



## Combining list frames with different kinds of area frame

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### Abstract

The problem of producing agricultural statistics when incomplete or out of date lists are available is crucial for many countries, which take the decision to combine different lists, in order to increase the coverage. If the frame is still incomplete, an area frames can be used, in order to guaranty complete coverage and, consequently, unbiased estimates. However, area frames generally include outliers and combining area frames with list frames offers the possibility to reduce the instability of estimates, increasing their precision. Main estimators proposed in the literature for combining area and list frames require the identification of list sample units included in the area frame sample. The difficulties connected to this activity is analysed, with reference to the different kinds of area frame. Another problem in the combination of area and list frames is determining the sample allocation to the different frames, for which a solution is proposed, based on a two-stage adaptive sample selection procedure with permanent random numbers. This proposal optimizes the allocation of sampling units to the frames during the sample design, and guaranties unbiased estimates.

**Keywords:** list frames, area frames, combination of frames, multiple frames