



Ernesto Gonzalez-Estrada
PhD candidate
Institute of Ecology and Resource Management
The University of Edinburgh

James Rennie Bequest Committee
University of Edinburgh

Dear Sirs,

I would like to put forward the activities that I undertook during my stay in Lima, Peru, as a result of having my flight sponsored by the James Rennie Bequest.

1. Attendance to the Third International Symposium on Systems Approaches for Agricultural Development (SAAD-III).
November 8-10, 1999
Universidad Nacional Agraria, La Molina (UNALM). Lima, Peru

The SAAD symposiums have become an important forum for the presentation and discussion of systems research approaches, methods, and tools that are being used to obtain a more integrated understanding of agricultural systems. The 1999 SAAD Symposium was orientated to the development of methodologies for interdisciplinary multiple scale perspectives. My participation in the symposium consisted of the presentation of a poster under the category "*Systems analysis at the regional level*". Details of the work are as follows:

E. González-Estrada, R.H. Fawcett, J. Wright and M. Herrero: "Ecoregional Modelling of Sheep Farming in Latin America: Proposed Methodology for Integrated Communal Resource Management".

The objective of this work was to propose the development of a methodology to build a decision-support system for integrated communal resource management for sheep farming. Its development was based on the assumptions that 1) neither regional strategies nor conservation plans can succeed if living standards of local farmers are not improved, and that 2) reduction of resource depletion is directly linked to the adoption of improved alternatives in livestock and crop production by the farmer. This methodology is able to produce a tailored decision making system for a given ecoregion based on the performance of individual farms and a set of directive regional objectives. Once this decision-making system is validated, it might support the legislative framework that regulates the use of communal resources through the integrated assessment of alternative land use practices.

This work will be published in the proceedings of the Conference in electronic format. It is important to highlight that the SAAD-III committee will review all the submitted papers

to select several for publication in the Kluwer Academic Press book series "Systems Approaches for Sustainable Agricultural Development".

2. Research visit to the International Potato Centre (CIP)

November 11-21, 1999

Lima, Peru

During this time I undertook a short research visit to Dr. Roberto Quiroz's work team. Dr. Quiroz is the head of the Department of Production Systems and Natural Resource Management at the CIP. Firstly, I participated with Dr. Percy Zorogastua learning some of the techniques they utilise in their project: "SIMSRIG: A Multiscale Integrated Modelling System Based on Remote Sensing and GIS". SIMSRIG is a system used to characterise the Altiplano of Peru and Bolivia into agro-ecological zones, based on topography and temporal changes in the vegetation index, land surface temperature, and evapotranspiration, all of which are monitored with remotely sensed data. These data are linked to livestock models in order to generate different scenarios that can then be analysed using regression and fractal methods. Getting to know how this system works is relevant to my PhD project as I intend to utilise GIS techniques linked to simulation livestock models.

Secondly, I worked along with Thomas Bernet with his user-friendly farm household model to improve decision-making in participatory research. This is a computer-based farm-household model designed to assist extension services and researchers in advising farmers. The model allows the user to define specific production options and resource constraints under different scenarios. Working with Thomas Bernet was very helpful for my PhD research as I am developing decision-making models for small sheep farmers.

I am very grateful for the opportunity that the Bequest fund provided me in funding my trip to Peru. The knowledge and experience I gained there is going to be very useful for the development of my PhD research.

Yours faithfully,

Ernesto Gonzalez-Estrada