Integrated Biodiversity Management, South Caucasus

საქართველოს გარემოსა
და ბუნებრივი რესურსების
დაცვის სამინისტრო

ეროვნული სატყეო
სააგენტო

გერმანიის
თანამშრომლობა
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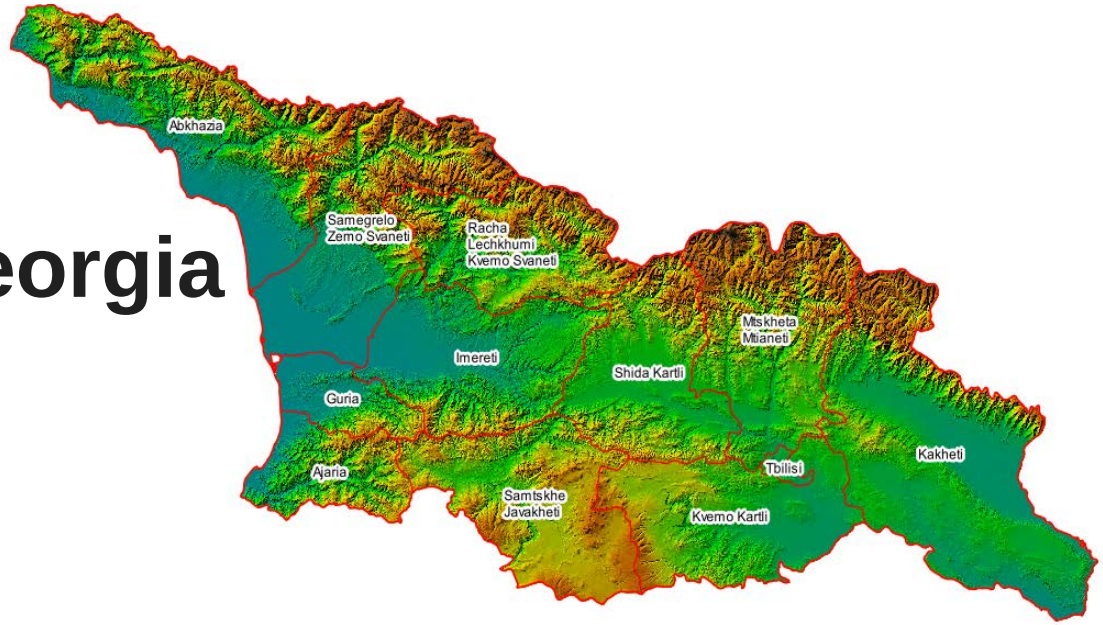
1st NFI of Georgia



Lasha Dzadzamia

Tbilisi

28.11.2017

Content

- IBiS Programme – the component of NFMS development
- National Forest Inventory – Goal, objectives, expectations
- WHY a National Forest Inventory ?
- National Forest Inventory: preparation phase
- Brief description of Variables

Development of National Forest Monitoring System

- **Implementation of first, country wide National Forest Inventory**
- **Implementation of improved Forest management Inventory and Management Planning**
- **Establishment of Forest Information and Monitoring System**

<u>Strong emphasis on Institutional and Human Capacity Development component</u>

Reason of implementation NFI

- Improvement of legislation, ensuring political and strategic decision-makers with reliable information;
- Reporting: on national, regional and global level;
- Monitoring on changes of country forest characteristics and evaluation of forest management;
- Development of research potential;

NFI does not aim on planning of forest management activities at regional and forest district level.

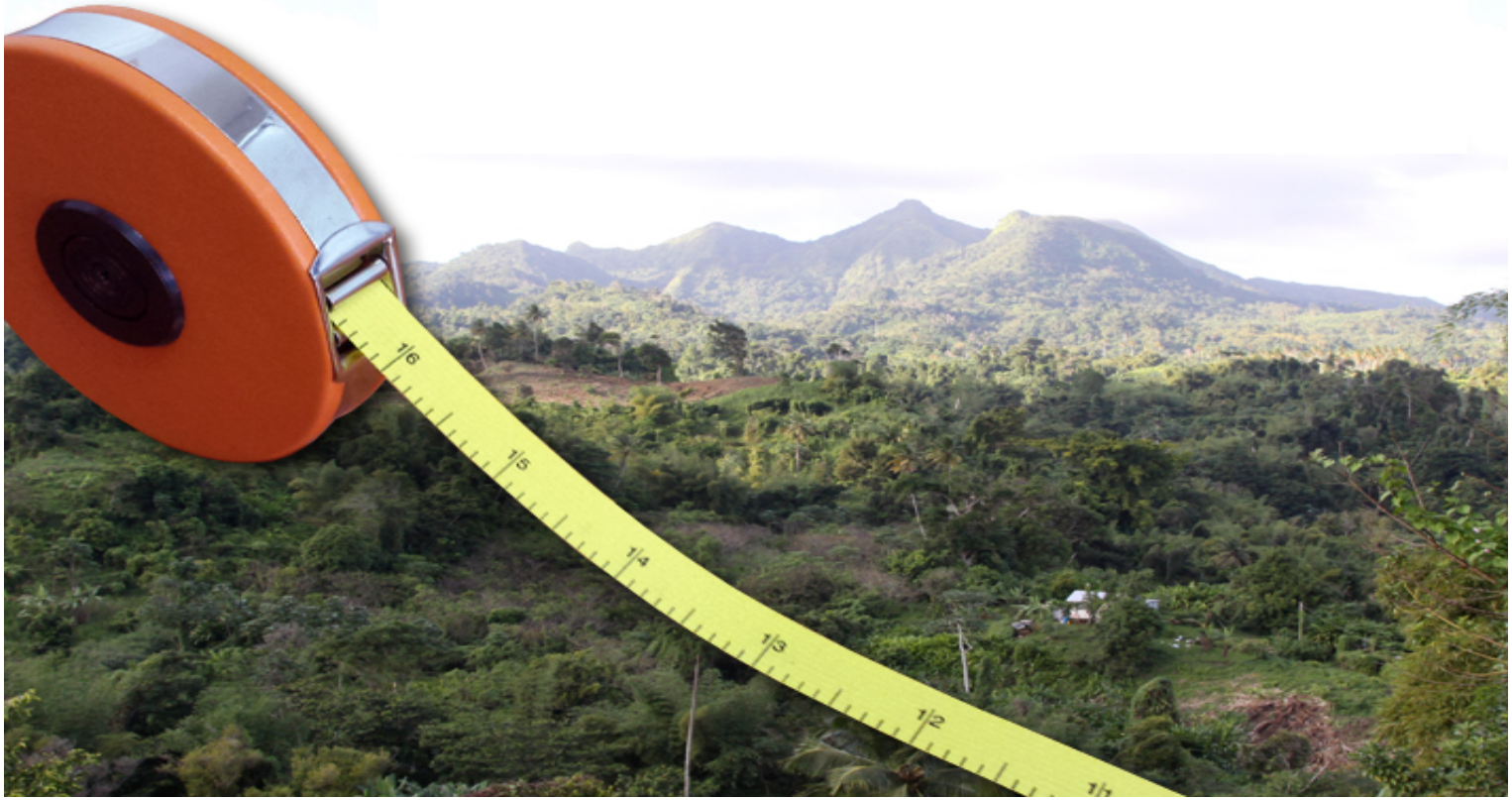
➢ The main guide of the Inventory Working Group: „*Voluntary Guidelines on National Forest Monitoring*"- FAO - Rome, 2017;

Main Regional and Global Requirements for Reporting

- Forest Europe;
- UN-FAO-FRA-Global Forest Resources Assessment (FRA)**;**
- UN Forum on Forest;
- UNFCCC (United Nations Framework Convention on Climate Change);
- CBD Convention on Biological Diversity;

WHY a National Forest Inventory ?

Why it is important?



WHY a National Forest Inventory ?

- **NFI for International reporting;**
- **Country needs;**
- **Long-term monitoring mechanism.**

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but, also

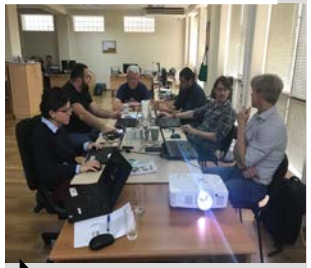
- **Multipurpose value of NFI**
  - **Biodiversity**
  - **Health**
  - **Protection**
  - **Production**
  - **Laws & policy**

WHY a National Forest Inventory ?

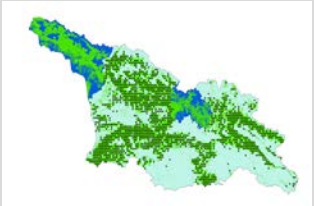
- Renewed information about the Georgian Forest condition;
- Accumulated experience;
- New technologies available for both RS and field data collection;
- Advanced and high precision forest inventory tools;
- Mobile technology;
- Development of research potential;
- Development of Forest Inventory Methodology and Legislation;

Phases of NFI

Information needs

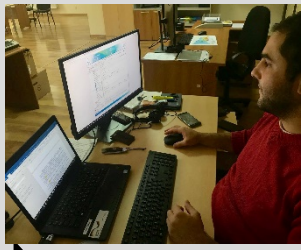


Methodology



Implementation

Data analyses



Open Foris collect

Open Foris mobile

Open Foris Collect earth

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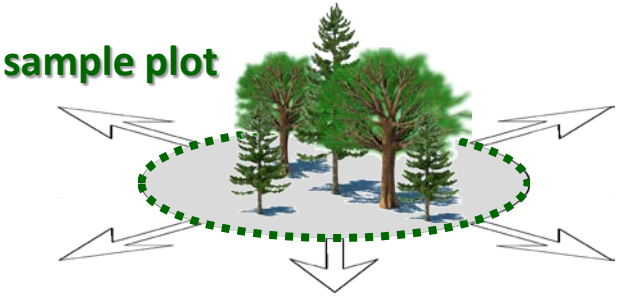
Variables



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More than 75 Variables

Forest land category
Forest type
Tree Origin
Tree species mixture
Vertical structure
Regeneration
Aspect
Position on slope
Crown closure
Trampling damage
Grazing
Red-list species
Ground vegetation type and coverage

Soil erosion
Humus
Tree species
Stump diameter
Tree height
DBH
Tree increment
Tree age
Standing dead tree
Habitat trees
Broken trees
Deadwood
NWFP
…

NFI tools

***Open Foris* - Free and Open Source Tools and Methods for Data Collection, Analysis and Reporting**

Collect | Collect Mobile | Collect Earth | Calc | Geospatial Toolkit

http://www.openforis.org

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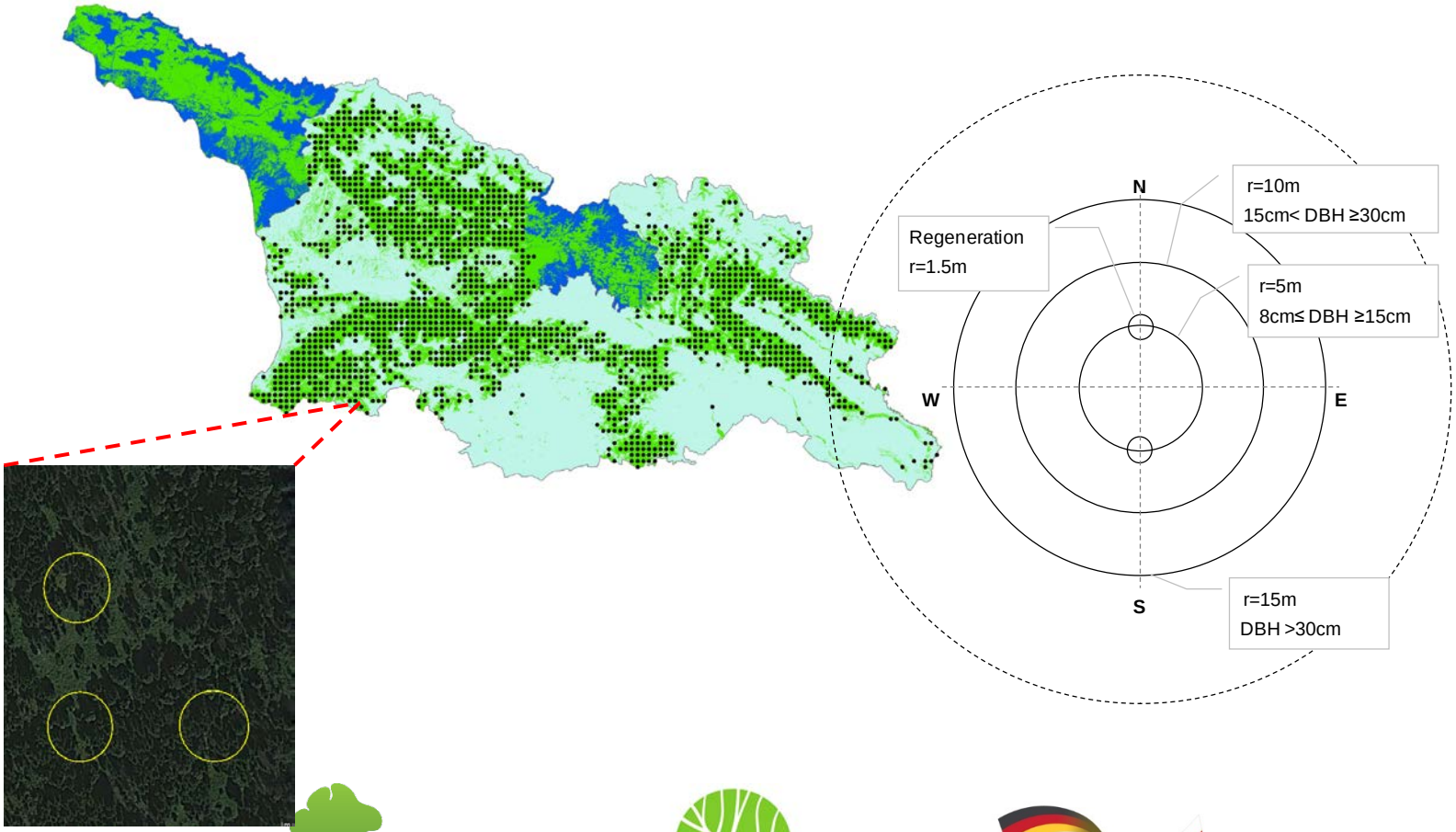
NFI Basic Expected Outputs for Georgia

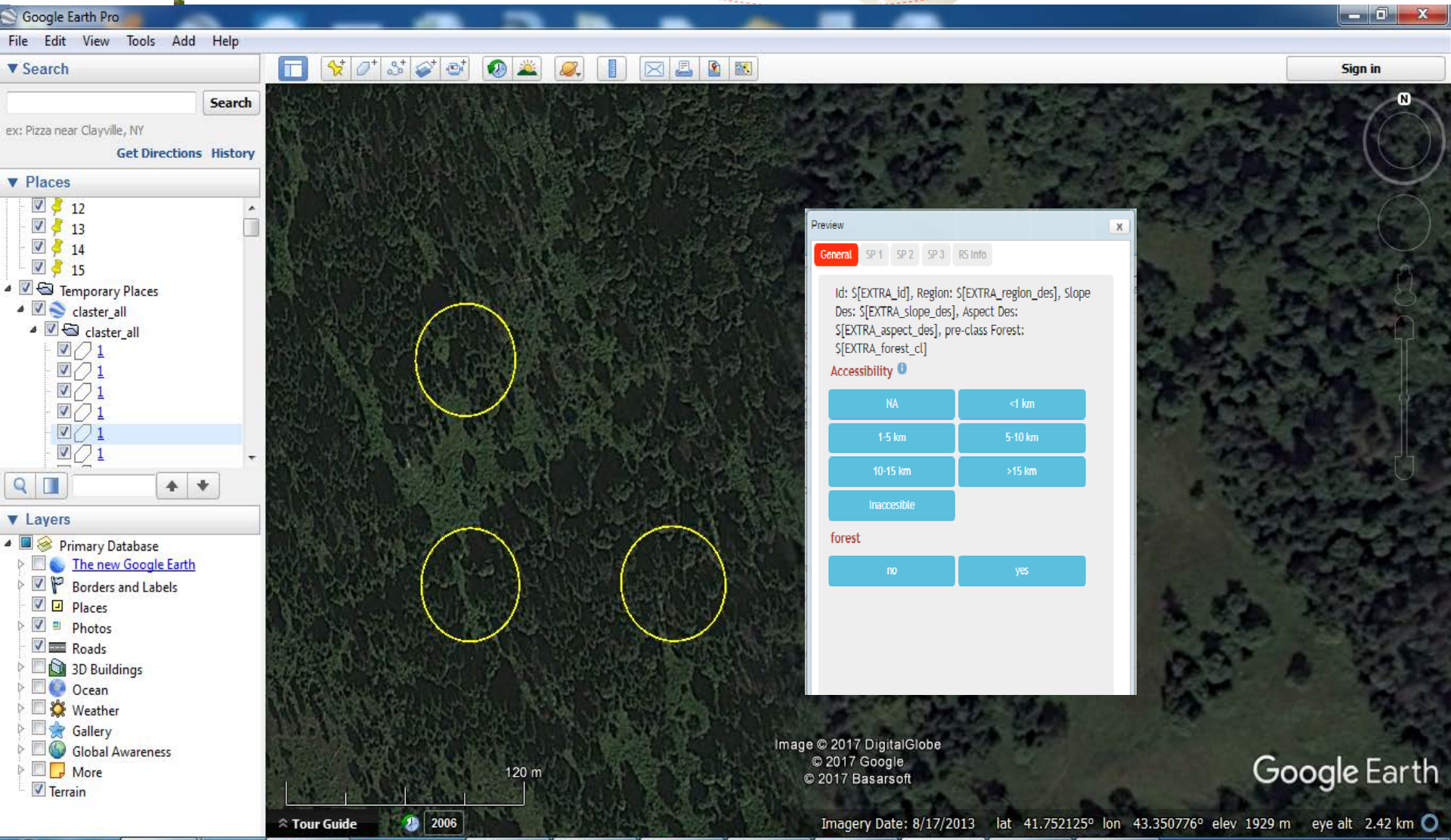
- Forest covered areas throughout Georgia (%; Ha.);
- Species composition;
- Age Classes; Origin;
- Bonitet;
- Stock – in total – according to the sea level and exposition;
- Increment;
- Forest Structure; Damages;
- Forest types; natural regeneration;
- non-timber;
- Carbon.

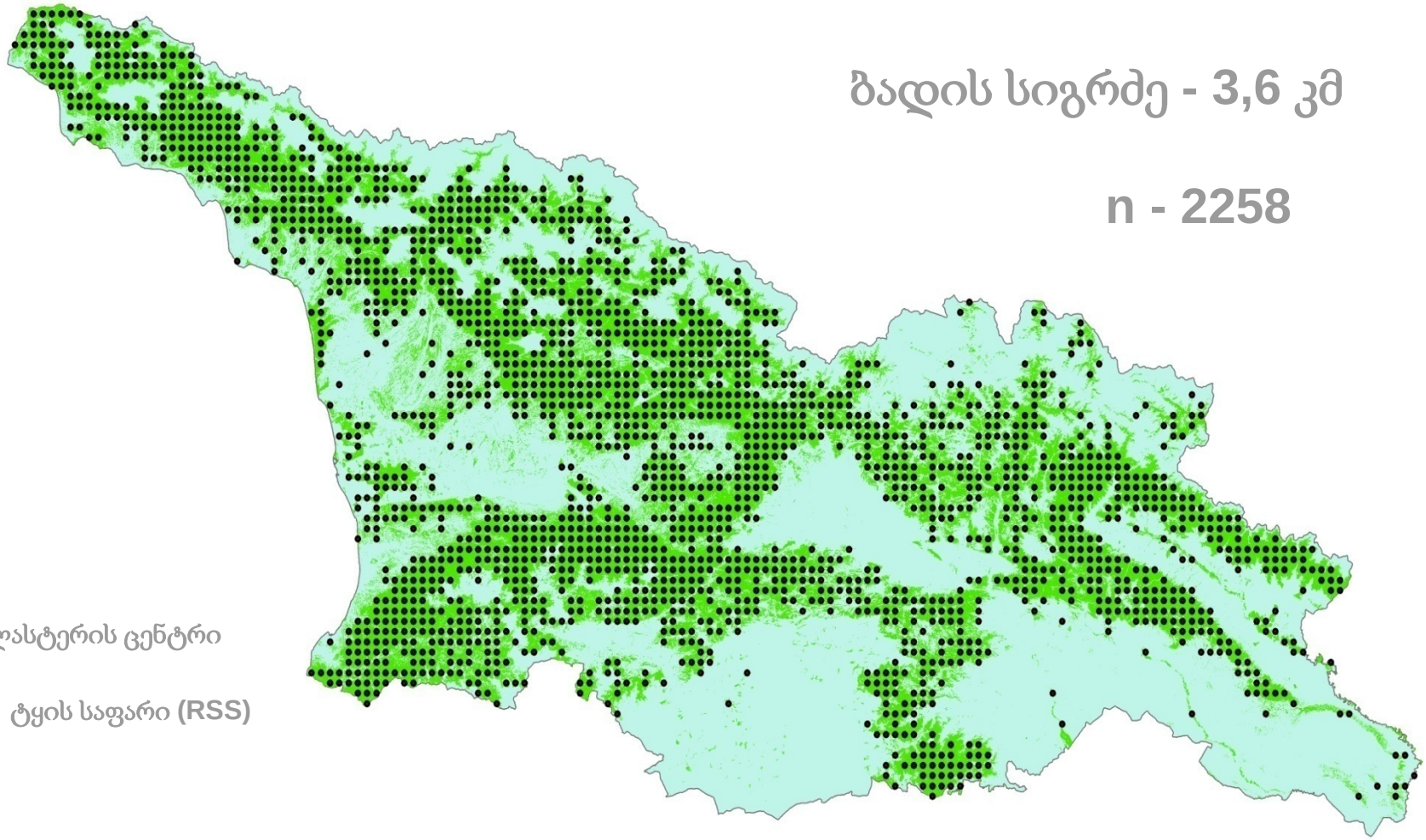
NFI Cluster and Plot Design



Thank You For Your Attention!

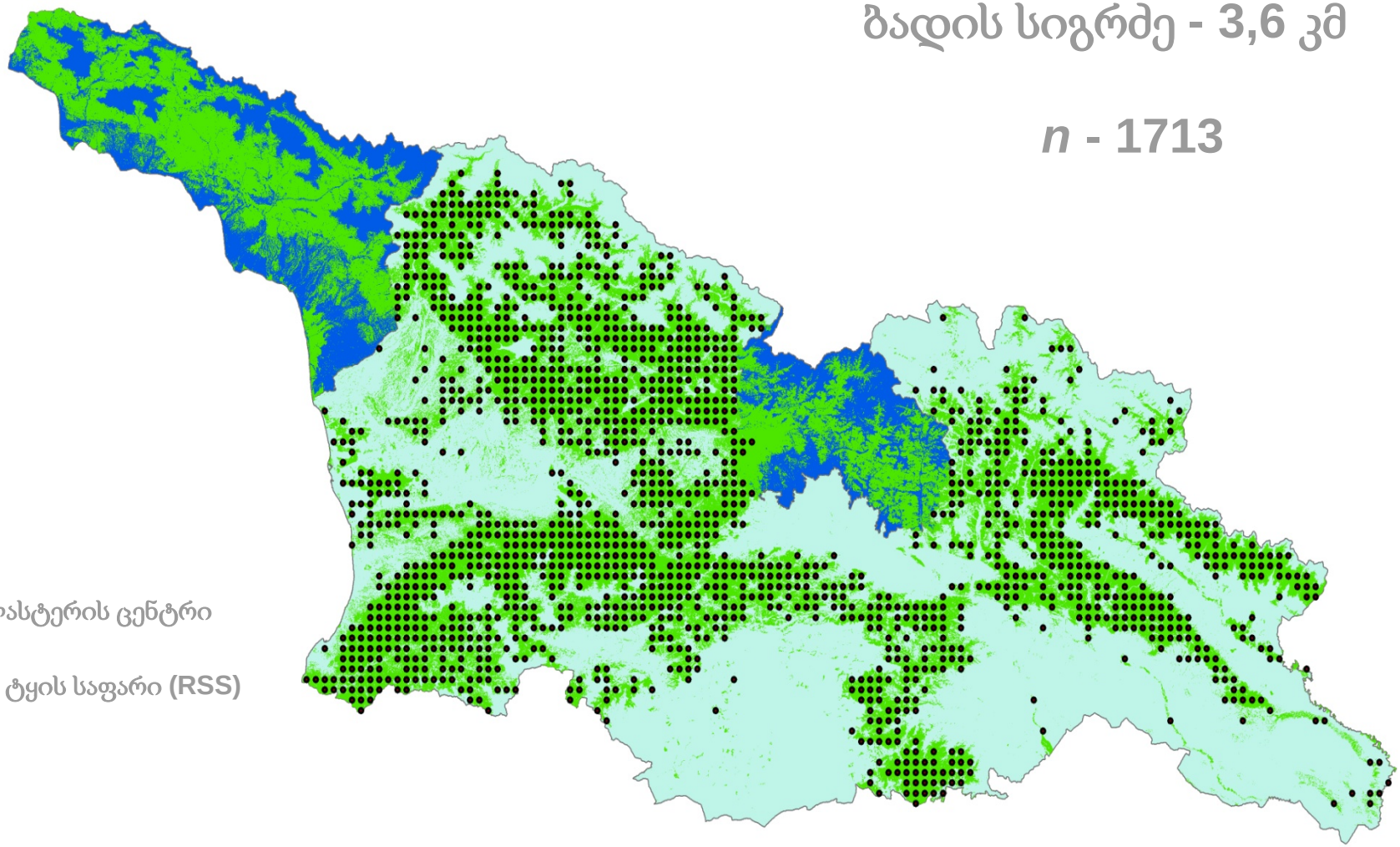
Openforis Collect Earth



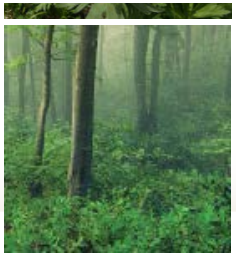

ბადის სიგრძე - 3,6 კმ
n - 2258
კლასტერის ცენტრი
ტყის საფარი (RSS)

ბადის სიგრძე - 3,6 კმ

n - 1713



- კლასტერის ცენტრი
- ტყის საფარი (RSS)

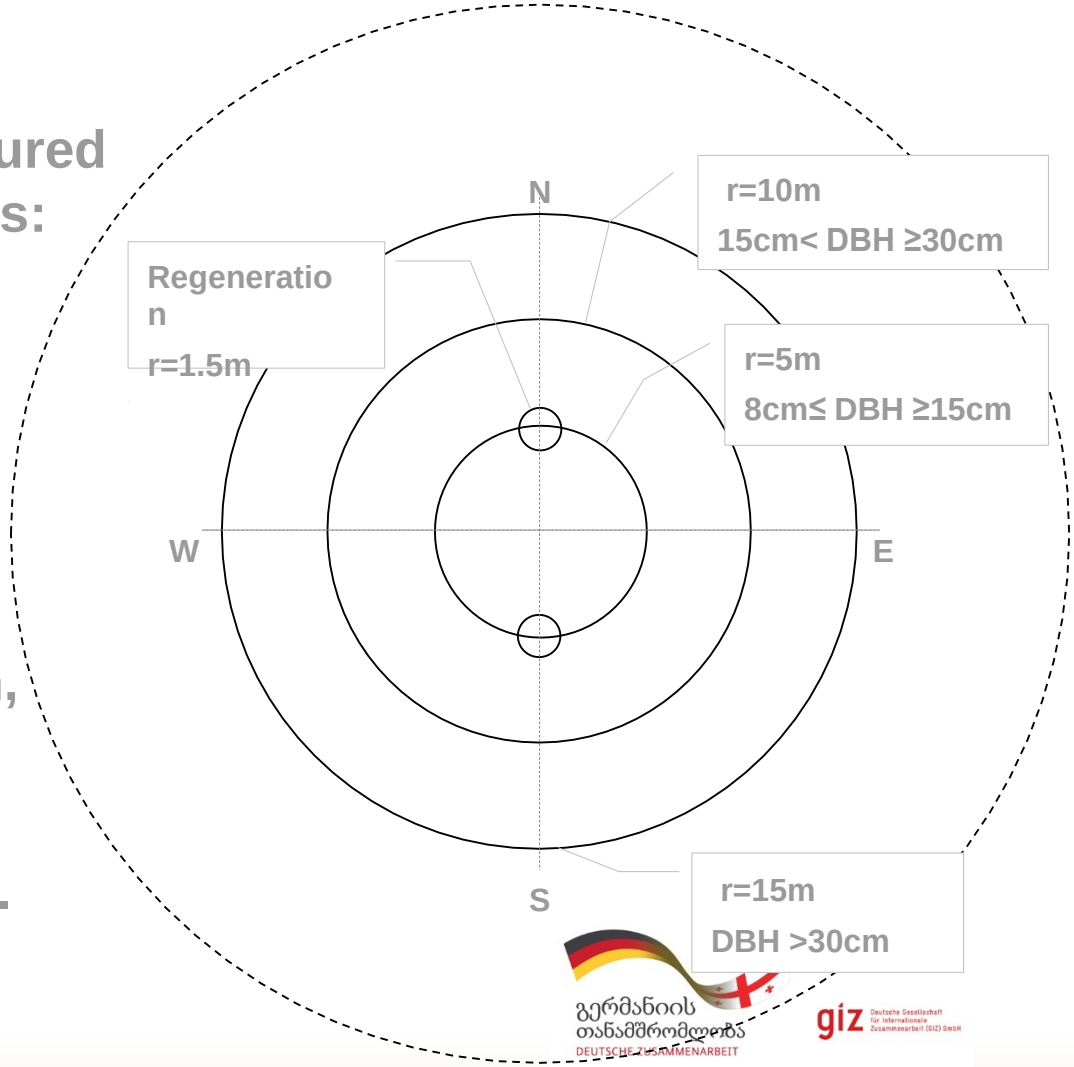


Trees of different diameters are measured in different distances:

Trees smaller 15cm are measured up to 5m,

Trees bigger than 15cm and smaller 30cm are measured up to 10m,

Trees bigger 30cm are measured up to 15m.



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2.1. Upscaling: NFI sub-plot design

For analyses, these different plot sizes must be taken into account by using different expansion factors when extrapolating the per-tree observations to the corresponding per-hectare observation”.

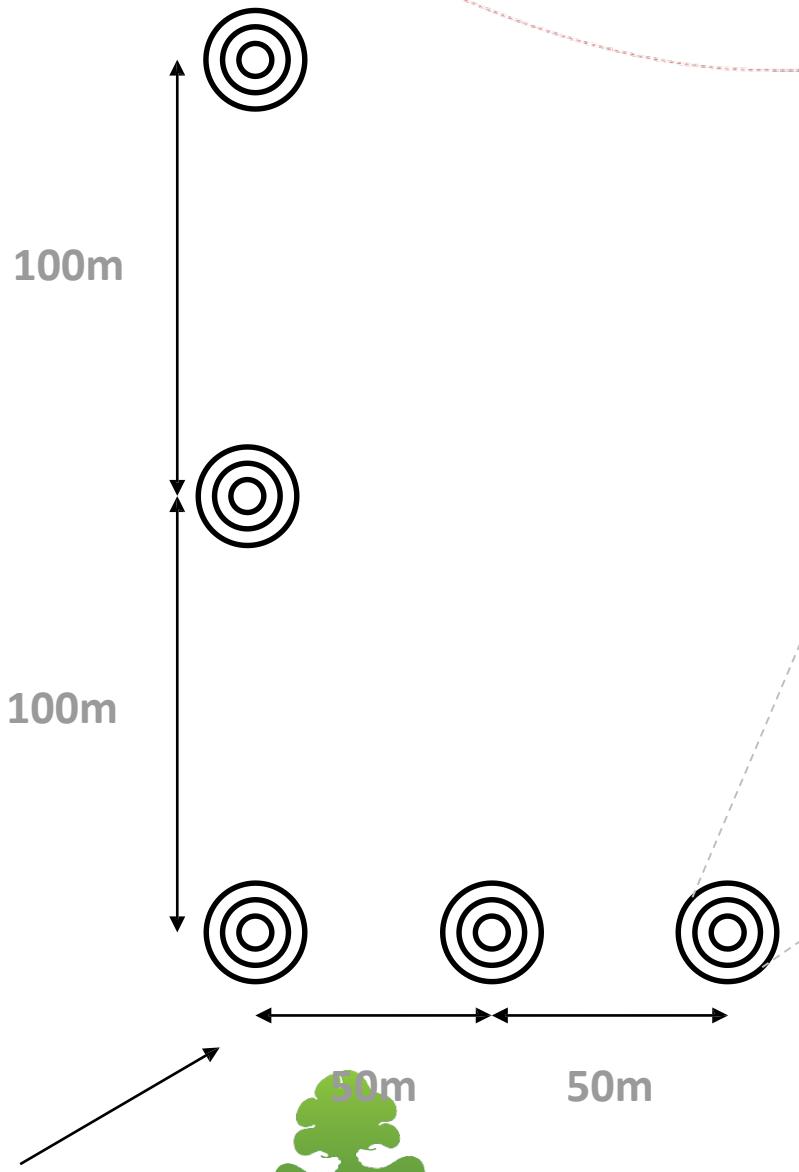
The expansion factors *EF* are calculated from *EF* = (10000m²/sub-plot area) and are as follows:

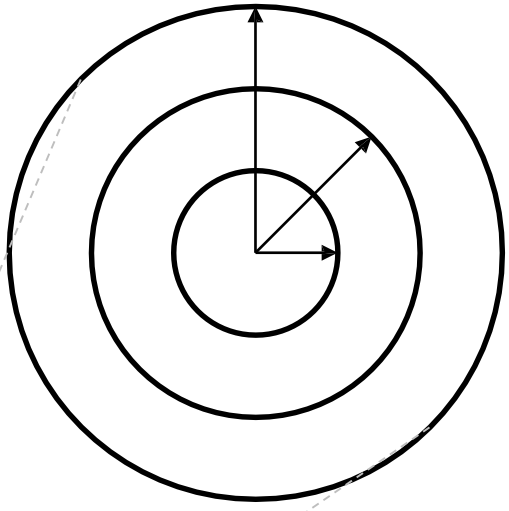
***R*=5m → EF_{5m} = 127.32 for trees ≤ 15cm**

***R*=10m → EF_{10m} = 31.38 for trees >15cm and ≤ 30cm**

***R*=15m → EF_{15m} = 14.15 for trees > 30cm**

Aggregation to the sub-plot level by summing up the expanded
single tree values per plot.





A cluster of 5 nested circular plots (same as FMI)