Activities

Baseline study on Animal waste organic matter production by pig farms

1. characterise the observed swine population, farming systems and management practices and its variability, e.g. herd composition; numeric productivity, zootechnical performances and management, feeding practices; production costs and perception of pig farmers of the environmental issue,
2. build an operational typology of sampled pig farmers
3. assess the opportunity costs for an internal use of pig manure (for crops/aquaculture/pig integrated systems) and the current prices for pig manure in the province.
4. quantify each pig farmers? categories at the provincial level according to the defined typologies and the official census.

Appraisal of rejected effluents
produced by each category of pig farmers
1. an animal-waste sample collection campaign and specific analysis on slurries that will clarify the quality of animal-waste and its variability and will allow determining the amount of produced N and P nutrients;
2. technical expertise that will assess the variability on the slurry quality (N/P contents) depending on the observed technical practices (feeding management, water use for animal drinking and washing, housing), and storage facilities and technological manure processing.

Implementation of a Pro-Active Conciliation Tool (PACT) method applied on collective identification of individual constraints, identification of other stakeholders and their existing or possible relationships, opinions and personnal perceptions about the local animal-waste pollution issue. It will involve a ?local expert? committee gathering concerned stakeholders and policy makers.

Demand and requirements of nutrients for crops and for aquaculture

Analysis and Representation of

animal-waste organic matter?s flows at the provincial level

1. Image data collecting to fit the Crop Curve (rice, maize and soja) in study area for the interested periods
2. Image Processing
3. Integrating image processing results into a GIS database.

The GIS will be designed to receive the different kind of information from other components. It will gather:
1. Quantitative information: number of units, density, size, estimated effluents
2. Digitising paper maps
3. model for the on-going strategies for pig production and manure management

to optimise the animal organic matter production and consumption considering various constraints: adequacy between pig effluents and crops/fish ponds requirements, periods, distance, costs. With data from observed farming typologies and decision rules, this spatial model will identify possible transfers with a mapping considering OM production/demand balance, and then the amounts of animal waste needed to be spread as well as storage needs and associated technologies. A hierarchy will be established between all the parameters with weightages and a map of the environmental risk will be produced.

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