E3P Project

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Environmental Protection and Pig production, a project of the EC / Asia ProEco initiative

Acronym of the project :

E3P

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EU contribution : 250 000 euros

Projet coordinator : Vincent PORPHYRE, CIRAD

The Asia Pro Eco initiative

The Asia Pro Eco Programme is a five-year European Union initiative, launched in 2002, based on the experience and the inputs provided by the Asia Eco Best Programme. With a budget of ?31.5 million, the main target is to adopt policies, technologies and practices that promote cleaner, more resource efficient, sustainable solutions to environmental problems in Asia. The Programme provides support through grants to policy reinforcement, operational & practical dialogue, diagnostic studies, technology partnerships and demonstration projects in the field of the environment. The implementation will concentrate on specific projects under the Call for Proposals mechanism accessible to public or non profit organisations in Asia and the EU.

The context in Thai Binh province

The Red River delta (RRD) is the hub of all economic activity in Northern Vietnam, where the majority of the region's population is concentrated. It is under threat due to its strategic position and its unchecked population growth that is putting an increasing strain on resources. Population densities exceed 1000 inhabitants per square kilometre in Northern Vietnam. Pollution due to agriculture ? crops and livestock - is one of the main issues. It is felt all the more sharply since the 1,800,000 inhabitants of Thai Binh depend directly on the water resources of the Delta, as well as the 18,000,000 people living in the whole Red River Delta.

The pig production is one of the major official priorities for rural development in Vietnam. Fuelled by a growing population, rising incomes and urbanization, demand for livestock products is growing at a dramatic high rate. Thus, livestock production?s intensification, and pig production in particular, is bringing authorities and producers together to meet the challenges of the next decades. This trend will be better able to respond to the animal protein demands of a wealthier population as well as reach the international export markets. On the provincial level, agricultural services have been dedicated as project managers for national development plans and most especially the National Program for Lean Meat Pig Development which has clear quantitative goals. Centralised orientations favour investing in animal husbandry infrastructure, concentrated feed production commodity chains, slaughtering facilities and the introduction of high growth potential breeds. In the Red River Delta area, pig production development objectives call for 8,500,000 pigs and 500,000 tonnes of animals slaughtered per year.

Thai Binh province, our targeted province, is situated in the Red River Delta at 150 kilometres from Hanoi. An ambitious project co-financed by the Ministry of Agriculture and Rural development (MARD) foresees the creation there of 500 animal husbandry units with 10-200 sows and 100-1000 fattened pigs (1,200,000 heads in total) by the year 2010 to reach 80,000 tonnes of lean meat per year. In addition, private smallholders' initiatives and investments will also join this evolution towards intensification. In order to support these objectives, the province turns already from its low-income rice production (1,050,000 tonnes/ per year) to increase maize and soya bean production (20,000 tonnes and 6,500 tonnes/ year respectively) for animal feeding. We can be afraid intensive agricultural methods may damage soils and watertables. Well-balanced pig manure?s transfer would remain critical for sustaining soil fertility and would change a polluting material into a fertilizing product. Even if farming systems are mainly based on livestock-crop integration, decision makers are set upon increasing the number of low-land industrial large-scale models.

At the farm level, individual strategies and husbandry systems remain largely heterogeneous. Herd sizes, their performances and the technical choices have an important impact on the resulting animal-waste amount. In the same way, these different examples infer different behaviours, means and strategies in the waste management; they still need to be understood to evaluate the acceptation of possible innovations and regulations.

In traditional rice production systems, animal waste is regularly taken out to paddy fields or fish ponds. Animal manure use in agriculture returns nutrients and organic matter to the soil, contributing to the maintenance or restoration of soil fertility in term of nutrient content, soil structure, and water retention and drainage capacity. This integration of animal husbandry within the local agricultural system seems to be an efficient way of dispatching waste over land under cultivation without causing any damage to either surface or underground water. Animal-waste application over farm land is indeed the most inexpensive treatment method, but fish and crops requirements, soil features, and in-manure nitrogen and phosphorus levels are not taken into account. The impacts of animal wastes on the environment are determined by the manner in which wastes are handled and by the nutrient balance in the immediate and larger system, including organic matter.

For all of the above contextual reasons, Thai Binh is an interesting field to work out sustainable provincial strategies. This diagnostic project that will lead to a preliminary benchmarking translated into a basic Geographical Information System (GIS) is clearly an urgent challenge to face: indeed, low-land pig production is causing such significant local, regional and global

environmental damage.

Therefore the project aims to highlight existing situation and expected threats against environment. This preliminary work will be the base for a decision making and strengthening tool for the Thai Binh's authorities? will, in order to define urgently suitable technologies and a land-use and investment planning, and to enforce the regulation considering environment.

Objectives

The project will assess the surpluses of animal wastes, the needs for nutrients by crops and fish ponds, and it will define the more reliable manure management and technologies? options. This diagnosis will support the agricultural production intensification as an income-generating activity in rural areas and protect threatened environment and natural water resources in deltaic area.

The project addresses policy makers responsible for agricultural development policies at the national and pro-vincial level, and involves the provincial livestock breeding company, farmers and producers organizations.

The main activities will be benchmarking works and surveys focusing on local intensifying agricultural systems, with a spatialized and pro-active approach of the pig, crops and aquaculture production sectors. A preliminary appraisal of appropriate pig manure processing and Training program are also planned.

Implementation team

Project supervisor

EC supervision of the project is assumed by Patrick Cooney, Programme Officer from Co-operation Section of the Delegation of the European Commission to Vietnam.

Project coordinator

The project's co-ordination is assumed by Dr Vincent Porphyre, DVM from CIRAD (France)

Experts

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Yes