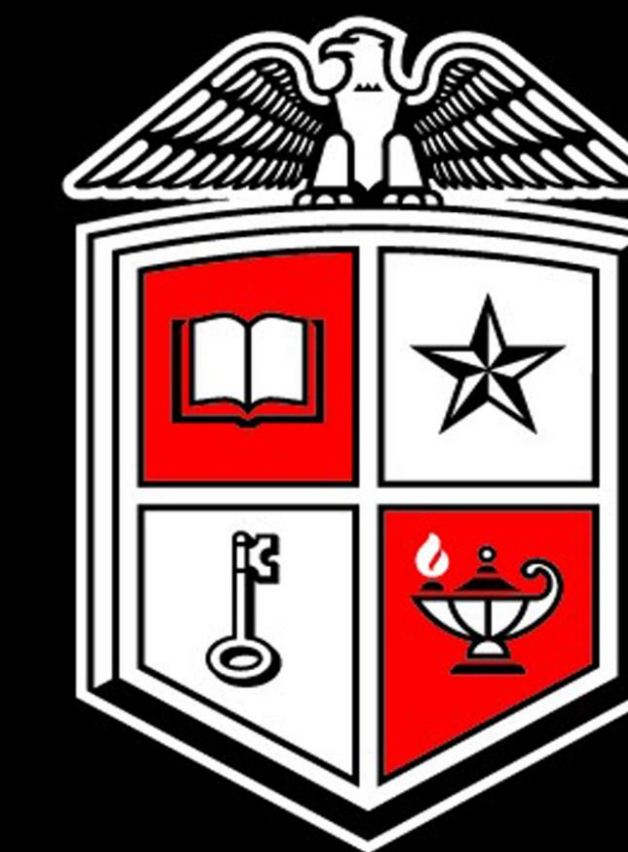


Assessing Food Security in Bolivia

Paz Ximena, SOWER Scholar, Carlos Carpio, Associate Professor.

Department of Agriculture and Applied Economics, Texas Tech University



Introduction

Just one year away from reaching the deadline of the Millennium Development Goals we are far from fulfilling the first goal, which states that by 2015 extreme hunger and poverty should be eradicated.

Food security--defined as the physical and economic access to sufficient, safe and nutritious food that meets individuals' dietary needs at all times--is nowadays a global concern.

Food insecurity is a problem because it has, for example, negative effects on the academic performance of children and adults' work ability, which in turn can affect the prospects of economic growth of a country.

Our review of literature indicates that there is a very limited number of studies regarding food security in Bolivia.

Objective

The objective of this study is to assess the situation of food security in Bolivia using food expenditures obtained from the 2011 Household Expenditures Survey (HES). This information can inform policy makers and institutions on their efforts to improve food security in Bolivia.

Methodology

The research followed a three step approach:

- 1) Households daily calorie intakes were calculated using the values and quantities of sixty six food categories reported as part of Bolivia's 2011 HES. Total calorie intake included calories from three food categories: food purchased and produced to be eaten at home, and food purchased and eaten outside the home.
- 2) The dietary calorie requirements for each household member were calculated using recommended values by the World Health Organization, and then aggregated to obtain household level daily dietary calorie requirements.
- 3) Households with calorie requirements above total calorie intakes were classified as food insecure.

The Statistical Analysis Software SAS was used for data management and analysis.

Results

Table 1. Summary Statistics (N=8529 households)

Variable	Mean	Std Dev
Household size	3.83	2.02
Monthly Household income (Bs.)	3623.13	3732.34
Number of children in the household	1.62	1.59
Calorie requirements (Cal/household)	7601.71	3948.87
Calories consumed at home (Cal/household)	11619.93	7390.66
Calories consumed away from home (Cal/household)	2531.19	3734.10
Calories consumed (Cal/household)	14151.11	8615.60
Expenditures on food away from home (Bs/household)	11.31	16.90
Expenditures on food at home (Bs/household)	42.96	30.37
Total food expenditures (Bs/household)	54.28	37.48
Total calories from food purchased (Cal/household)	9770.51	6501.84
Total calories from home grown food (Cal/household)	1849.42	4625.45
Percentage of income spent on food (%)	46	-----

* Expenditures, calorie requirements and consumption are daily values

1US dollar= 6.7 Bolivianos (Bs.)

Discussion

On average, expenditures on food away from home are higher than expenditures on food eaten at home; therefore, the main source of households' calorie intakes is food eaten at home (Table 1).

On average, calorie intake from home grown food accounts for 13% of the total calorie consumption.

Using household daily food calorie availability as a food security indicator, our calculations indicate that about 16% of Bolivian households are food insecure. However, we found that there is a high variability in the percentage of food insecure households across Departments (See Graph 1).

Bolivian households spend a high percentage of their income (average 46%) on food expenditures.

Conclusions

Food insecurity is still an important problem in Bolivia since one out of five households is food insecure; consequently about 1.1 million adults and almost half million children are food insecure.

The very high percentage of households income devoted to food expenditures suggest that even very small decreases in their incomes or small increases in food prices can have a significant impact on their food security status.

Regional differences in food security seem to be associated with regional agricultural production capabilities(See figure 1). The regions with the lowest percentages of food insecure households are the main agricultural producing areas.

Government policies targeted to reduce food insecurity need to consider the regional differences of the problem.

Results

Graph 1. Food insecure households per Department

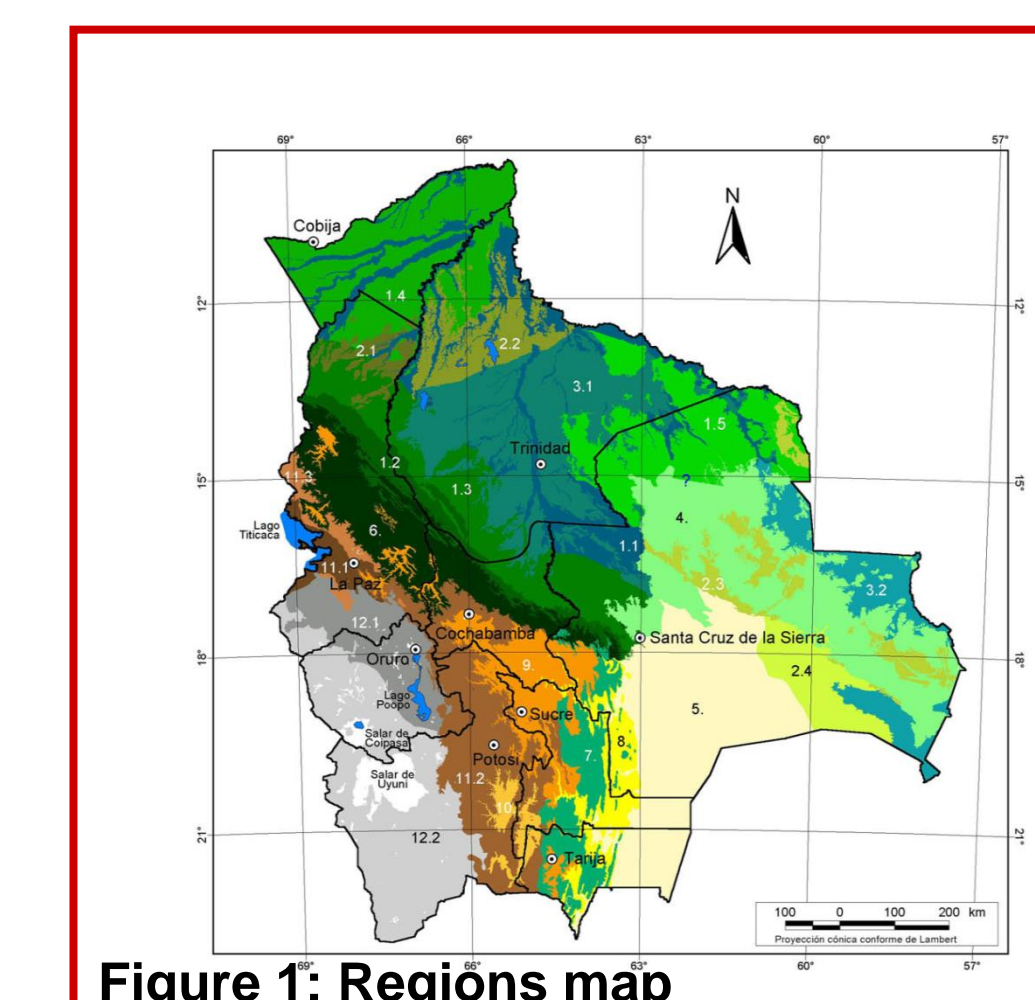
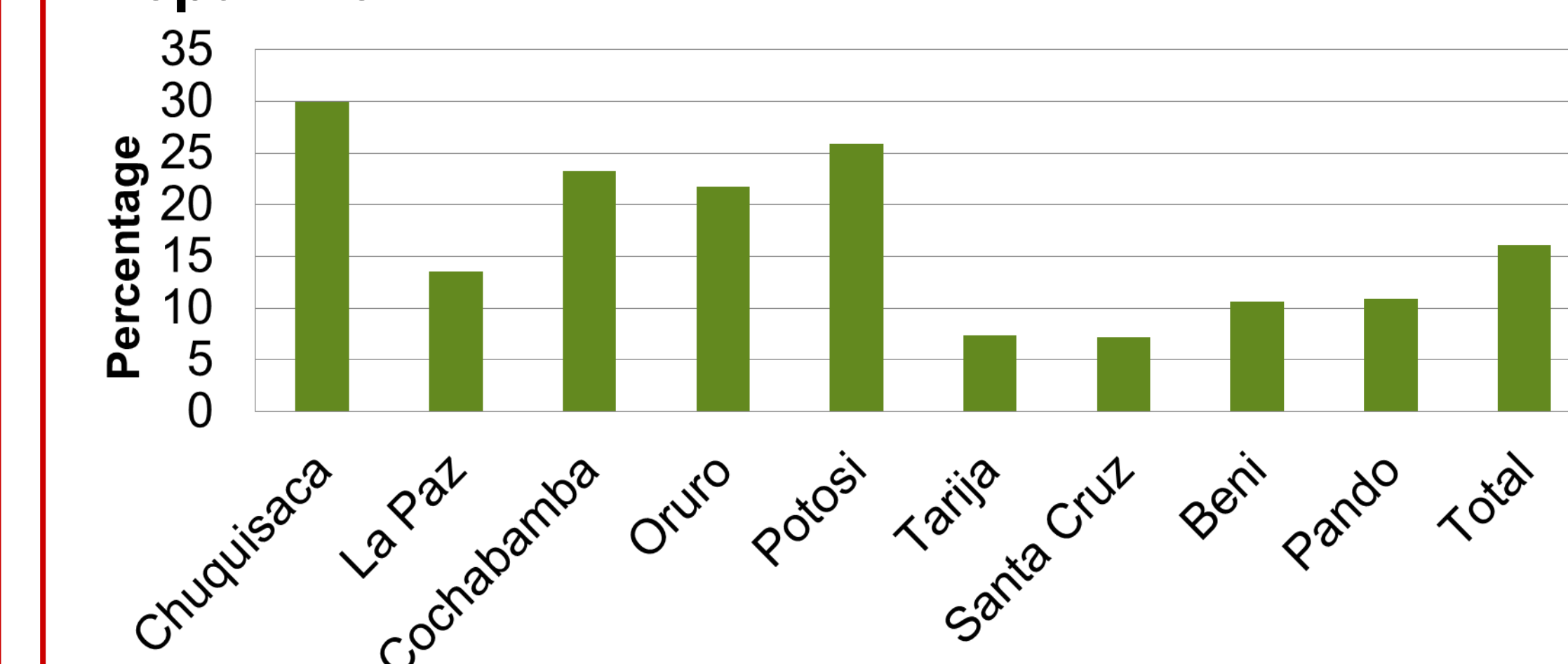


Figure 1: Regions map

Recommendations

Food security involves both food quantity and food quality, therefore future analyses of food security in Bolivia should consider the food quality dimension of the problem.

Future studies on food security should also consider:

- a) The effect of government policies related to food security.
- b) Food production levels of each region and its relation to food security.
- c) The association between households' socio-demographic characteristics and food security.

References

- Melgar-Quinonez, H. R., Zubieta, A. C., MKNelly, B., Nteziyaremye, A., Gerardo, M. F. D., & Dunford, C. (2006). Household food insecurity and food expenditure in Bolivia, Burkina Faso, and the Philippines. *The Journal of nutrition*, 136(5), 1431S-1437S.
- Smith, L. C., & Subandoro, A. (2007). *Measuring food security using household expenditure surveys* (Vol. 3). Intl Food Policy Res Inst.
- FAO/WHO/UNU. (2001). *Human energy requirements*. Rome: FAO.

Acknowledgments

We are grateful to the SOWER Scholar program, part of The International Center for Food Industry Excellence for its funds and continuous support.

