

## **Using Satellite Imagery and geo-referencing technology for building a master sampling frame**

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A master sampling frame is a sampling frame that provides the basis for all data collections based on sample surveys and censuses in a certain sector. In the case of agricultural sector, the master sampling frame allows linking the farm characteristics with the household and thus having a better understanding of the rural dimension.

When the master sampling frame includes the geographic dimension of the statistical units, farms and households can be connected to the land cover and use dimensions. This generates a series of benefits. The link of the farm with its geo-referenced plots, which can be observed on the ground and measured, allows the assessment of the quality of self reported responses of farmers and the use these measurements for benchmarking. Moreover, this link facilitates agro-environmental analysis.

This importance of the geographic dimension is typical of area frames. The traditional approach to set up an area sampling frame was based on collections of printed maps and aerial photographs (not always ortho-rectified) and involved a large amount of manual work.

Current technologies, in particular the ability of GIS to efficiently handle different layers of geographic information, in particular RS-based thematic maps, have made this task much lighter. Stratification for example can be performed in a more efficient way. The evolution of GPS, with sufficiently accurate devices at affordable prices, has substantially changed the field work more than the definition of a sampling frame, but both aspects cannot be separated, because the choices in the definition of the sampling frame needs to take into account the field survey aspects.

**Key Words:** Area frame, list frame, master sampling frame, GIS, remote sensing.