

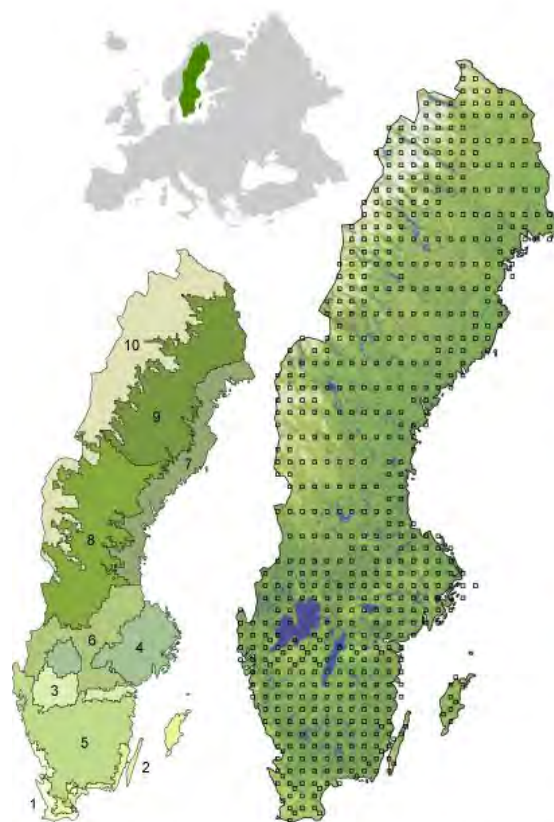


Workshop : Landscape management and design for food, bioenergy and the bioeconomy: methodology and governance aspects, Chalmers , March 15-16, 2016



The Swedish National Forest Inventory

-
 a case of systematic sampling for environmental monitoring



10 geographical strata 631 sample units

Sample unit
 25 km² square



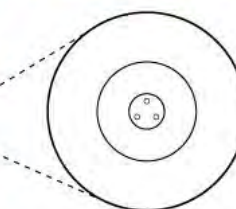
Aerial photo interpretation
 1 km² square

- Polygons
- Lines
- Points



Field inventory

- 1 km² square
- Circular sample plots
- Sample lines



Circular sample plots

- 20 m radius
- 10 m radius
- 3,5 m radius
- 0,28 m radius



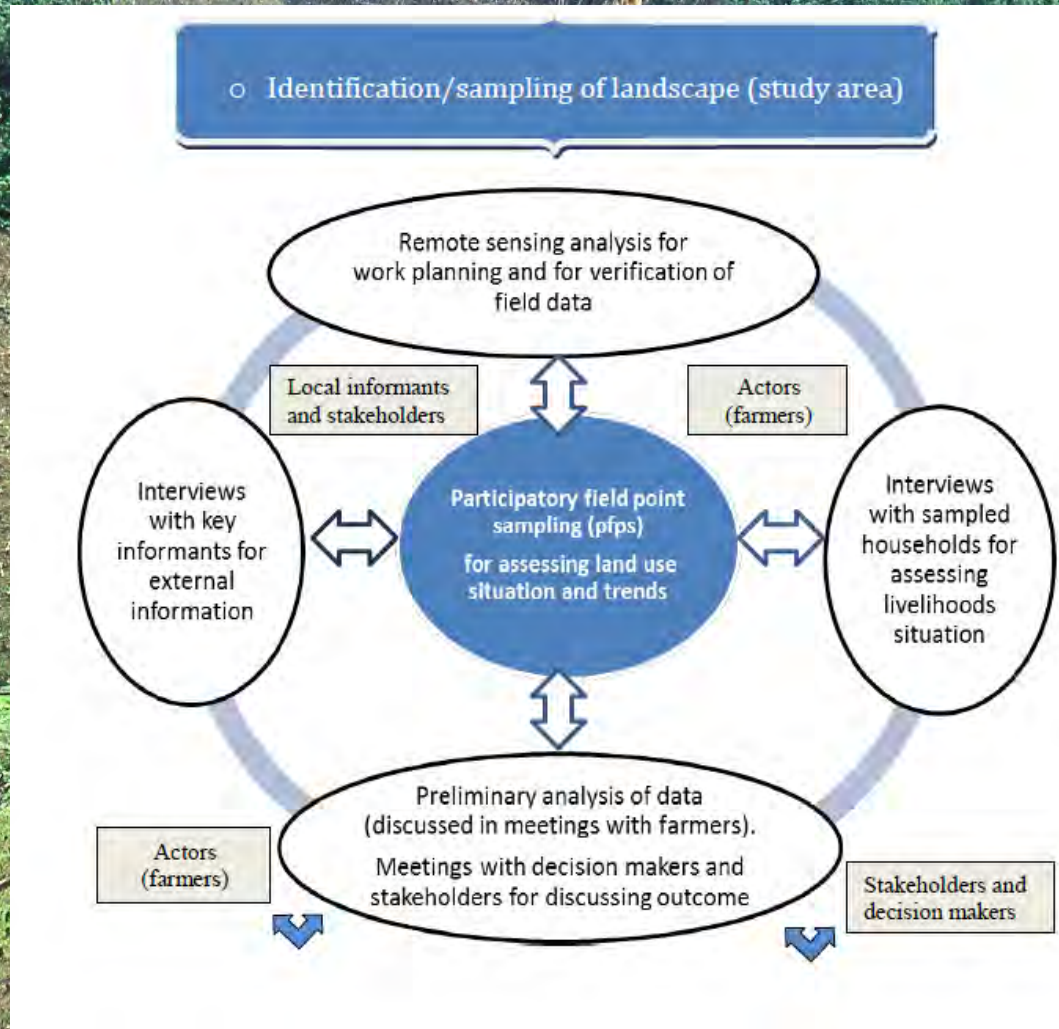
How to apply national inventories in the context of tropical/developing countries such as Laos ?



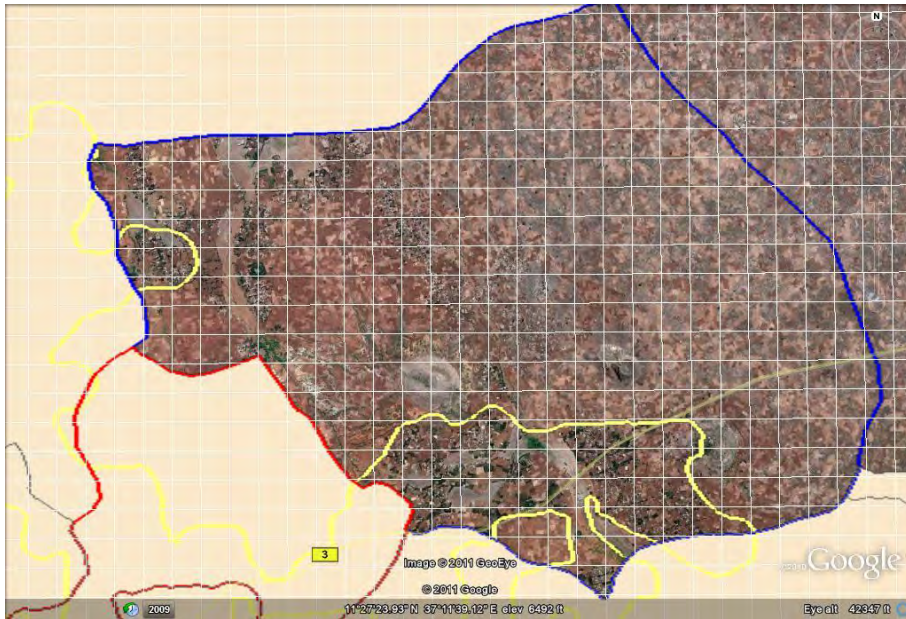
An assessment methodology which...

- objectively describes and quantifies land use changes over time
- considers farmers livelihoods and socio-economic changes
- explains change drivers, e.g. why do farmers do what they do?
- is comprehensible for farmers and officials (interactive/participatory)
- considers practical aspects of cost, rapidness and flexibility
- provides information useful for forest policy purposes

Components of the pfps approach



Pfps sampling, examples from Ethiopia and Vietnam



The Pfps sampling idea:

- To lay out/visit a systematic pattern of field points
- Observe/record the land use,
- Ask local owner on background and land use history on each point.
- Describe historical trends in land use
- Complementary data from interviews



Some core observations and their verification

Observations for each sample point:

- Current land use and forest cover (1)
- Land owner/user incl. economic status (2)
- Details on crops, production, market etc. (2,3)
- Past land use at regular intervals (2,3,4)
- Formal official land status (5)
- Expected future changes (2,3,)
- Other (depending on study purpose)



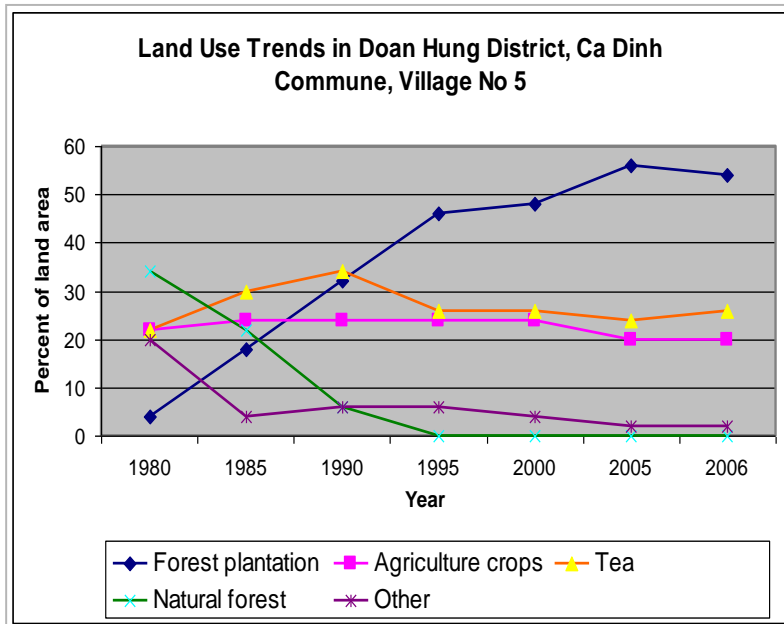
Verification

1. Direct observation in the field
2. Accompanying key informants
3. Other informants/villagers
4. Remote sensing (to some extent)
5. Officials and records



Key output

- The pfps "rapidly" (in one go) traces/presents local historical land-use trends over a fairly long period in a statistically acceptable form.
- It will then be presented, discussed and anchored first at local level and then at policy level.



Accuracy of the pfps data

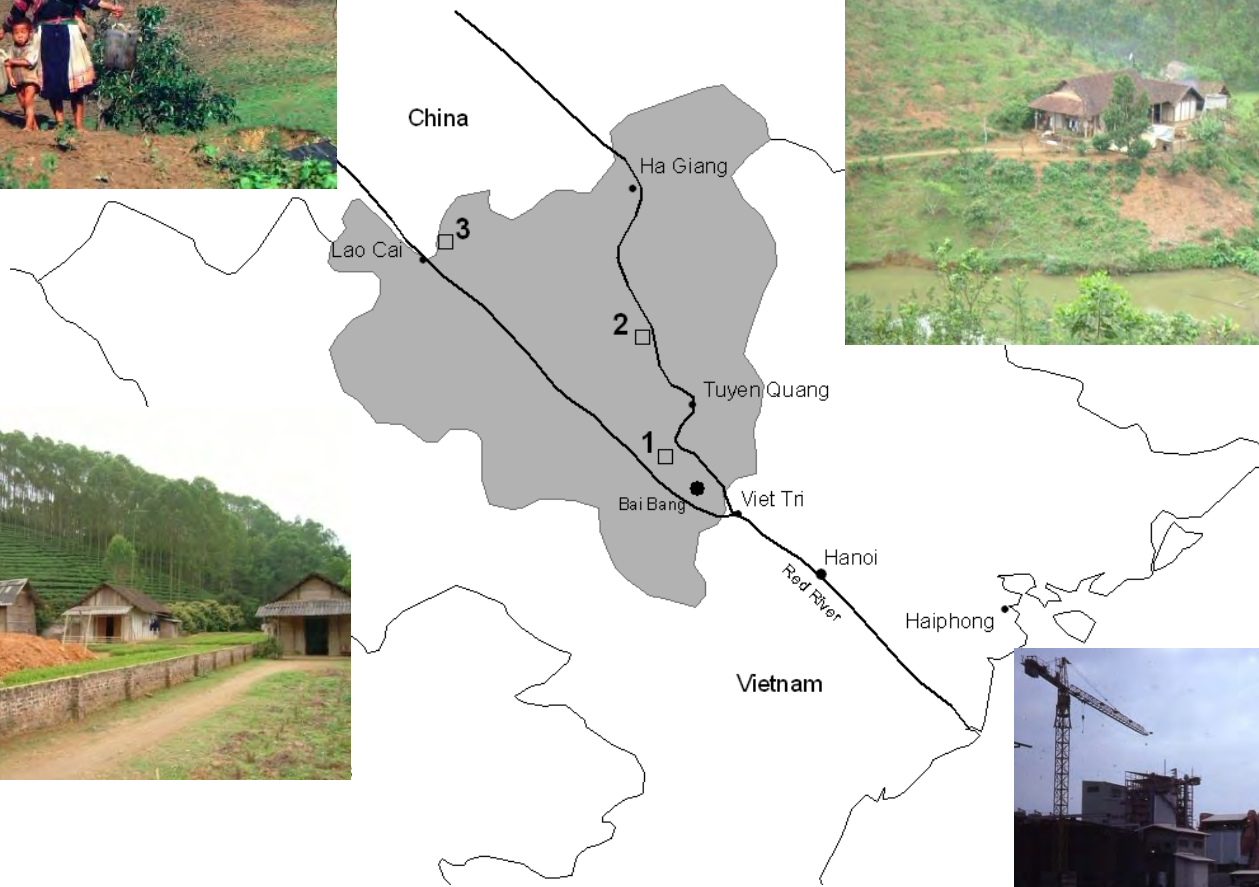
It builds on information that can be **verified** to a certain extent but not entirely.

Through the sampling approach the quantitative land use data (area data) of the **pfps is basically unbiased** and it is possible to (conservatively) estimate its **precision**.

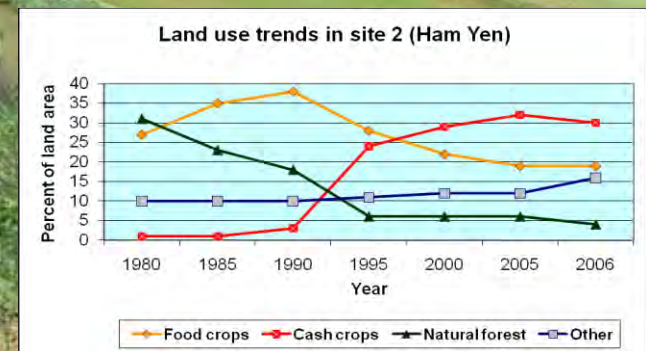
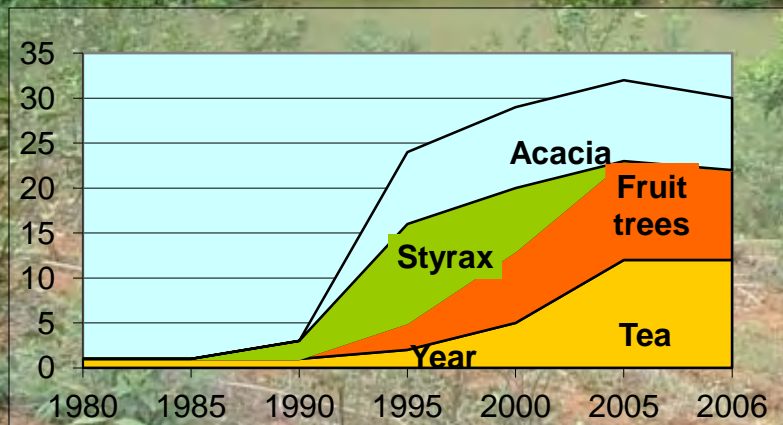
The **qualitative information** relies on the proper use of social science methods and requires persons trained with that background.

One of its advantages is that it **captures both quantitative and qualitative changes and assesses how those changes are perceived** by the local actors and stakeholders

"Why do farmers plant trees" , Northern Vietnam (2006-08)



Ham Yen 100 km from the industry



Some applications of the approach 1997-2012

Country	Purpose of study
Laos	Dynamics in shifting cultivation
Vietnam	Trends, drivers and local impacts of farmers tree plantation State vs local level planning/strategies Land use change and forest policy
China	Local level trends and patterns in forest cover change
Ethiopia	Land use and forest cover change /poverty Wood lot plantation, climate change and forest policy

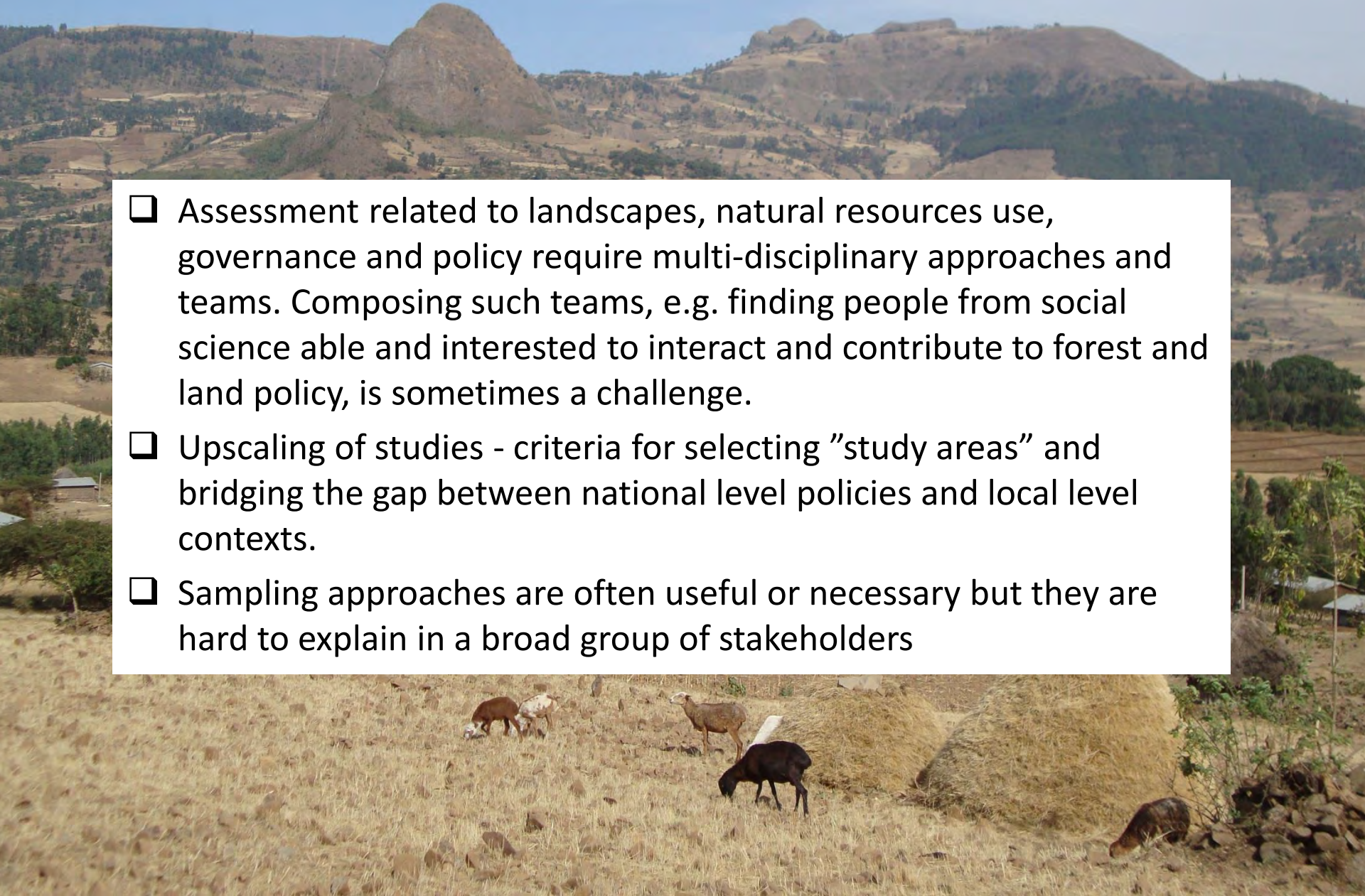


In what situations could the approach be applicable ?

- Situations and “pilot studies” in which you enter a new study area where you have limited knowledge/data on the past and current land use situation and need to produce that in a fairly short time.
- Land use and environmental policy contexts when the historical development trends, its driving forces and ‘stakeholder perspectives are of concern.
- Food, bioenergy, climate change adaptation.....

Some methodological challenges

- ❑ Assessment related to landscapes, natural resources use, governance and policy require multi-disciplinary approaches and teams. Composing such teams, e.g. finding people from social science able and interested to interact and contribute to forest and land policy, is sometimes a challenge.
- ❑ Upscaling of studies - criteria for selecting "study areas" and bridging the gap between national level policies and local level contexts.
- ❑ Sampling approaches are often useful or necessary but they are hard to explain in a broad group of stakeholders



Thank you!



Reference article:

Sandewall, M. and Gebrehiwot, M. 2015. An Approach for Assessing Changes of Forest Land Use, their Drivers, and their Impact to Society and Environment. In: Precious Forests – Precious Earth. <http://dx.doi.org/10.5772/61074>