LIFE+ FutMon Project [Contract n° LIFE07 ENV/D/000218]

Action C1-QAC-15(IT)

Description, organization and expectations

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TerraData environmetrics

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The action provides a central coordination of quality assurance and control measures included in a number of more specific expert actions. The action includes the development of quality indicators to be submitted together with monitoring data sets.

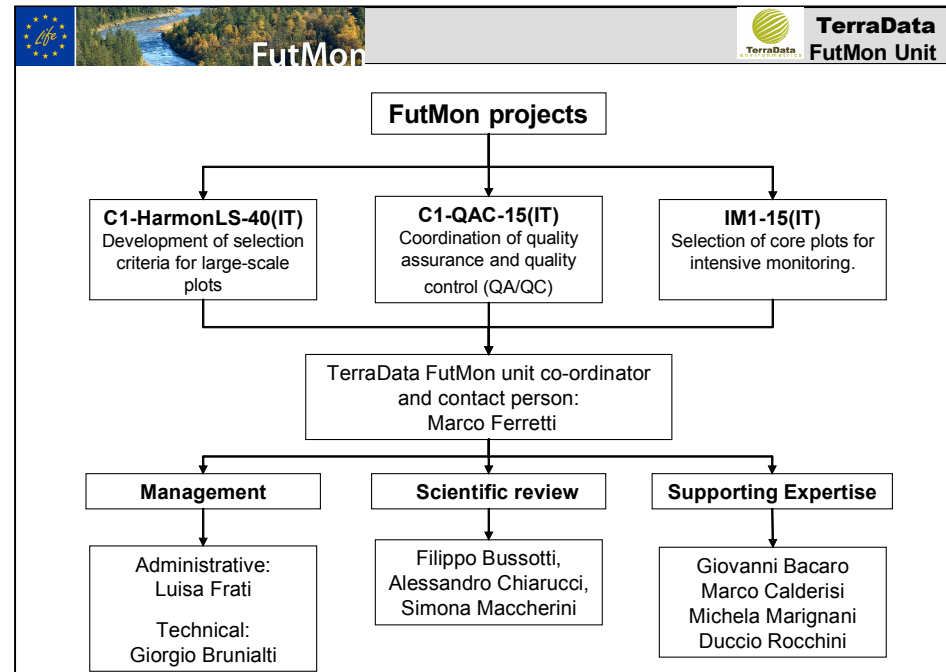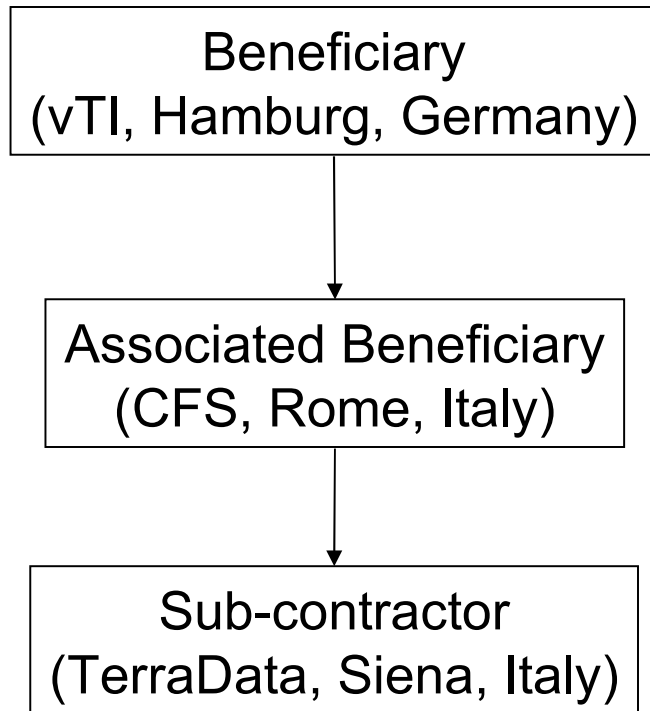| FutMon Action	Subject
C1-QA-LAB-30(NWD)	QA/QC in Labs
C1-Water-40(IT)	QA/QC in Labs
C1-GV-15(IT)	QA/QC in vegetation assessment
C1-TREE-30(NWD)	QA/QC in tree condition assessment
C1-Phen-10(FI)	QA/QC in phenology
C1Dam-3(BE)	QA/QC in tree damage assessment
C1Soil-3(BE)	QA/QC in soil (solid)
C1-SS-10(FI)	QA/QC in soil solution
C1-Fol1-10(FI)	QA/QC in leaves/needles
C1-Fol2-10(FI)	QA/QC in leaves/needles
C1-Gro-2(AT)	QA/QC in tree growth
C1-Dep-22(SL)	QA/QC in deposition sampling
C1-O3-24(ES)	QA/QC in air quality
C1-MET-29(BY)	QA/QC in meteorology

Description

- Coordination of quality assurance and quality control (QA/QC)

- Ensure that all proper means are adopted to promote, control and report the quality of the data gathered by the project.

- It includes:

    (i) continuous harmonization of methods

    (ii) setting data quality requirements;

    (iii) monitoring, summarizing and reporting data quality status in the various actions of the project.

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Expected results

- Information on the current quality status of monitoring methods

- Related proposals for improvement

- Appraisal of results obtained in terms of quality assurance and control within the new European monitoring system,

- Information on the impact of data quality on the results obtained by the project.

Organization

Beneficiary
(vTI, Hamburg, Germany)

↓

Associated Beneficiary
(CFS, Rome, Italy)

↓

Sub-contractor
(TerraData, Siena, Italy)

FutMon **TerraData FutMon Unit**

FutMon projects

C1-HarmonLS-40(IT)
Development of selection criteria for large-scale plots

C1-QAC-15(IT)
Coordination of quality assurance and quality control (QA/QC)

IM1-15(IT)
Selection of core plots for intensive monitoring.

TerraData FutMon unit co-ordinator and contact person:
Marco Ferretti

Management

Scientific review

Supporting Expertise

Administrative:
Luisa Frati

Technical:
Giorgio Brunialti

Filippo Bussotti,
Alessandro Chiarucci,
Simona Maccherini

Giovanni Bacaro
Marco Calderisi
Michela Marignani
Duccio Rocchini

http://www.terradata.it/download/TerraData_nel_progetto_Life.pdf

What do we need?

A "set of instruments and actions designed to ensure methods are unanbiguous, clearly presented, accepted and applied consistently across Europe".

The "QA-toolkit"

1. **Manual**: documented, agreed and clear methods, formally accepted by programme's participants.
2. **Indicators of data quality**: a series of explicit, unambiguous indicators of data quality in order to avoid subjective statements on the level of quality of our data and in order to document the progress/manteinance of data quality.
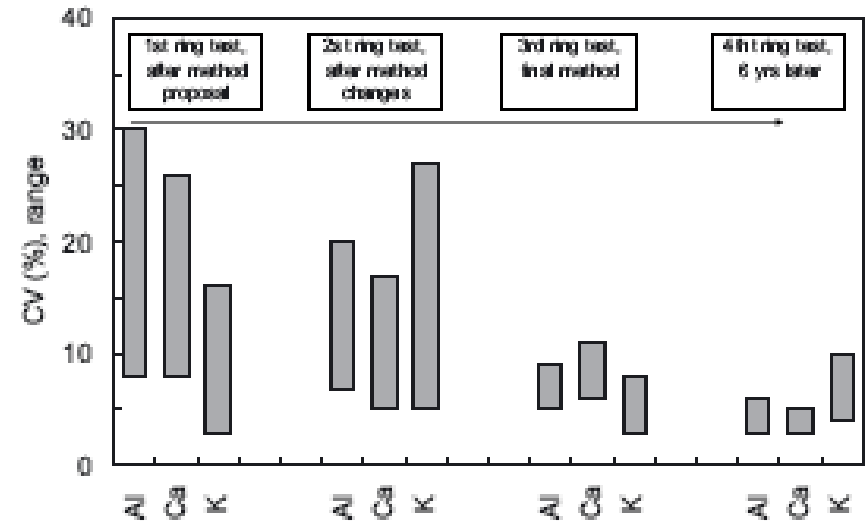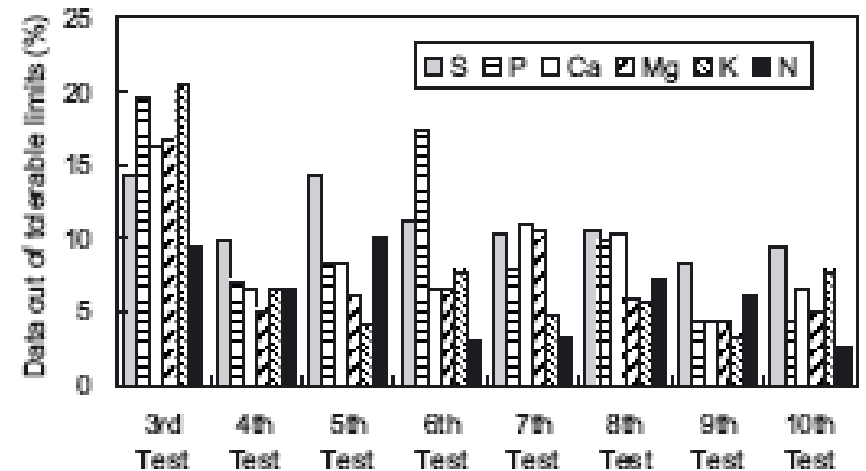3. **Training sessions**
4. **Intercomparison rounds**

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Associated Beneficiary:
Ministero delle Politiche Agricole Alimentari e Forestali
Corpo Forestale dello Stato, Italy

QA Tool	Areas of improvement
Manual (as a whole)	Network design and the QA plan should be described in separate chapters and not embedded in the introduction.
Field protocols	See suggestions >>>>>>>>>>>>>>>>>>>>>>>>>>>>>
Indicators of data quality	Measurement Quality Objectives (MQOs) Data Quality Limits (DQLs), Plausibility Limits (PLs), Data Completeness Limits (DCLs)
Training sessions	To be specifically designed/developed for each investigation.
Intercomparison rounds	Intercomparison exercises for field sampling Intercomparison exercises for field assessment Consolidate the ring-tests for labs

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1. Introduction, where the nature of the investigation is put in context of the whole monitoring programme.

2. Scope and application of the described methods , with a table for quick reference

3. Objective for the investigation of concern, in an operational format (include statistical details about minimum detectable change, time frame, P-level, …)

4. Location of measurements and s ampling
    4.1 Sampling design at plot level , where the al location of observation within the plot is described
    4.2 Sampling equipments, when applicable. However, detailed descriptions must be left in an Annex.
    4.3 Sample collection, when applicable. However, detailed descriptions must be left in an Annex.
    4.4 Sample storage and transport , when applicable. However, detailed descriptions must be left in an Annex.

5. Measurements (it includes assessment, analysis etc)
    5.1 Measurements to be done and reporting units. Give details of methods in Annex.
    5.2 Data Qualit y Requirements – Plausibility limits, Data Comleteness, Measurement Quality Objectives, Data Quality Limis. Give details in Annex.

6. Data handling
    6.1 Storage, where data storage forms, files etc are described. Give details in Annex.
    6.2 Plausibility lim its, data completeness
    6.3 Trasmission to co -ordinating centres , with timeable and rules
    6.4 Data p rocessing guidelines
    6.5 Reporting guidelines

7. References

8. Annexes

Data quality indicators

to avoid subjective statements on the level of data quality;

to document the progress/manteinance of accepted data quality;
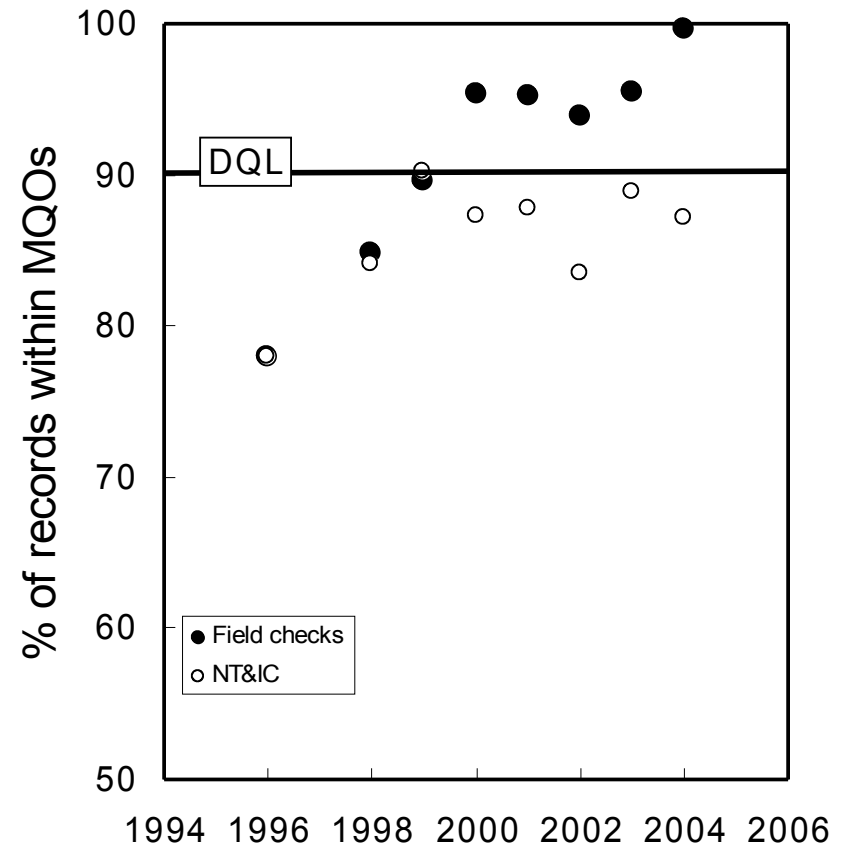

(after Ferretti et al., 2009)

Tree defoliation (based on Mues, 2005)

Exercise	Species	Crews	Pairs	Significant differences	
		n	n	n	%
Czech Republic	Picea abies	14	91	57	62.6
	Fagus sylvatica	14	91	54	59.3
Finland	Picea abies	11	55	17	30.9
	Pinus sylvestris	11	55	23	41.8
	Silver birch	11	55	31	56.4
France	Pinus pinaster	5	10	4	40.0
	Quercus ilex	5	10	7	70.0

Deadlines

Data	Tipo di scadenza	Oggetto	Contenuto
30 Aprile 2009	Milestone	Document	Recommendation for harmonized QA approach
Maggio 2009	Meeting	Meeting	QAC workshop b-t-b with FutMon Status Workshop
Dicembre 2009	Deliverable	Status Report 1	Status of forest monitoring method harmonization in Europe
30 Aprile 2010	Milestone	Document	Data Quality requirements identified
Maggio 2010	Meeting	Meeting	QAC workshop b-t-b with FutMon Status Workshop
Dicembre 2010	Deliverable	Status Report 2	Proposal for improved data quality in the new forest monitoring in Europe
30 Aprile 2011	Milestone	Document	Synthesis and review of data quality requirements ready

Ministero delle politiche agricole alimentari e forestali

Corpo Forestale dello Stato

Associated Beneficiary within LIFE+ FutMon Project [Contract n° LIFE07 ENV/D/000218]

In co-operation with its sub-contractor

Action C1-QAC-15(IT)
Coordination of quality assurance and quality control (QA/QC)

Recommendation for an harmonized QA approach

Associated Beneficiary:
Ministero delle Politiche Agricole Alimentari e Forestali
Corpo Forestale dello Stato, Italy