Directorate General for Audit of European Funds

Sampling methods in Hungary

European Territorial Cooperation Programmes

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Presentation outline

- Introduction: sampling basics
- Statistical sampling and MUS
- MUS pros and cons
- Sampling for ETC programmes
- Conclusion: sampling anomalies and Hungarian experience
- Outsourcing audit work

Introduction

- New Hungary Development Plan

  15 operational programmes 2007-2013 (including ESF, ERDF, CF)
- CF projects (ex-ISPA)

  transport and environmental sector

No external auditors are involved

- 3 ETC programmes
- 2 IPA programmes

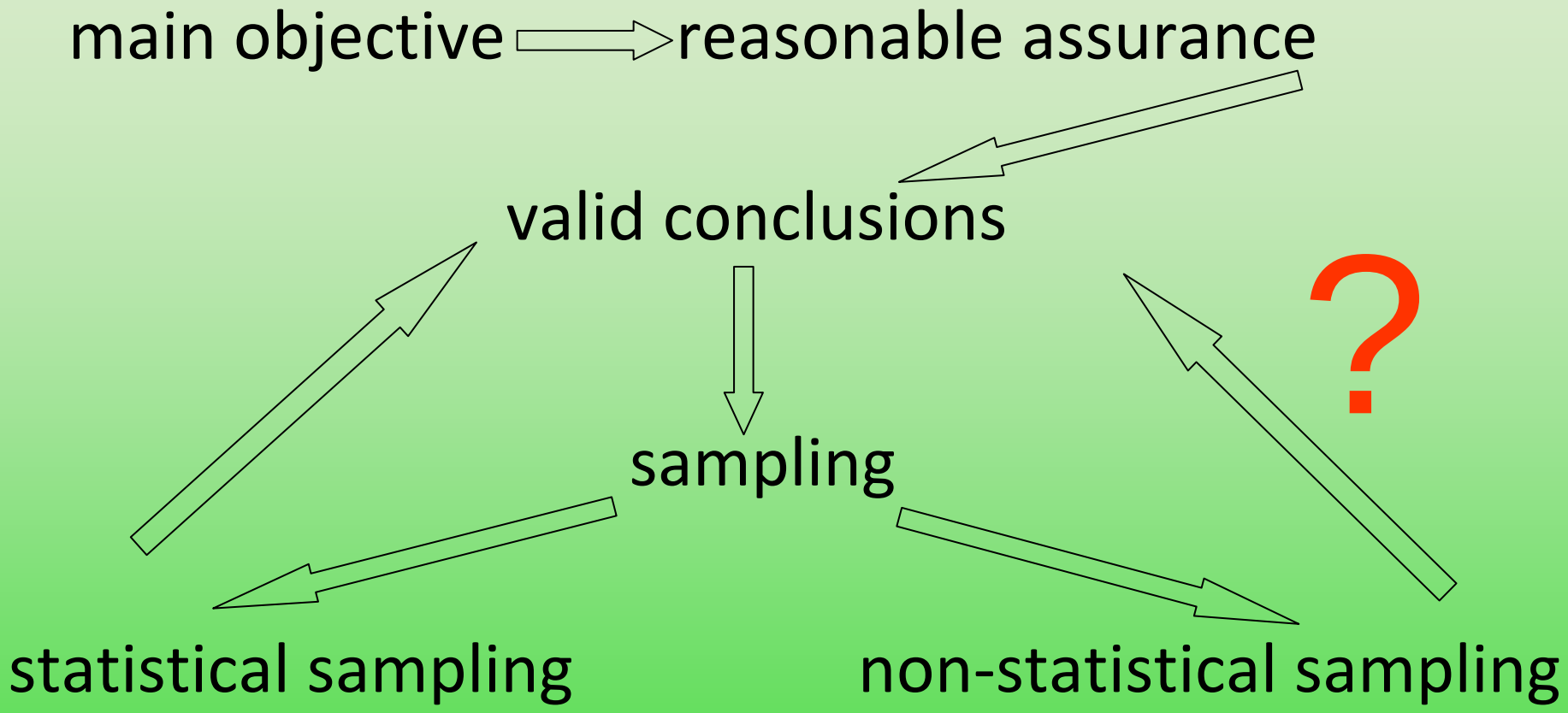
Partly outsourced

Sampling basics I.

- Article 62 of Reg. (EC) 1083/2006
- Articles 16 to 17 of Regulation (EC) No 1828/2006
- Guidance Note on sampling (COCOF 08/0021/02)

→ the use of statistical sampling methods is suggested unless under special circumstances

Sampling basics II.



Guidance note point 6.1.4., Sampling unit:

”In certain cases in order to counter the problem of a population being too small for statistical sampling, the unit to be selected for audit may be a payment claim by beneficiary. In no case may the unit of audit be limited to an individual invoice.”

Statistical sampling

- most widely applied sampling method also suggested by EC Regulations
- experience: Monetary Unit Sampling/MUS most widely applied
  - main advantage: small sample size and relatively large proportion of expenditure audited
  - relationship among the four reliability levels determined in audit methodology
  - assurance level (system audit) → confidence level (+materiality level of 2% +expected error based on audit experience) → sample size

MUS pros and cons I.

Population of at least **800** items suggested

Item containing each n^{th} monetary unit gets into sample → larger items are more probable to be selected

Complex projects?

Higher risk?

Higher probability of errors?

Sampling unit

- project
- payment claim
- invoice (?)

Sample size depends on:

- confidence level
- materiality level
- expected error
- **not** on the size of the population (above min size)

MUS pros and cons II.

Expected error = materiality level * 10%

System assessment	Assurance level	Materiality level	Number of audited items
Category I.	60%	2%	52
Category II.	70%		69
Category III.	80%		93
Category IV.	90%		136

Expected error = materiality level * 20%

System assessment	Assurance level	Materiality level	Number of audited items
Category I.	60%	2%	59
Category II.	70%		80
Category III.	80%		111
Category IV.	90%		168

MUS pros and cons III.

☺		☹
• Small sample size	⟺	• Expected ('permissible') error rate way significantly below materiality level
• Extrapolatability	⟺	• Overstates errors
• Covers significant proportion of declared expenditure	⟺	• Complementary sample
• Works well for large population	⟺	• Restricted applicability for small population

Sampling for ETC programmes

Number of specific features:

- various system structure
- small number of projects
- LP/PP system
- representativity
- number of countries involved

→ difficulties encountered when trying to apply sampling methods working well for Structural Funds programmes

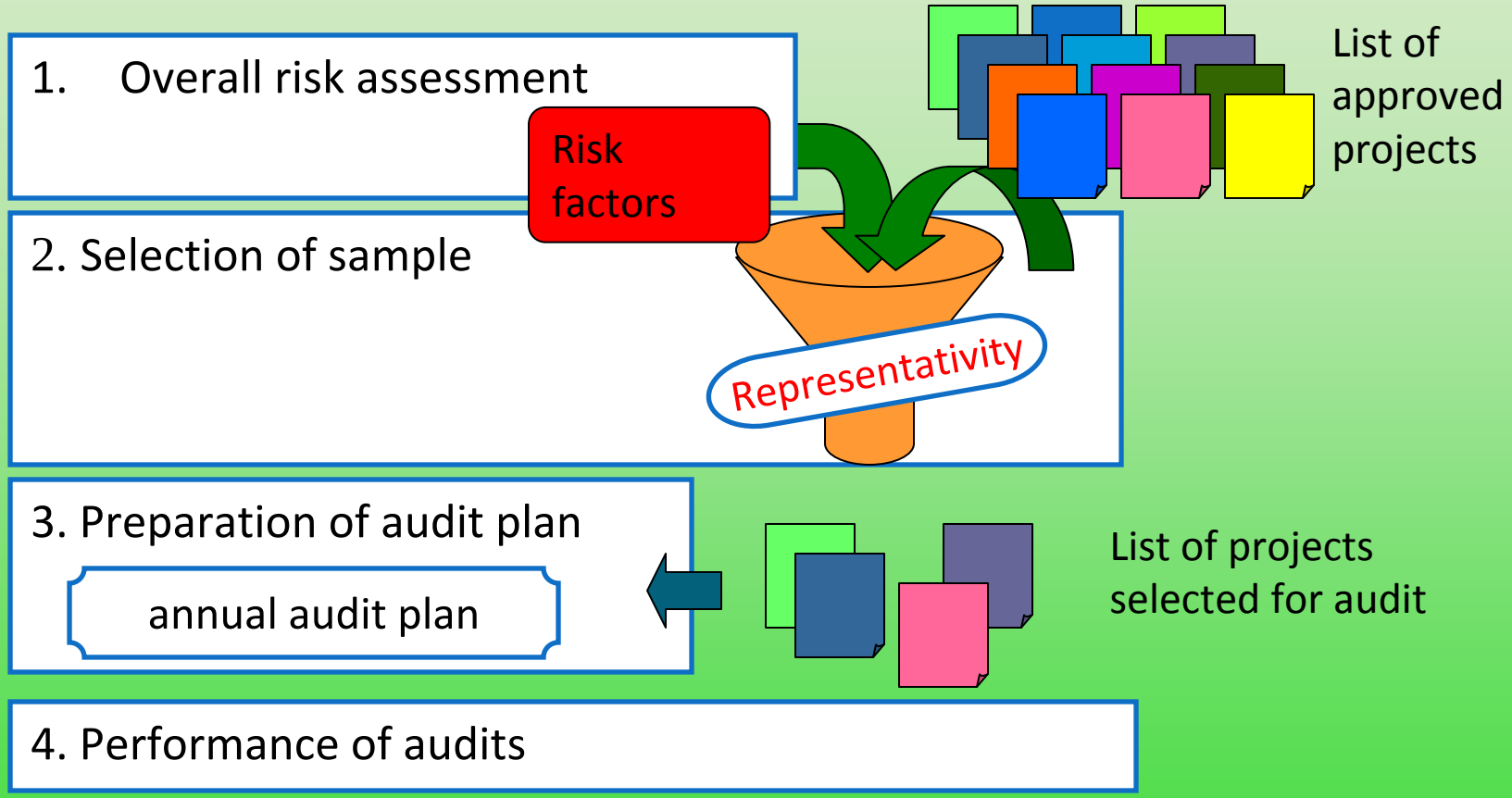
Alternatives for sampling for ETC programmes

1. Random sample
    1. larger sample sizes → more capacity and more audit work
    2. evaluation and extrapolation
2. Other statistical
    1. special statistical knowledge is a must
    2. evaluation and extrapolation
3. Non-statistical

What works for ETC programmes?

- Small number of operations → going down to the level of payment claims or even invoices?
- Auditing on level of payment claims or invoices → what is the scope of the audit?
  - public procurement
  - project implementation
  - evaluation and monitoring
- Does that solve the LP/PP problem as Guidance Note suggests?
- Semi statistical or non-statistical sampling

Non-statistical: risk based selection



Normally no complementary sample necessary

Comparison

2 options for the choice of methods

Statistical sampling

- extrapolatability
- not representative
- complementary sample
- determined minimum sample size
- valid conclusions on the effective functioning of the system?
- large proportion of expenditure audited
- more audit work

Non-statistical sampling

- not extrapolatable
- may be representative
- sample size determined internally
- valid conclusions on the effective functioning of the system?
- smaller proportion of expenditure audited
- less audit work

Hungarian experience

- The selection of method is crucial for the allocation of capacities within AAs (e.g. Transport OP)
- Applying MUS a large number of operations suggested – sampling unit: projects, payment claims
- Problems met at extrapolation phase
- Audit sum is up to 80 % of total costs declared
- No extrapolation?

Sampling anomalies I.

- As statistical method, MUS results shall be extrapolatable to the whole population
- Still does not work perfectly for the audit of European Funds
  - Higher value projects more probably audited
  - Audit experience: higher value projects imply a higher error rate

Overstated error rate proportional to population

Sampling anomalies II.

- MUS was developed as a private sector auditing method
  - for private sector auditing low variability and large number of items are characteristic
  - EU co-financed projects
    - e.g. if one invoice not eligible → 100% error
    - relatively few errors

Extrapolation to the whole population may imply overstatements.

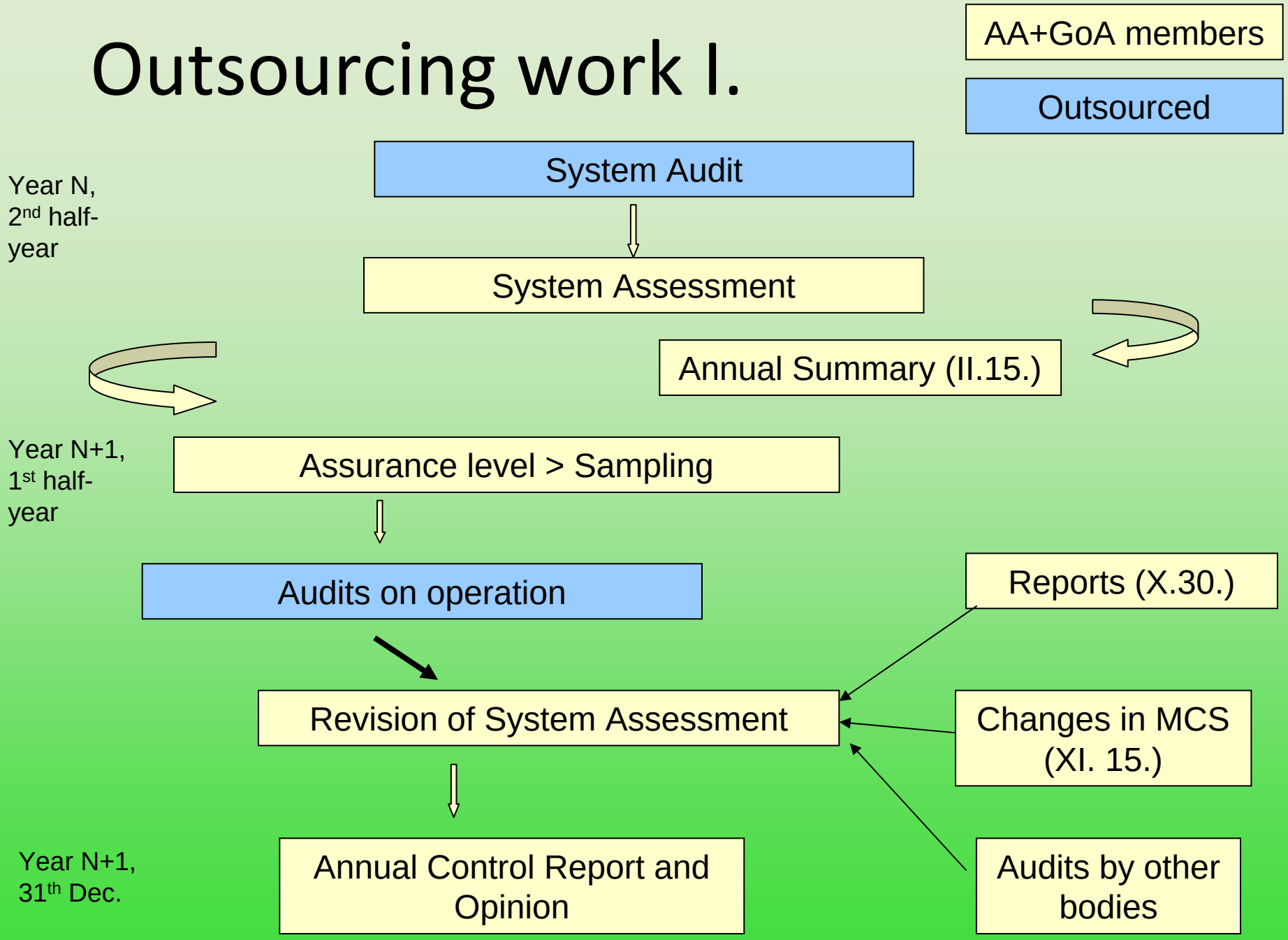
Sampling anomalies III.

- In case of inadequate initial rate of expected errors, a low number of items selected (no further experiences)

- Example:
  - expected error: 0,2%
  - error found over: 0,2 %

The extrapolated error rate is over the materiality level (2 %)

Outsourcing work I.



Outsourcing work II.

- methodological requirements determined by AA in cooperation with GoA members
- with the assent of AA, the external auditor might derogate from them
- the audit manual is revised yearly in cooperation with the external auditor
- the AA relies on the audit work of external auditor partially

Thank you for your attention!