

## Abstract

This paper studies off farm work patterns in the Peruvian Altiplano with the objective to identify and analyse the implications of seasonal and geographic conditions to improve development and poverty alleviation policies. To do this, survey data collected in 2006 and 2007 in two rural Aymara communities from lakeside and dry puna agro ecological zones was used. It was found that seasonality and spatial location condition their on-farm labor demands but also their off-farm labor availability. Thus, seasonal patterns of off farm work can be different or similar across both lakeside and dry puna agro-ecological zones. Households of both agro-ecological zones go to many of the same places and get involved almost in the same activities, however they do so at different times of the year according to their agricultural calendars. They do not work off farm during the harvest season for agricultural households of lakeside zone and the alpaca birthing season for pastoralist households of dry puna zone, indicating that Altiplano households define their availability of off farm labor according agricultural and cultural activities. Current agricultural development policy focuses on increasing job opportunities in the coastal region. This acts as a pull factor and conflicts with the requirements of their agricultural and traditional practices, favoring the wealthier households that have more resources available. Therefore, agricultural and development policies should consider those patterns when they try to increase job opportunities and improve access to education within the Altiplano region.



Lakeside zone, Community of Santa Maria



Dry puna zone, Community of Apopata

## Rationale

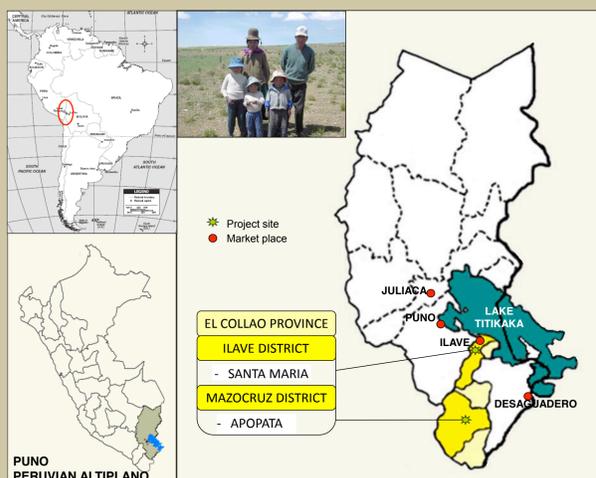
- Off farm work is an important livelihood strategy among Altiplano households. It provides a source of cash for income generation and is conditioned by on-farm labor needs but also by labor market opportunities.
- Seasonality and geographic dispersion also condition off farm work opportunities especially at the moment of making decisions about when and where work off farm.
- Because of the informality of the labor market conditions, Altiplano households have to consider seasonal and geographic variability when deciding whether or not work off farm.
- The increase off farm work opportunities has been encouraged by policies as a strategy for poverty alleviation. Development policy focused on job creation in the coastal region has given opportunity to wealthy households rather than provide equitable benefits.
- A better understanding of off farm work seasonal trends in a specific region can bring new insights for policy in the Altiplano region.

## Objective

- The objective of this study is to identify and analyse seasonal patterns of off farm work comparing two Aymara communities from different agro-ecological zones in the Peruvian Altiplano.
- Research questions:
  - What are the characteristics of households that use off farm work as a livelihood strategy?
  - What are the characteristics of household members that work off farm?
  - When do household members go for off farm work, where do they work off farm, and in which activities they work?

## Methodology

- The analysis was possible using data collected in 2006 and 2007 by the ongoing SANREM-USAID project "Adaptation to Climate Change and Markets of Vulnerable Agricultural Ecosystems of the Altiplano" with the goal of increasing the resilience of Altiplano households to deal with climate and market changes, enhancing systems of income generation and food security of local actors.



- Two rural communities of Aymara ethnicity from different agro ecological zone are participating in this project : Santa Maria from the lakeside zone and Apopata from the dry puna zone.
- Agricultural households of the lakeside zone experience less variable climatic conditions and are closer to market places. They have a system of mixed-farming that includes production for consumption and market oriented activities, and they intensify agricultural activities at the beginning of the rainy season (October) for the sowing and at the beginning of the dry season (May) for the harvest. Alpaca pastoralist households of the dry puna zone experience less favorable climatic conditions and are located in remote areas. They are exclusively involved in grazing livestock for sale in the market and intensify their agricultural activities during the rainy season (December) when grasslands are more readily available.

## Findings

- 41.7% of the households in Santa Maria and 34.3% of the households in Apopata use off farm work as a livelihood strategy for income generation. Livelihood strategies of households from Santa Maria that have members how work off farm are mixed farm (cropping-livestock), commerce, self employment, cropping and livestock production. This contrasts with households from Apopata who exclusively depend on livestock production.
- The characteristics of households members who work off farm are that they are more likely to be men than women, more likely to be younger than older, more likely to have a higher level of education, more likely to have a better command of Spanish as second language. The characteristics of households who are more likely to have members who work off farm are that they are more likely to have a larger land holdings, less likely to have a high number of cattle owned, more likely to have a higher number of improved sheep, more likely to have access to sources of forage, more likely to have access to hired and shared labor and more likely to have a higher household income.
- Santa Maria and Apopata households work off farm at different seasons of the calendar year; but, the availability of labor for off farm work in both communities is related to the agricultural calendar, with off farm work not taking place during the harvest season for the lakeside zone and alpaca birthing season in the dry puna zone.
- Santa Maria and Apopata share some destinations for off farm work but Apopata who has fewer destinations for off farm work that are on average closer than those of Santa Maria.
- Santa Maria and Apopata work in almost the same activities for off farm work, but household members in Santa Maria reported fewer activities than those in Apopata who seem more flexible in participating in different types of work.

Off-farm work	Santa Maria (lakeside) n=48	Apopata (dry puna) n=67
Households with off farm work	41.7%	34.3%
By gender		
Female	20%	13%
Male	80%	87%
	100%	100%

Livelihood strategies	Santa Maria (n=20)	Apopata (n=23)
Cropping	10.0%	-
Livestock	5.0%	91.4%
Mixed-farm (crop.-livest.)	50.0%	-
Commerce	25.0%	4.3%
Self-employment	10.0%	4.3%
	100%	100%

Lakeside Agricultural calendar	Santa Maria (n=20)	Season of the year	Apopata (n=23)	Dry puna Livestock calendar
weeding & pest control	5.0%	Jan, Feb, Mar	--	birth & mating
harvest	--	Apr, May, Jun	26.1%	cull
fallow	30.0%	Jul, Aug, Sep	--	alpaca pregnancy detection
land prep & plating	30.0%	Oct, Nov, Dec	8.7%	sheering
	25.0%	Anytime of the year	52.2%	
	5.0%	Whole year	13.0%	
	5.0%	Every Friday	--	
	100.0	Total	100.0	

Santa Maria (lakeside)	Distance (time)	Main destination	Distance (time)	Apopata (dry puna)
25%	1 day	Tacna*		47.9%
--	½ day	Mazocruz		17.4%
20%	½ hr	Ilave	½ day	13.0%
20%	3 hr	Puno	½ hr	8.7%
10%	½ day	Arequipa*	½ day	--
5%	1 day	Moquegua*	½ day	13.0%
5%	2 day	Lima*	--	--
5%	1 ½ day	Cusco*	½ day	--
5%	½ hr	Nearby community	--	--
5%	4 hr	Desaguadero	--	--
100%				100%

Activities they work	Santa Maria (lakeside) n=20	Apopata (dry puna) n=23
Agriculture	50.0%	30.4%
Commerce	15.0%	26.1%
Construction	20.0%	17.4%
Transport	10.0%	4.3%
Services	5.0%	13.0%
Education	--	4.3%
Mining	--	4.3%
	100%	100%

## Conclusions

- In both agro-ecological zones, those who work off farm are mostly male members of the wealthy households who have access to education and a better command of the Spanish language, land and animal holdings, forage, improved animals and hired labor. The poorest remain in the community to work on their own or other farms of the community. This is especially the case of the pastoralist households of the dry puna zone located in remote areas.
- General patterns of off farm work can be different or similar across both agro-ecological zones. Households from lakeside and dry puna agro-ecological zones go to the same places and get involved in almost the same activities. However when looking at the details they do so at different times of the year, according to their agricultural calendars.
- Seasonality and spatial location condition their on-farm labor demands and in turn their off-farm labor availability.
- There is a season when households neither from the lakeside nor the dry puna work off farm: the harvest season for agricultural households of the lakeside zone (May and June) and the alpaca birthing season for pastoralist households of the dry puna zone (January to March), indicating that Altiplano households define their availability of off farm labor according agricultural and cultural activities.