits his wife’s property, in its entirety. Within the family framework, boys are always revered and have all the rights and privileges of



the dominant male, father, uncle, or grandfather. For example, men and boys over 12 years old are not permitted to sit in the kitchen, which is separate from the main home (Haynes, 2012).

### **Current Situation of Girls in Butaleja**

Patriarchy persists and permeates every aspect of daily life in Butaleja; and even the reduction of the male population due to civil wars and diseases, such as HIV/AIDS, has had no bearing on male dominance. Girls are still relegated to domestic and agricultural work, where they continue to endure social and economic hardship, not to mention a lack of political agency. In education, boys get preference over girls because all decisions lie with men. In a sample survey of 4,246 parents and guardians conducted from all regions of Uganda, decisions about girls' education in rural households were found to lie with the father or the dominant male (39.9%). "An estimated 2,400 female children of school age in Butaleja have, as a result, been left out of the Universal Primary Education program" (Bikala, 2010). This adds to the beleaguering problem of child neglect that is rampant throughout Butaleja; "most children are neglected by their parents or forced to work in the fields instead of going to school" (Bikala, 2010). One high-ranking Butaleja district officer states that this "large number of neglected children accounts for the rise in beggars on the streets of Butaleja town" (Bikala, 2010). She further attests that a "huge percentage of girls [are] forced to withdraw from school and enter into early marriages" (Bikala, 2010). "She urges the district administration, the central government, and civic leaders to do more to educate people on the importance of education" (Bikala, 2010) to the well-being of society. "She wants parents who deliberately deny their children education" to face consequences for neglect by punishment. (Bikala, 2010).

### **Capability Model and Female Child Education**

Unfortunately, educating female children in Butaleja is not as simple as getting the government to do more in educating people about education or punishing the parents for deliberately denying education for their children (Bikala, 2010). The present study is based on the idea that education is at the core of any social change.

This paper draws on the theoretical arguments of a model that argues that the end result of development should be developing people's capability. *Capability* refers to the opportunity to accomplish and function within a lifestyle that a person perceives as valuable (Sen, 1997). When people have capability, their agency is enhanced. *Agency* is the ability to act on behalf of what you value and have reason to value (Ibrahim & Alkire, 2007). To sum up, for women and girls, especially in the rural context, one of the most empowering factors is to have agency—(a) agency in making decisions with regards to women's own bodies and (b) informed decision-making with regards to family matters—this is the true essence of capability in capacity building. Uninterrupted access and equitable education for female children, from kindergarten to the highest level of achievement based on ability: (a) provide an awareness of personal freedoms, (b) develop personal agency and choice, and (c) promote the ability to choose a life that is meaningful and of value to the child as she grows into adulthood. Nussbaum (1999; 2000) argues that when women and girls are provided the right opportunities to develop capabilities, they ultimately contribute to their local economies in a more meaningful way, and thus help build community capacity.

According to Sen (1999), capability is tied to five distinctive rights or freedoms that a person must have in order to advance: political freedom, economic facilities, social opportunities, transparency guarantees, and protective security. These freedoms are not only distinct, but interrelated and instrumental. They are instrumental in that they ultimately promote overall freedom. In the present case, freedoms allow female children to lead the kind of lives that they value. In order to live a life that is valued, dignity in human beings must be put in the forefront (DeJong, 2004). To this end, the capability approach also calls for removal of all forms of injustice and inequality (including gender inequality), which Sen (1999) calls *unfreedoms*. Unfreedoms halt or impede the development of freedom that otherwise would help build capacity within people. Therefore, “development requires the removal of major sources of unfreedoms: poverty, as well as tyranny; poor economic opportunities, as well as systematic social deprivation; neglect of public facilities, as well as intolerance or over-activity of repressive states” (Sen, 1999, p. 3).

Capability theorists argue that by giving women and young female children the security that they need through education, they can potentially overcome “poverty deprivation and live a life that they have reason to value” (Sen, 1999, p. 74). The contribution of education as a capability to social development has many merits, such as empowering people to improve their quality of life (Sen, 1999). This is especially the case for equal participation of women, socially and politically. Education has intrinsic importance: the capability to read and write can deeply influence one’s quality of life (Sen, 2002). For example, being able to read and write means being able to make informed decisions with regards to health, nutrition, shelter, reproductive issues, political choice and participation, and uncensored speech. These are all aspects of what Sen (1999, p. 36) refers to as “substantive freedoms” that are of intrinsic importance in education.

Hence, from a capability perspective, implementing curricula that enhance basic language literacy skills from a primary level of schooling helps to create a transformative female generation: one that will help set a pathway in capacity building in the form of equal participation, especially in decision making with regards to personal health and well-being. This pathway will extend to the greater society, closing the existing gender gap in decision-making. Moreover, “female literacy can enhance women’s voices in family affairs and reduce gender inequality in other fields” (Sen, 2002, p. 1).

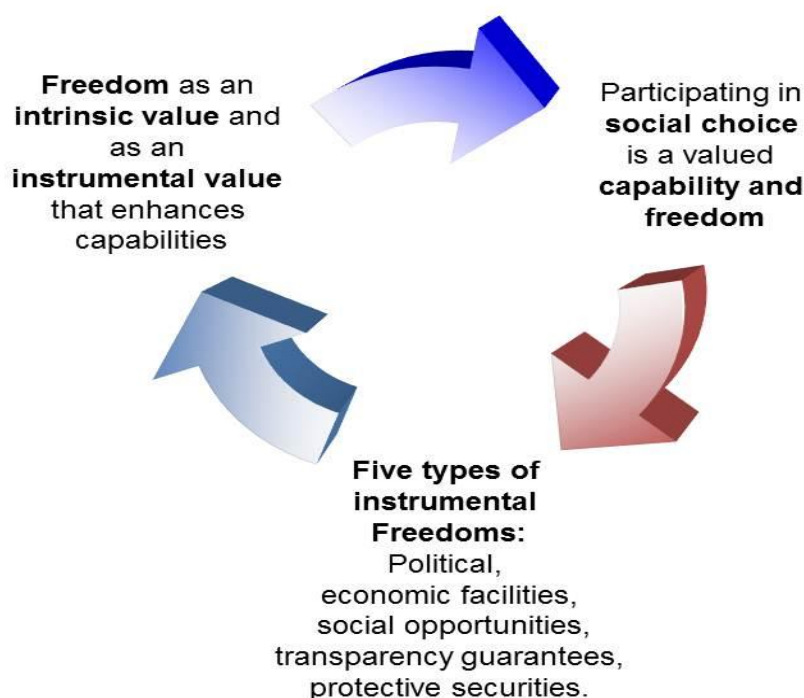
In times of rapid globalization, any approach to understanding women’s issues is complex. In many areas of developing nations, women face various obstacles to fully participating as equal citizens. In an interview with Scott Horton (2012) on her book, *Not for Profit*, Nussbaum stated, “education begins where one is, with a rich grasp of the local context, but ramifies out to include the whole chain of human interactions” (para. 8). In many developing nations, where female children and women are kept from being educated, it is the lives of young women “who are burdened and impoverished by over-frequent bearing and rearing of children” (Sen, 2002, p. 2). This is true in many parts of South Asia and Africa where value systems reflect germs of patriarchal hegemony that have remained intact since the colonial era (Enyegue, Makki, & Giroux, 2009).

Educational systems need to understand their societies—“their tensions and contradictions” (Anrove, 2012, p. 6). It this understanding of the dichotomies—guided by

knowledge of the country, familiarity with its history and the unique qualities of particular societies—that enable unfreedoms, such as patriarchal barriers, to be addressed in order to find mutual solutions beneficial to all parties involved. All human beings can think, learn, and contribute, but this human capability can be fully realized only if humans feel secure (Sen, 1999). In order for people to feel secure, they need to be free of oppression (Freire, 2011) and to become partners in education in a society where becoming educated is not a privilege but a basic human right. Being educated means that people are given the opportunity to become empowered and thus to make informed decisions regarding social, economic, and political situations that are important in their lives (Sen, 1999). Research supports the view that, in the developing world, economic support of women is usually the better investment (Kasente, 2003).

Sen (2002) believes that the contribution of basic education, the ability to read and write, is an important step toward influencing quality of life. He sees female literacy as a means of giving agency to women to voice their opinion on family matters, which in turn reduces gender inequality in various fields. Sen (1999) calls this “the human capability” that promotes capacity in people to function in a life style that they perceive as valuable.

Beginning with education as a means to choosing how to participate in the economy (local or global), female children in particular are given a reason to value their lives. Education becomes a means to create agency in the social and political arenas, which in turn becomes the means to choosing how to participate in the economy.



*Figure 1.* Freedoms in society strengthened by the education of female children. Adapted from R. de Silva, 2015.

For the socially and economically deprived, a major means to substantive freedom is education. When people are allowed to think for themselves about what is important to them and support values that are important to their well being, their motivation to be empowered educationally becomes paramount. This study posits that when educational focus is developed and made meaningful and relevant within the local cultural context from an early stage—as suggested here for rural Butaleja female children—children will more likely be empowered. They will become stakeholders of knowledge that will in time contribute towards building capability and capacity, as shown by Sen’s capability model (Sen, 1999). Figure 1 above (de Silva, 2015) describes the concept of freedom as both an instrumental and intrinsic value that allows social choice and capability, based on Sen’s five types of instrumental freedoms (Sen, 1999).

### **How Capability Model Concepts Can Be Implemented in Butaleja to Serve as an Impetus**

In rural Butaleja, Uganda, the author will be working within a very small local area where much of the power base lies within the rural village. The author has outlined several approaches of best practices that enhance educational capabilities, which have been proven effective in rural developing nations in Africa and Asia, and which are expected to be effective. As the capability approach itself states, capacities of families and communities cannot be enhanced with just one method. Best practices are multifaceted, promoting capabilities and agency, while combating unfreedoms.

Any human services personnel working in developing countries must partner with local agents. In this case, the village is the primary functioning governmental body, making it crucial to partner with and receive approval from local governmental agents in Butaleja. As an initial step, dialogs with these key constituents can be promoted to discuss potential solutions and barriers. Given that Butaleja is predominantly a patriarchal society, both men and women need to be invited to engage in a meaningful dialog to promote female education. These dialogs can be used as an initial means to identify action steps. They can also serve as venues to identifying household barriers and local solutions.

These dialogs can lead to creating more substantial solutions—including partnering with various local community constituents, such as human service workers, local political supporters, faith leaders, non-profits, women’s groups, and children—to conduct targeted awareness campaigns about education of female children. Awareness campaigns can be used to inform the community and single families that educating female children offers them mutual benefits. Therefore, using the language of “value” rather than “rights” may offer a location to begin this process. Female children’s voices can be a powerful tool to propel value changes through targeted campaigns. Malala Yousafzai, a female child from Pakistan who moved the world with her advocacy for education for female children is a good example (Winthrop, Matsui, & Jamil, 2013). Participation by children builds leadership and promotes self-agency.

Multidisciplinary community groups can also help build community capacity to serve a cause. Butaleja does not have its own school—the nearest school is 10 miles away—and, as in many rural communities, the existing schools do not have sufficient resources to adequately house children. Community groups can be important conduits to build school capacities. For

example, community members can work with developmental agencies and government bodies to build a new satellite school or to build additional classrooms in existing schools. Costs can be reduced if community members provide labor for construction. Additionally, teams of community members can work together to find local solutions for transportation to school.

On the other hand, it is also important to build professional capacity for teachers to retain students. With teacher aids and teacher support mechanisms provided through local NGOs or through the education ministry, teachers could identify the most vulnerable students. Foreign NGOs whose value systems resonate with the needs of the community can also be harnessed to train local teachers who are willing to embody and work within curricula that are meaningful and relevant to the Butelaja community. Partner NGOs and workers would be ideal resources to help build both teacher and student capacity.

These partnerships and teacher aid systems can also be used to build classroom programs for students who need additional help and to prevent dropout rates. Retention of education is dependent on what learning material is covered. Children are more likely to enjoy material they can connect to. From a community perspective, institutionalizing teaching curricula that are seen by families and communities as relevant (with direct potential to financial gain), may be more accepted than curricula that are purely academic and foreign. Culturally rich pedagogy that encompasses rich descriptions steeped in traditional storytelling and that values human interactions and cultural beliefs may be useful as a way to reintroduce historical perspectives into valuing cultural heritage (Beck, 2016). To this end, implementation of a curriculum that includes the Lunyole language from the kindergarten level onward would also help deepen cultural values in children. Appropriate reading books that are embedded with culturally and linguistically relevant and meaningful text is key (Coyne, 2015). However, it is also important that female children can identify with the cultural contexts. The introduction of storybooks with female roles is important to promote gender equity in education. A viable solution is to partner with NGOs, schools, and community leaders to create local curricula and texts.

In addition to cultural textbooks, education that leads to vocational enhancement is more likely to be viewed by families as beneficial. Reintroducing and interweaving traditional methods—such as beekeeping, crop rotational farming, fish farming, or growing vegetable gardens—into daily academic rigor would further enhance and create meaning within the educational and cultural context of the community. Connecting various methods of local vocational skills with reading, writing, and arithmetic serves not only to promote worthy life skills but also to increase a balance of power through knowledge and understanding. Partnership with local professionals is a low-cost viable solution to this end.

In addition to education and vocational skill development, schools are also places where children build character. Leadership programs for girls can be initiated within schools, where teachers can select students as leaders. For example, mentorship programs can be initiated so that older female children can mentor and serve as role models for younger ones. Such programs are mutually beneficial for all participants as they build capability and agency. Additionally, through school projects, female children can be encouraged to engage and take leadership in community activities. Furthermore, similar to Photovoice (a photo elicitation methodology) projects in the west, local artistic methods can be introduced, where girls are able “articulate their thoughts on

the role of their educational experiences, as well as challenging their marginalization” (Shah, 2015, p. 55) on their home fronts and in the greater community. Using exhibition and art formats, girls in Butaleja can also be encouraged to participate in a dialog with brothers, parents, teachers and community, as a safe place for interaction (Shah, 2015). This type of methodology embedded into curricula is ideal for opening up a safe place for the elementary school children to begin creating agency for themselves as they develop.

At present, many families do not send female children to school, due to financial constraints. While primary education is free in Uganda, secondary education is not. It is important to create positive incentives for female children to continue school. For example, working with NGOs and local and central governmental agencies to create conditional grants as incentives to send girls to school may be necessary. Additionally, in Uganda as in many other African countries, microfinance lending groups are popular among the rural poor. Financial incentives for sending female children to school, such as educational grants with a reduction in interest, can be written into loan agreements. They may yield very positive results.

Additionally, social development programs (including the microfinance groups mentioned above) can be used to further help female children and their families. Social workers can take on the role of helping schools by identifying the most vulnerable families. Working with schools and other partnering agencies, they can help remove barriers and build each family’s capacity to send their children to school. They can also further serve as agents of change by advocating for female child education.

### **Conclusion**

The present study is based on the idea that education is a key element of any social change, and that focusing on education for female children is especially important. This study proposed a viable initial implementation plan based on a capability model that would utilize local resources, build capacity, and enhance women’s and children’s agency. As mentioned earlier in the paper, “Education begins where one is, with a rich grasp of the local context, but ramifies out to include the whole chain of human interactions” (Horton, 2012) in order for meaningful learning to happen. Application of Sen’s HCA in the rural village of Butaleja, as an initial step toward a much larger project, would not mean another import of a western model, but rather a model that nurtures human values that are important within the local cultural and social context.

A commonly known fact is that educated women do not plan to rear illiterate children (Ware, 1984). Access to basic literacy skills for female children, to begin with, would likely mean that, as they mature, they gain greater freedom to determine their own development priorities and improve the quality of their lives. This in turn allows women to improve public services by possibly navigating away from foreign economic dependency for basic needs. The goal is in establishing a socioeconomic system that gives women the agency to create a life they deem valuable, through a meaningful system that could be easily sustainable. Future research is required to address the means to finalize and apply the model and develop locally sustainable systems within each diaspora in East Africa.

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## Book Review

### Latino Heartland: Of Borders and Belonging in the Midwest

Sujey Vega

2015

New York, NY: New York University Press

263 pages

Softcover: \$29.49 US

ISBN-13: 978-4798-9604-2

“This book is a wake-up call,” announces Sujey Vega (p. 226), author of the extraordinary ethnography *Latino Heartland: Of Borders and Belonging in the Midwest*. The central theme of the book revolves around the rights of non-white immigrants to settle in a small Indiana town, to lay claim to public spaces, and to reshape the notion of what *community* means in the rural Midwest. The author, who spent several years embedded in the town of Lafayette, Indiana, accomplishes her goal by describing the erased history of Indiana’s immigrants and pioneers, White and non-white, interviewing Latino and non-Latino Hoosiers about their community, and watching with palpable unease as immigration debates and harsh political rhetoric began to stir resentment and fear among Lafayette townspeople. This up-close account of the racism Latino Hoosiers encountered alongside the convenient forgetting, by many White residents, of their ancestors’ own immigration struggles, as well as the longstanding Latino presence in Lafayette (Vega reports that the first Mexican families began arriving in the 1950s), are the book’s most compelling features.

The book begins with a thorough description of the author’s approach and methodology which is essential for a scholarly work, but especially important in this case because the author is, herself, navigating the borders of belonging in the Midwest, albeit in a different way than many of her Latino subjects. Vega is the daughter of Mexican immigrants, and first came to central Indiana as a graduate student and settled in the town of Lafayette to work for the school district. She clarifies her activist researcher approach in the tradition of Behar and others, whose subject matter is deeply personal but nonetheless academically rigorous. Many of the book’s chapters serve as a corrective to what the author rightly views as a whitewashing or sanitizing of history in which White townspeople who believe their claim to the land threatened by more recent Latino arrivals, choose to ignore the ethno-cultural assimilation struggles of their German forebears, and the displacement of Indiana’s original residents, Native Americans. Chapters describing spiritual identity and claiming/re-claiming public space within the town pivot around this theme. Archival research, historical records and newspaper accounts, and contemporary local media reports on the ever-polarizing immigration debate lend support to the individual accounts of interviewees scattered throughout. The situation of contemporary life as a Latino Hoosier, particularly in the wake of harsh new immigration laws and increased vigilance about *undocumented* immigrants against border theory works well in some places but seems strained in others. For instance, a section on a Latino Catholics’ religious procession delves into dense language about *sacralizing* a public space and the importance of this public display of religiosity in carving out belonging in the town. The description of the procession is moving, but the author spends much of the chapter casting the

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particular importance of this ritual as a deliberate attempt to *Latinize* a public space, and it is unclear whether the Latino participants share her interpretation of the event.

Dense though the book may be at times, the chapters are well written; and where Vega does provide detail on specific families, encounters, or verbatim interview excerpts (provided in both Spanish and English, when interviews were conducted in Spanish), it reads quickly. The last two sections in particular deal with the opening of a painful chapter in recent history, legislative actions that criminalized immigration and made deportation raids frighteningly common (a chapter that is still being written). Vega describes broader debates on borders and belongings filtering down to small town Indiana. Her interviews with non-Latino, mostly White Lafayette residents are particularly harrowing for the rank, race-based political rhetoric many of these individuals have swallowed about their neighbors. These national conversations about Latinos and immigration, all too conveniently reaching an apex during a time of economic downturn, steeped the town of Lafayette in animosity toward Latinos. Although the references to Senate bills and other political maneuvers are specific to a certain place in time (Indiana, 2006-2012), these accounts are relevant mainly to provide contextual knowledge about the often-precarious situation of Latino residents in the Midwest. Lafayette and other nontraditional settling locations for Latinos—Iowa, Michigan, Oklahoma, and many rural spaces—are often forgotten during discussions of Latino migration and Latino settlement. Vega's book makes clear that Latino Hoosiers are a vibrant and significant part of both Indiana history and contemporary Midwestern life. A take-home message particularly relevant for rural social workers may simply be to grasp the depth of the Latino presence in the heartland.

Vega herself is not a social worker, although she was heavily involved in community advocacy throughout her time in Lafayette. Graduate students in social work preparing for rural practice will find the book useful as an introduction to the cultural diversity of the Midwest, and will especially appreciate the plight of undocumented immigrants who live in a painful legal and social limbo, a crucial part of social work practice with many Latinos. Those interested in qualitative research methods may find the text helpful as an ethnographic, *activist researcher* example. For foundations-level coursework, MSW instructors may find Chapters 1, "The Making and Forgetting of the Past in Central Indiana," and 4, "The Impact of Microaggressions and Other Otherings in Everyday Life," trenchant for macro-level Human Diversity in the Social Environment discussions or advanced independent study on interpersonal practice with Latinos. Overall, this is a fascinating work that offers a fresh perspective on a frequently overlooked community (Latinos) in a frequently overlooked place (the rural Midwest). It is indeed a wake-up call to those of us who have the privilege of forgetting.

## Book Review

### **Planning for Rural Resilience: Coping with Climate Change and Energy Futures**

Wayne. J. Caldwell (Ed.)

2015

Winnipeg, Canada: University of Manitoba Press

165 pages

Softcover: \$31.95 US

ISBN-13: 978-0-88755-780-4

With the recent conclusion of the United Nations conference on climate change in Paris, attended by delegates from more than 195 nation states, and the growing empirical evidence of the grimness of the issue, this edited creation of Wayne Caldwell cannot have come at a better time for an in-depth review. The book is a collection of ten chapters besides the introductory chapter, driven by the concern for preparing rural communities for the impending effects of both climate change and peak oil. It showcases innovative endeavors to prepare communities to delay and/or avert the possible consequences of these threats. The context of the book is set in Ontario, Canada, and its rural landscape with several of the book's contributors associated with the School of Environmental Design and Rural Development, University of Guelph, Ontario. The editor himself is the Director of the school and a professor in rural planning.

The well-laid out introductory chapter justifies the title, *Setting the Stage*, with a clear review of the concepts of climate change, peak oil, and their potential consequences. The literature identifies potential impacts on weather, ecosystems, water resources, coastal systems, food, health, employment, energy production, transport, tourism, and human settlements. The close association between climate change and peak oil is acknowledged and a need expressed to view these as twin issues due to the significant contribution of oil use to greenhouse gases. These grim realities are, however, given an optimistic outlook by introducing the idea of creating resilient communities aimed at reducing these potential impacts. The concept of resilience is addressed at length from different perspectives besides the original ecological, with preliminary glimpses of the gamut of proactive actions in building and sustaining community resilience that may be possible. The overriding message is proactive adaptation to change in the form of eco-efficient approaches, growing adaptive capacities (economic, social, leadership, and communication networks), and reducing vulnerabilities, besides the well-known one of disaster-preparedness. The challenges that rural communities face in the form of resource limitations and the use of fuel to drive farm production are the running threads in this broad but in-depth analysis.

The first chapter by Reid, a county level planner with experience working on community resilience, is a heart-felt illustration of the fall and rise of a rural town devastated by the Goderich tornado. The author combines the extant panarchy model that recognizes hierarchical and multiple systems operating in communities and the anti-fragility concept that challenges can make entities stronger. This framework may guide transformation of communities in the resilience-building process, in this case addressing transportation, food production and water protection.

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The focus of the subsequent two chapters written by Kraehling and Caldwell is resilience-building through nature conservation. They present the framework of Green Infrastructure (GI) wherein “all forms of valuable green space should be acknowledged and used in a central design construct for communities” (p. 47). With backgrounds in land planning they extol community assets like the landscape, soil and waterbodies, housing, and the like (the GI) that need to be nurtured and invested in for community protection to mitigate the threats posed by climate change. They offer a range of policy resources across countries that would assist communities with land-use planning. They support their GI framework with case studies developed by their graduate students of asset-building efforts in rural communities in Ontario. These efforts include capacity building, developing and offering stewardship guides to farmers and non-farmers toward environment-friendly farm plans, tree-planting success stories (enlisting school children and school boards) and promoting incentive based alternative land use service (ALSU) programs for farmers.

Transportation is an obvious but often evaded issue when it comes to fuel use efficiency. Marr, in the fourth chapter, which may be an offshoot of his graduate thesis work, supports the creation of public transport systems in rural areas as the most feasible alternative in terms of investment returns and reducing emissions. He does propose alternative fuel and energy efficient automobiles which may be long term goals with public transport a viable interim goal. Duly acknowledging the indispensable use of personal transport in rural areas due to distances, his citation of rural-urban differences in energy use and carbon emissions is a revelation. The reference he makes is to per capita carbon emissions in rural areas, which is considerably higher than in urban areas.

The fifth chapter showcases empirical findings from a village community, Eden Mills Going Carbon Neutral, with a population of about 350. The journey to becoming the first carbon-neutral (carbon emissions are canceled out by absorptions) village in North America was inspired by a visit by residents to a similar village in England, and became a reality by an evolving process of collective vision, capital building (natural, cultural, social, human, political, and financial), and collective action at multiple levels in the community. The authors use the community resilience framework developed by Magis (p. 87) to conceptualize and interpret the dynamics of the resilience journey in Eden Mills. The inclusion of Magis’ lucid definition of community resilience and the concepts building the framework provide additional clarity in appreciating the processes enabling the remarkable transformation of the community. Some noteworthy elements evident in the case study are the extraordinary social and human capital building and the biennial household surveys to measure the carbon footprint of the village.

The sixth chapter includes a second case study, Transition Guelph (TG), in which community resilience is reflected in transforming communities through promoting green initiatives and enhancing self-sufficiency. This model uses the principles of permaculture to develop sustainable human living environments. Guelph is a larger city in southwest Ontario that transitioned primarily through engaging volunteers, facilitating meetings, and organizing community festivals to sustain the resilience-building spirit and provide a forum to validate and support the community amidst negative messaging. This approach appears to be a preparatory and consolidating phase in supporting communities as they invest in green initiatives. Both these chapters conclude with a SWOT (strengths, weaknesses, opportunities, limitations) analysis.

The next three chapters take on the agricultural sector's response to climate change and peak oil. Ferguson, in chapter seven, presents two case studies wherein farmers are recognizing the future potential of crop failure not only due to threats to intergenerational farming and/or continued farming, but also environmental threats due to farming methods. The narratives demonstrate innovative successes in educating youth and school children, holding summer camps and workshops, promoting organic farming, internship programs, and offering support to aspiring and new farmers towards sustainable food production and resilience. The next chapter is farmer Tony McQuail's insights gained through his lived experience of growing food with "minimum energy inputs and maximum ecological design" (p. 128). His critical analysis of how industrial agriculture has contributed to increasing the carbon footprint and his own adoption of an organic, community-focused approach are enlightening. He shares the research evidence on EROEI (energy return on energy invested); when pre-industrially, energy invested was manual labor, animals, and tools, while now it is conversion of 'petroleum to food' with more energy investment for return. His forays into use of wind and horse power, as well as organic farm practices, demonstrate the positive ripple effects in convincing the larger community to adopt it. In line with the previous author, Graves, Deen, Fraser, and Martin in Chapter 9 examine current agricultural practices and their impact on water systems, soil, and biodiversity that could lead to diminished food productivity. By demonstrating usable indices to monitor better approaches, they provide a range of solutions toward improving agro-ecosystem health to meet the demands of future populations.

In the concluding chapter on rural sustainability, Christopher Bryant, an academic, addresses sustainability in the rural context. He reviews the dimensions of sustainability including environmental, social, economic, and the increasingly vital one of governance wherein community buy-in and participation are pivotal. Reiterating what other contributors have identified in the book, he examines the many forces beyond climate change and peak oil that could test the adaptive capacity of rural communities. He also cautions communities against acting only when encountered with crises but beginning to act in anticipation of crises. On a closing note, he underscores the need for inclusiveness in building community resilience and strengthening community ties in addition to being sensitive to the uniqueness of each community and freedom to carve its own future.

Succinct recaps of the origins of climate-change conversations inform us that it is more than two centuries old (Black, 2013; Frank, 2014). Although it caught the attention of policy makers only in the twentieth century, the research, conforming evidence of human causation, and efforts to take action have gained pace over the years in multiple spheres (National Climate Assessment, 2014; United States EPA, 2014). This book is another key reflection of the efforts of an expert group of individuals to seek solutions, but in a more unique way, namely building community resilience. The concept of community resilience as presented here is fairly novel (Berkes & Ross, 2013) and is validated by the community experiences shared throughout the book. Almost every chapter supports its narrative with illustrations, tables, and photographs which accentuates the understanding and reality of the experience. The authors have also offered a range of resources both within the chapters as well as the reference list following each chapter. A word index at the end of the book would be helpful. Although a list of contributors with their background information is provided at the end of the book, some authors have not been included. The passionate work of the authors is an inspiration for community leaders, planners and any group committed to betterment of a community. The university-community partnerships and the knowledge and skill transfer evident through the case illustrations are great examples to follow.

For social workers, this is indeed a valuable lesson in macro practice and one worth implementing in communities. Although, attention has been directed to this urgent field of practice for social workers towards sustainability and social justice in people's habitats, not only by professional bodies but also by scholars in the United States (Clark, 2013; Dewane, 2011; Kemp, 2011) other countries seem to have made more progress.

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## Book Review

### Rural Social Work: An International Perspective

Richard Pugh & Brian Cheers

2010

Bristol, UK: The Policy Press

254 pages

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ISBN-10: 1861347200

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*Rural Social Work: An International Perspective* is a modest attempt to survey the research on social work in rural areas in economically developed nations. It relies heavily on English-speaking countries and emphasizes rural diversity and models of practice in rural settings with the hope of developing rural practitioners. Pugh is a social work professor in the United Kingdom and Cheers teaches in Australia; accordingly, they clearly bring something of an international perspective in their review of rural social work.

A short introduction indicates the authors' preference for a focus on the social rather than demographic understanding of rurality, and their presumptions that rural social work practice is essentially generalist practice that embraces community development, local culture, and collaboration beyond social service institutions. Eight chapters divided into two sections follow. The first section of five chapters provides an overview of the experience of rurality. The second contains three chapters that address in turn, practice models focusing on the person, practice models focusing on the community, and rural social service workforce issues. There is an extensive 45-page bibliography with more than 600 sources cited, with almost a fourth of the sources dated between 2004 and 2010, indicating a high currency for a book published in 2010. All are in English. I did find it a bit troubling that Leon Ginsberg, a major figure in American rural social work, is cited a mere two times.

The first chapter is a sketch of the geographic, demographic, economic, political/structural, and community contexts for rural practice. Geography influences practice by limiting access due to remoteness, travel obstacles, and resource depletion. Rural-to-urban migration patterns are no longer the only story; however, rural aging and relocation away from rural areas for educational opportunities remain common. Racial and ethnic diversity varies significantly with many rural communities being dominated by a single group; minority communities experience economic deprivation almost universally. Mechanization of agriculture has significantly altered rural employment, and gender roles have shifted as farm households require female employment in service roles. The political and structural dynamics in support of rural communities varies significantly among developed nations, especially among the more centralized governments. Local and regional autonomy may be more supportive of rural services; however, the small size of rural institutions often stretch resources and force consolidation, which can reduce user and community participation in the structure and delivery of social services. Vertical integration with national priorities may enhance resources, but may also threaten the local sense of community and the shared sense of belonging. Pugh and Cheers

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conclude with three observations: (a) practitioners must understand the unique local context to serve a rural community; (b) rural practitioners must be sensitive to the changing economic and political context to avoid personalizing every problem facing a rural community; and (c) rural practice blends service to individuals with service to the community.

The social dimension of rural practice is addressed in the second chapter. High social visibility and social knowledge may lead to social pressures. Individuality must yield to communality to maintain social order. Often, conformity to traditional gendered roles cannot be avoided. One proves to be of this place through tacit norms of behavior that outsiders and newcomers will not know. Gossip and the related reputations springing from it weave a local uniqueness that the social worker must learn to grasp quickly in order to navigate the dual relationships and stigma associated with services. Professional detachment may be the ideal in urban settings, but is unlikely to be possible in a rural community.

Chapters three and four address indigenous peoples and other minorities, respectively. The attempt to cover the history of colonization and its effect on Australian Aboriginals, the Maori, Native Americans, Inuit, blacks, Roma and other traveling people, migrant workers, gay and lesbian groups, linguistic minorities, and refugees in only 51 pages is quite a task. Readers hoping for more depth are likely to be disappointed, and the authors' conclusions, that cultural relativism conflicts with universal human rights and that social workers must attend to other cultures and needs, is somewhat unsatisfying.

Despite a title that suggests problems and possibilities exist in rural practice, the fifth chapter focuses quite strongly on the deficiencies associated with rurality. Access to services is restricted by distance, rural attitudes toward self-reliance, higher service costs, and national funding formulas. Practitioners are challenged to cope with these obstacles by creatively engaging local resource partners that include other service agencies, informal support networks, volunteers, non-governmental agencies, and even organizations and institutions not directly involved in social services.

Chapter six begins the second part of the book by discussing models of personal social service delivery in a rural context. The point of service may be centralized or distributed; services may be delivered face-to-face or through media; and organizational structures may promote generalist practice or specialization. In the rural context, each of these is significantly influenced by time, distance, and low demand for specialized services. Visiting practice may have difficulty acquiring rural community acceptance, and community-embedded practice may be challenged by rural expectations of social reciprocity and inadequate boundaries structured to maintain confidentiality. Mandatory and statutory services may become particularly problematic.

Although the authors are careful to emphasize the personal-community links in rural practice, they do separate models for community work into a separate chapter. The emphasis in chapter seven is on social planning, "a goal-focused, data-driven process for identifying current social needs, anticipating future ones and developing and implementing plans to meet them" (p. 155). Community planning is envisioned even more broadly as it includes economic development and natural resource management. Case studies are provided to illustrate the social worker's role in these broader community development approaches.

The final chapter summarizes the scant literature on rural social workers, drawing on five short studies in Australia and the United States. Demographics, motivations, preparation, and adjustments to rural practice demands are briefly described. Workplace stress, worker retention, and suggestions for the educational preparation of rural social workers are presented.

The authors were insufficiently ambitious in writing this book. In a time when globalization is permeating every aspect of contemporary life, it is hard to imagine how an international perspective on rural social work would not include globalization's impact on agriculture, national economies, labor markets, and tourism. Refugees and immigration are mentioned on only two pages. Pugh and Cheers' international perspective is realized primarily in illustrations from a variety of countries, but there is little truly international in scope here. Any emphasis on rural social work is better than none, but this book could have been so much better.