

# PROPOSED RESEARCH FOCUS FOR THE THEME: "SOCIAL AND ECONOMIC RISK"

V. Alary

With B. Faye, V.T. Binh, G. Duteurtre

## Context and Challenges

The development of livestock production in Vietnam poses many questions given the recent integration of Vietnam into the WTO (with its essential health requirements). There has been rapid growth in domestic demand for animal products due to improving living standards and the development of intensified production and specialization in the rural areas.

The integration of Vietnam into the WTO raises questions and sets requirements for product quality; notably in the context of the significant health risks linked to avian flu, and in food product hygiene and safety. To encourage quality production, the Vietnamese government is developing a sort of "charter of good practice": "Vietnam Good Agricultural Practices", which should encompass all agricultural products including animal products.

The internationalization of trade and the growing demand for imported inputs needed for the expansion of animal production (importation of grains, concentrates, etc...) has collided with the recent increase in prices on the world market, jeopardizing the viability of small farms on one level, while more broadly, rendering the local livestock sector vulnerable to competition from imported animal products.

Animal production development in Vietnam is undergoing a process of intensification linked to both high pressures on land use (particularly in the Delta) and with the guidelines adopted by the Government to increase production in the

context of strong demand. This process of intensification raises many questions about environmental sustainability while questioning the place of small, diversified farms that must produce to meet the consumption needs of both the family and the local market.

To cope with environmental problems, the Vietnamese government wishes to develop special breeding areas away from residential areas to limit epidemics and provide solutions for animal waste treatment. This model obviously runs against the traditional layout of small farms, where the residential unit and the production unit are strongly intertwined. The IPSARD is very demanding, and requires strict guidelines and policies to promote the development of special areas for breeding.

Finally, the livestock sector suffers from a lack of organization in access to services and sometimes even a lack of skills in certain sectors such as dairy farming. Many funds from incentive programs are diverted to other uses. For example, grants for the acquisition of improved-breed dairy cows for the development of milk production have allowed farmers to purchase cattle, and produce calves without necessarily producing dairy products for sale. These forms of aid diversion reveal some disparities between the decisions of policy makers and the objectives and constraints of the farmers themselves.

More generally, the Vietnamese Government is sorting through a number of questions related to the development of sustainable farming models that seek to incorporate both the quality requirements

(including, vis-à-vis the environment) and taking into account the socio-economic and environmental constraints inherent in these areas. These include land-use pressures, a high resistance to pooling the means of production, a badly organized production environment--which limits access to services, differing levels of access to markets for diverse breeding systems and more specialized ones.

Many projects that focus directly or indirectly on the economics of animal production have been developed or are under development as part of PRISE. Some of these projects are being carried out at the farming systems level (Add Trans, intensified PA project, Tuan thesis) while others are carried out at the grassroots level (Mata Red River Delta Project, AsiaProEco Project, PAM Analysis, various studies of PCP Malica on the organization of livestock production channels, Duras Porcine Project, Gripavi Project).

These projects reveal a number of priorities related to the theme "Social and Economic Risk for the Sustainability of Farming Systems":

- Taking into account the environmental issues related to land-use pressures in the sustainable development of farming systems;
- Taking into account issues of quality in the development of livestock production channels.

## Priority Themes

Following interviews with working partners and actions already underway at PRISE, two research themes on the socio-economics of livestock production have been designed.

### Theme 1: Identification of Sustainable Models of Livestock Production Systems.

This research falls directly within the scope of inquiry pursued by the Vietnamese Government and various research institutes in their search for farming systems models to promote. Rather than beginning a priori with model development, the idea

is to study and understand the diversity and evolution of breeding systems in Vietnam's new context: increased demand, the introduction of new technologies, price variability in products and inputs, health risks in the poultry and pork production chains.

Any analysis at the production system level should highlight the threshold of viability, taking into account the economic, social or health risks and uncertainties. It must also encompass the development process for these systems, particularly in terms of specialization or diversification, according to the degree of vulnerability of each system.

The hypothesis is that risk management is profoundly different between the diversified and specialized systems and that the sustainability of the systems, whether they are diversified or specialized is a result of the families' adaptability (skills, opportunities) to managing their risk.

A model-based analysis must take into account the evolution and sustainability of these systems when faced with both policy and technological changes (introduction of new forage plants and genetic improvement, for example). The objective is to analyze the sustainability of different systems reacting with external economic, social and environmental parametric changes, to identify the viability of each system.

Given the government's continued development initiatives for special animal production areas, it is important to give due importance to the analysis of the family system (residence, consumption, other activities undertaken on the farm) and the livestock production system (location). Following the internship project supervised by S. Fanchette (IRD), one could imagine a process of reflection on a model of farming that maintains the links between the two systems (family system and production system), integrating the management of environmental constraints.

In the framework of this theme, 3 activities were proposed:

#### Activity 1: Development of a Bioeconom-

### **ic Model for Dairy Breeding Systems**

This activity would be conducted in two phases. A bio-economic model of dairy farming systems in the region of Moc Chau will be developed by Paulo Salgado and will be hosted for 3 months at Wageningen University within the framework of the Marie Curie project focused on the sustainability of dairy farming systems (June to August 2008). This model should help to:

1. define the role and importance of milk production at the farm level;
2. establish the sustainability of dairy farming systems: the degree of vulnerability, risk of intensification, environmental management;
3. provide the reasons for adopting technological innovations (including fodder crops) or not based farming systems;
4. Form an analysis of the impact of price changes on products and inputs on the sustainability of systems.

The region of Moc Chau presents the advantage of having been the subject of much research in the framework of PRISE, which permits arriving rapidly to the stage of formally mapping and describing the behavior of producers. However, the Moc Chau region is rather special because of its idealic climatic conditions and rich land. Thus, it is proposed to extend this analysis system to another dairy farming area more representative of the context in which the dairy industry must develop in Vietnam. This extension could be done within the framework of a French internship program in the course of 2009.

### **Activity 2: Study of the Sustainability of Diversified Breeding Systems Focused on Small Farm Animal Production (Poultry and Pork)**

The study of the sustainability of these farming systems would be based on an analysis of the diversity of systems found in an area (to be chosen) and a detailed analysis of the multiplicity of risks and uncertainties faced by producers in connection with the means of production (productive appliance), lifestyles, expecta-

tations, capabilities and developmental opportunities. This cross-analysis of risk with the capacities and opportunities will allow for the scrutiny of the viability thresholds of each system and allow the determination of the degree of vulnerability to external shocks.

The use of a bio-economic model to map the functioning of these farming systems is aimed at understanding the impact of external changes (political, technological) on patterns of evolution of systems as to their economic sustainability.

This activity would be conducted in close collaboration with the animal health initiatives and activities on the behavior of producers facing those health risks. The assumption is that the health risk is a significant threat to the sustainability of diversified systems.

In this activity, a more refined study could be conceived pertaining to the organization of the family system (residence, consumption, multiple activities) and the system of livestock production (location). Models will be devised to incorporate the traditional links between these two systems while considering environmental issues, and taking them into account.

For this activity, a thesis project has been proposed, under the sponsorship of AUF scholarships with Vu Dinh Ton. This thesis project could be designed as a Franco-Vietnamese partnership and be hosted at the Agricultural University of Hanoi. We could also imagine a co-advisory with the University of St. Quentin en Yvelines, which has done extensive work on the issues of vulnerability and risk.

To support this modeling work, training sessions could be held in Hanoi (DESI scholarship); supported by additional training in Europe.

### **Activity 3: Risk Management on Small Farms in the Mountain Areas in Conjunction with a Project to Develop Farming Activities Through Micro Credit**

The NGO "Sourires d'Enfants" headquartered in Grenoble, working with ethnic minorities in the hilly areas. Its mission

is mainly the construction of schools and training teachers to ensure education for children in order to enable them to access the CP but they also provide health and nutritional interventions in the schools.

To facilitate the payment of contributions required for educating children and more generally to improve the living conditions of families, the NGO is developing support frameworks for professional activities. Some are to be focusing on technical training (fattening pigs, development of farm rabbits, etc...) and others to the development of economic infrastructure initiatives (the development of a localized micro credit system).

Various measures have been developed in collaboration with Agronomists or "Veterinarians without Borders" for the technical aspects, and GRET / IPSARD for assembling cooperatives. The organization has more recently developed links with CIRAD (including Vincent Porphyre) to conduct a feasibility study to seek out the best type of farming systems to develop and to elaborate a study on the financial aspects of nutrition in porcine production.

Today, this NGO would like to develop a more formalized partnership with CIRAD. They are currently waiting for a draft agreement from the MAE providing for 4 internships over 4 years (response awaited in mid-May). Within these internships, Jan Thomas would like to develop a partnership and working mission with CIRAD in order to address the issues of risk management at the household level in investment decisions and the reimbursement of credits for developing small animal (pig or rabbit) farms. This problem arises from a finding that producers are systematically reducing the fattening period of pigs to repay 50% of the loan in the first year and 50% the second year. The NGO does not have the hindsight to know if the third year, the producers will fatten the piglets the end of the process to qualify for the maximum selling price of the piglets.

This problem directly falls within the scope of sustainable farming systems by integrating nutrition at the family level but also the economic benefits of establishing

a micro credit system.

### **Theme 2: Analysis of Risk and Uncertainty in the Animal Production Chain**

This second theme seeks to integrate the socio-economic risks and uncertainties related to the variability of prices, market access differentials, and the variability of transaction costs in a more specific analysis of health risks in the organization of animals products in Vietnam. This analysis of the function of the animal production chain will be undertaken in close liaison with the PCP Malica project on the organization of the quality chain.

#### **Activity 1 (ongoing): Evaluation of Health Policies in the Poultry Chain (CIRAD / HAU)**

This activity began in 2008. An initial cost benefit analysis was conducted to assess the impact of a vaccination policy against avian influenza in Vietnam. Modeling work continues, partially in Montpellier, to integrate an epidemiology model of avian influenza with economic analysis.

#### **Activity 2 (ongoing): Analysis of the Impact of the Risk of Avian Influenza on the Restructuring of the Poultry Sector.**

Followed by Muriel Figuié.

#### **Activity 3: Development of a concept note: "Research on Socio-Economic Behavior of Duck Producers and Duck Commodity Chain Stakeholders Facing HPAI Around Hanoi".**

1. Study the functioning of markets through the New Institutional Economics (with emphasis on the issues of transaction costs, externalities...)
2. Classic study of value chains in the pipeline
3. A PAM (Policy Analysis Matrix) approach is to be used to determine the effects of identified policies on the social and economic benefits to the industry.

#### **Activity 4: Other proposals:**

There is a strong demand for training

from Vietnamese Institutes, especially concerning institutional approaches to approximate the operation of production chains. It has been suggested that training on institutional approaches may take place in October-November 2008 in Hanoi under the DESI scholarships. Guillaume Duteurtre would be interested in running the program in collaboration with Paule Moustier (PCP Malica).

The mission of Guillaume Duteurtre could be accompanied by a prospective analysis of the development activities on the economics of animal production chains, for which a significant demand is evident, particularly concerning the matter of the constitution of quality chains as the organizational base for networks vis-à-vis the changes related to the internationalization of trade.