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Andean Agricultural Biodiversity, Socio-Economic Factors and their Impact on Dietary Diversity and Nutritional Status: Case Study in Puno, Peru

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Abstract

Despite the high food plant biodiversity of the whole Andean region of Latin America and its nutritional potential to improve human nutrition, the rural population in Peru is still suffering malnutrition.

To achieve Millennium Development Goal I sustainable strategies should be developed. Food Diversification can be a sustainable approach.

Crop production in Puno, situated at 3,580 m a.s.l., includes a great variety of potato, quinoa (*C. quinoa* Willd.), cañihua (*Chenopodium pallidicaule* Aellen), tarwi (*Lupinus mutabilis* Sweet) and many other species. Unfortunately some of these are neglected despite their high nutritional potential (high quality protein, iron, calcium, provitamin A etc) in the present time.

Several local communities, however, still keep traditional knowledge and farming practices contributing to their food security.

Decrease of traditional knowledge, lack of nutrition education and adoption of urban consumption patterns of high energy but low nutrient density foods influence utilisation of traditional species and impair a healthy balanced diet.

Aim of the study was to assess the impact of traditional andean crops on local food security. Socio-economic factors were also considered.

Four Aymara rural communities at different ecological regions in the South of Puno at the Lake of Titicaca were selected. They live and show different degrees of agrodiversity at different altitude: at 3850 m, 3947 m and 4100 m a.s.l.

Semi-structured interviews and a semi-quantitative 24 h-recall were conducted with women between 15–49 years of age. Their nutritional status was measured with anthropometric indicators (height and weight for calculation of BMI), hemoglobin levels and collection of dried blood samples for quantification of retinol binding protein (for Vit A status) and transferrin receptor (for iron status).

The survey and measurements were carried out in three periods: rainy, post-harvest and farming season.

Results of this study will highlight the need of strategies for diffusion of information about a healthy and balanced diet for vulnerable groups (women, children, sick and elder people) in the higher Andean area. It is expected that the nutritional value of traditional species can be demonstrated as well as the need to supporting programmes linking traditional agriculture and nutrition security.

Keywords: Andean crops, dietary diversity, human nutrition, Peru