Introduction to the FRA Remote Sensing Survey (RSS)

• Previous global remote sensing assessments
• Why this is an important part of FRA
• General design of the FRA 2020 RSS
Why is FAO/FRA carrying out a remote sensing survey?

• Provide independent and consistent estimates of forest area and changes over time

• RS based global estimates of forest area from other actors vary considerable

• Global data on forest area change is scarce – only Hansen and FAO – and often widely questioned

• Capacity development in countries
Previous remote sensing work in FRA

- FRA 1980
  - Remote sensing used to get forest area estimates for some countries

- FRA 1990 and FRA 2000
  - Remote sensing surveys for tropical region (117 sample units)
  - Global forest map 2000
Previous remote sensing work in FRA

- **FRA 2010**
  - Global remote sensing survey 1990 – 2005 to generate statistics (~13,500 sample tiles)
  - Global forest map 2010

- **FRA 2015**
  - Update of global remote sensing survey to cover period 1990 - 2010
FRA 2010 remote sensing survey

• The first comprehensive global survey
• About 13,500 sampling units 10 x 10 km
• Landsat images from three points in time were interpreted and changes delineated and labelled
FRA 2010 RSS – lessons learned

• Good estimation of forest area
• Weak estimation of forest area changes
• Cumbersome and time consuming to carry out
FRA 2020 RSS objectives

- Provide forest area estimates with an accuracy similar to previous survey
- Provide forest area change estimates that are significantly better than previous survey
- Generate estimates at global, regional and biome level
- Use a methodology that can be easily up-scaled for use at country level for countries that so wish.
Collaborators

• Joint Research Centre
• RSS task force established to provide advice
Global hexagonal grid
FRA 2020 RSS - Proposed design

• Stratified random sample of hexagons with sample points in the hexagon centre
• Reduce error of change estimates
• Easy to scale up for national application
FRA 2020 RSS - Proposed design

- Collect Earth tool for data collection
- Assessment of current land use
  - Landsat
  - Sentinel 2
  - Very high resolution imagery where available
- Assessment of land use change
  - Landsat
1. Data collection

Ejemplo Landsat 2000 survey

Sentinel 2 mosaic 2017
Global Forest Resources Assessment 2020

GE DigitalGlobe 2015
Data collection

Ejemplo

Landsat 2000

Landsat Mosaic 2000

Changes for period 2000-2010
- Forest loss
- Forest gain
- Forest
- Non Forest

Changes for period 2010-2017
- Forest loss
- Forest gain
- Forest
- Non Forest

Are you sure of the interpretation?
- Yes
- No
Landsat Mosaic 2017
Ongoing - test of methodology

• What will be an appropriate sample size to reach desired accuracy?
• What classification error can we expect?
• How long time does it take?
• How can we improve the data collection?
Ongoing - test of methodology

- Four Pilot countries
  - Paraguay
  - Sweden
  - Viet Nam
  - Republic of Congo
Thank you!

www.fao.org/forest-resources-assessment

With financial support from: