Using classification statistics for stratified sampling

The problem of the generic range

Agro-ecological innovations face the problem of their generic range which results in small adoption rates at large scales. The generic range can be improved with a stratified sampling procedure and an assessment of the capacity of an agro-ecological innovation to adapt to the local agro-ecological and social contexts.

Using classification statistics for stratified sampling

We used this approach in Martinique, a tropical island of the French West Indies. The case-study involved improved fallows for vegetable production.

A participatory approach identified several potential adoption determinants.

The participatory approach suggested land ownership and land size as the two key pre-requisites for an ex ante assessment of improved fallows diffusion. Therefore, the participatory approach identified 2 promising sub-groups: livestock farms and banana/sugar cane farms which can be considered as mechanized farms and livestock farms.

Based on the national agricultural census database (BGA 2010), we divided the total 1382 population of vegetable farmers in Martinique into 6 homogeneous subgroups involved completely or partially in vegetable production. Field interviews were performed to test the results of the participatory approach.

Generic range and risks of exclusion

The participatory approach suggested land ownership and land size as the two key pre-requisites for an ex ante assessment of improved fallows diffusion. Therefore, the participatory approach identified 2 promising sub-groups: livestock farms and banana/sugar cane farms which can be considered as mechanized farms and livestock farms.

The unsuitable land tenure farm group and the poor vegetable farm group were considered as potentially not concerned because of the absence of land titles or insufficient land size. This is about half of the total population of the 1382 farmers involved in vegetable farming. Specific stratified sampling for each group is required to reduce exclusion.

Promoting adaptability and the number of agro ecological packages

The risk of exclusion can be reduced by improving the generic range of agro-ecological innovations. Through adaptability, and larger portions of innovation packages.

Some agro-ecological innovations may not be fitted for every type of farm. There are risks of diminishing returns in research and diffusion in this case. A farming system approach could overcome conservative postures, promote trust, and improved diffusion.

The stakeholders involved in agricultural policies need to put agro-ecological innovations into the prospect of the agricultural transformation and consider the risks of exclusion.

In Martinique, the potential adopters willing to test improved fallows

In Martinique, the potential adopters willing to test improved fallows.

The field interviews among 27 mechanized farms and livestock farms revealed that 74% of them expressed a willingness to test the improved fallows. This is about one-third of the total population of the 1382 farmers involved in vegetable farming.