Map accuracy assessment and area estimation:

REDD+ approach and challenges

Erik Lindquist
Inge Jonckheere
Remi D'Annunzio
Yelena Finegold
Antonia Ortmann

Current Situation

Assisting countries to estimate Activity Data for REDD+

Map + sample AND sample-only methods

Referencing Olofsson et al. as guideline

Current Situation

Countries have already maps they want to use

Especially when dealing with 'historic' estimates

Countries want to use maps for other purposes

Tend towards maps + samples as solution

We say:

Maps are not sufficient to produce estimates according to IPCC GPGs.

Estimates are best produced with a well-interpreted sample

Maps help to reduce standard errors and are useful for other things

Changes Made Since Last Mtg.

Sample Unit Selection
  Pixel

Stratified Area Estimation - term changed everywhere.

Maps as stratifiers
  Concept explained
  Efficiency of stratification considered
    compare sample as simple-random v. stratified

Suggested Way Forward

Historically, we started with maps and used them as basis for assessment

Moving forward we may consider using a sample first, then creating map and post-stratifying sample to improve precision of estimates

Making good use of existing CE surveys in countries

Something Interesting

If using a map as a stratifier...

Is pre-stratification advisable?

it is much better to over-map change than under-map change. Errors of commission are less penalized than errors of omission.

Issues / Challenges

How do we do this over and over and over and over….

Suggested Way Forward

If no pre-stratification…

How to integrate systematic sample with stratified random sample for changes?

Issues / Challenges

Are we at the limit of the data we use?

Suggested Way Forward

Integration of new data sources for reference data collection…

ASTER (for historic estimates)
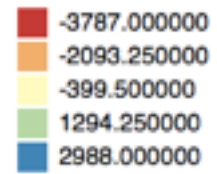
Planet Labs (for more recent)

Digital Globe (for more recent)

Examples of integration using CEO - SEPAL.

BFAST Monitor Time Series Analysis
2008 - 2015

Strong Negative Change

🟥	-3787.000000
🟧	-2093.250000
🟨	-399.500000
🟩	1294.250000
🟦	2988.000000

Strong Positive Change