

Action C1-QAC-15(IT) LIFE+ FutMon Project
[Contract n° LIFE07 ENV/D/000218]



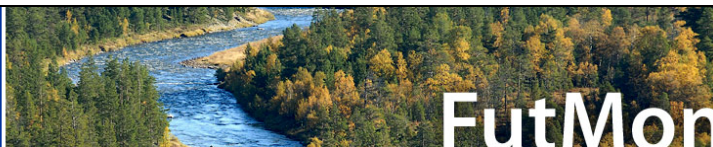
SpinOff
ACCADEMICO
Spin-off Università di Siena

Harmonization of manuals: between the ICP-Forests and the FutMon perspectives

Marco Ferretti

TerraData environmetrics

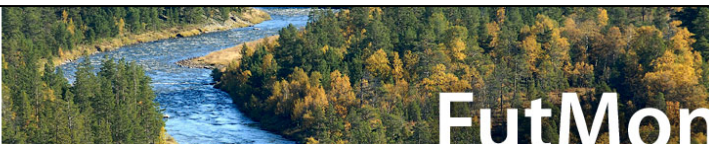
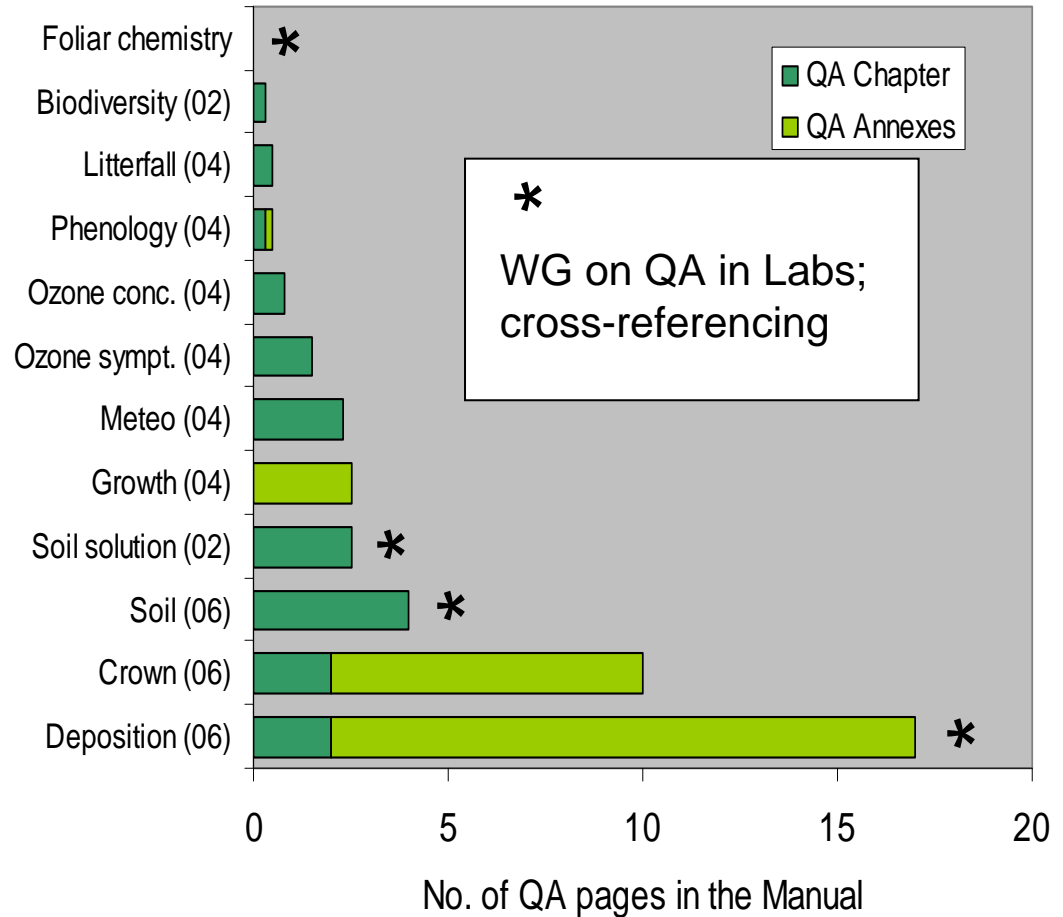
ferretti@terradata.it



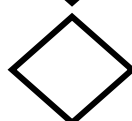
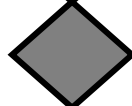
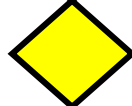
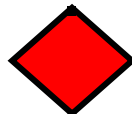
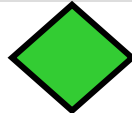
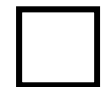
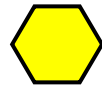
Associated Beneficiary:
Ministero delle politiche agricole alimentari e forestali
Corpo Forestale dello Stato, Italy

Motivation

- ICP Forests
 - Set-up of the QA Committee
 - Mandate from TF 2007
- Life+, Futmon project
 - C1–QAC–15 (IT), Coordination of quality assurance and quality control (QA/QC)



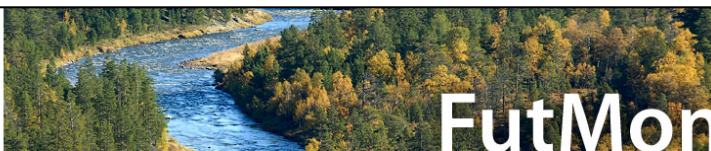
Basic concept (originally developed within the ICP Forests)



Current Sub-
Manuals and
QA sections

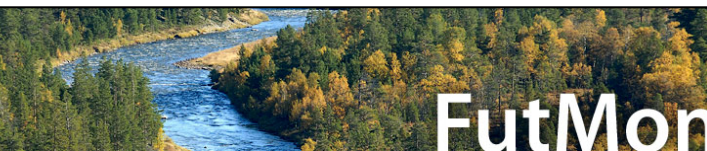
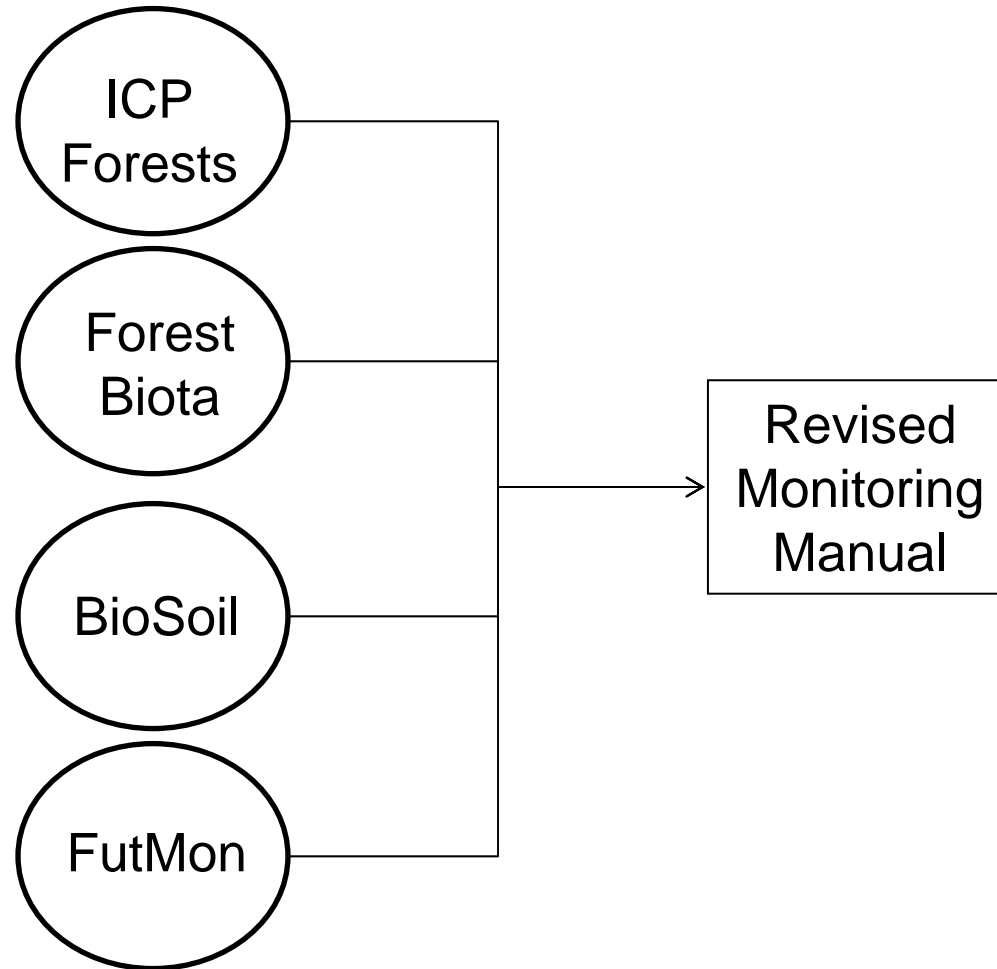
New design of
Manuals –
consistent QA
sections

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 sampling
 - 4.1 Sampling design at plot level, where the allocation 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 Quality Requirements – Plausibility limits, Data Completeness, 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 limits, data completeness
 - 6.3 Trasmission to co-ordinating centres, with timeable and rules
 - 6.4 Data processing guidelines
 - 6.5 Reporting guidelines
7. References
8. Annexes



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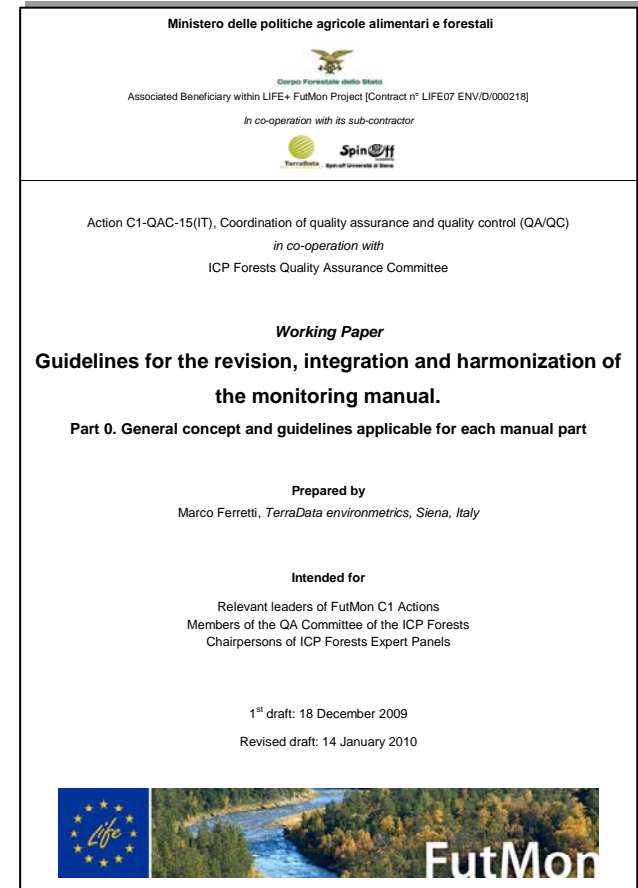
New requests (originated by the FutMon)



(i) Consider other methods: ForestBiota, BioSoil and the recent FutMon Field Protocols.

(ii) Use the ICP Forests Manual as the basis for the revision process. Experts should take into account the other sources of methods and integrate relevant parts of them into the revised Manual (when possible).

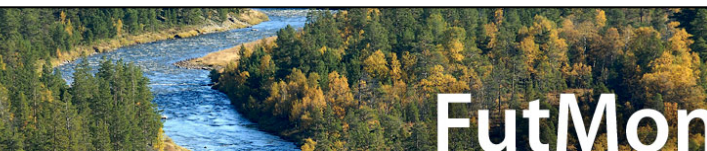
(iii) Revised manual to be submitted to the FutMon Status Workshop 2010 and to the Task Force of the ICP Forests in 2010.



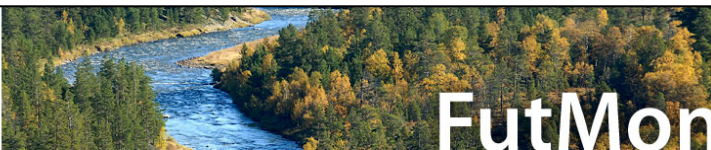
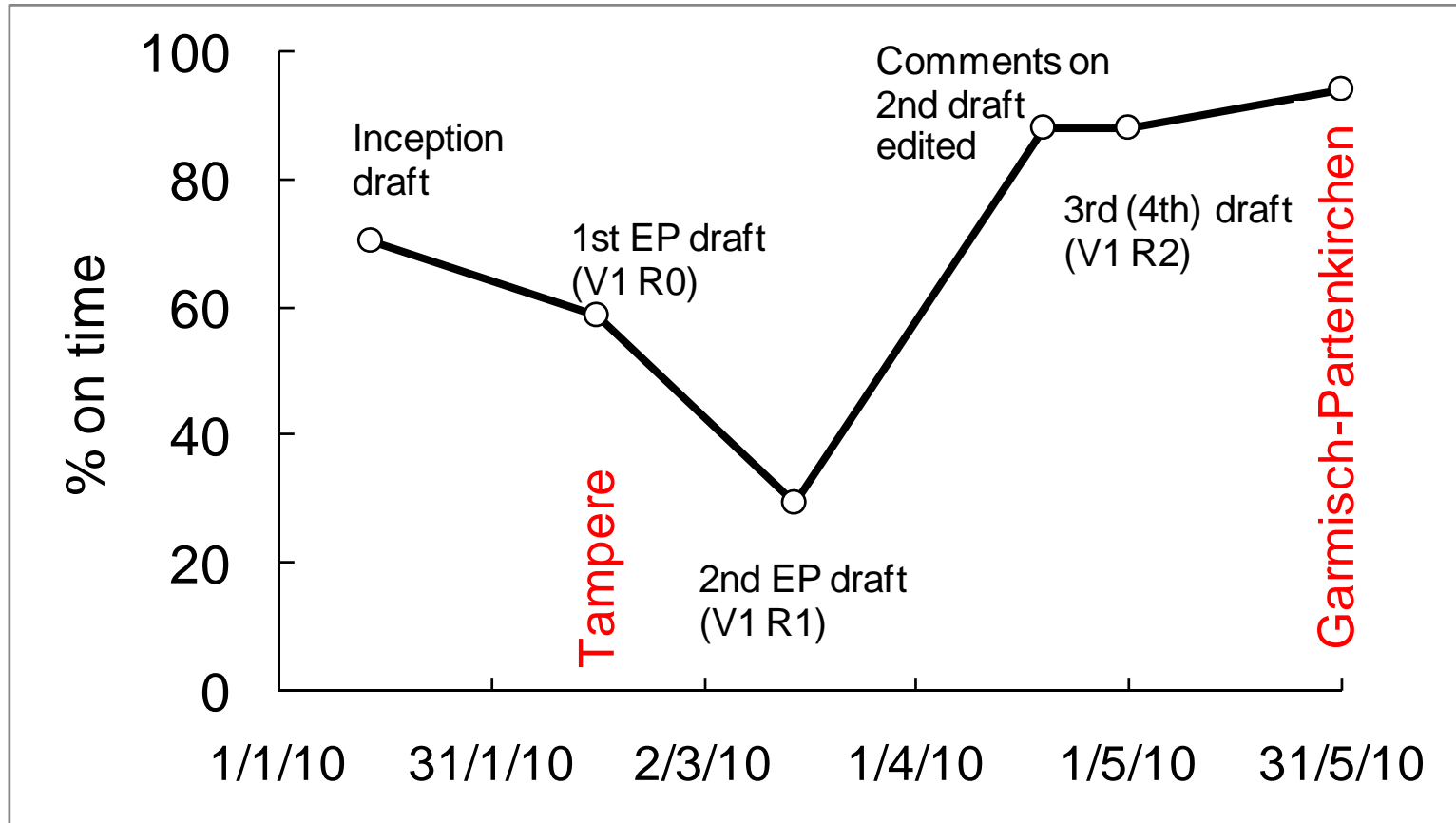
Implementation plan

(as agreed at vTI in Hamburg, December 8, 2009)

- 10th Jan 2010: Ferretti to prepare and send the detailed guidelines for revision to EPs.
- 5th (latest 10th) Feb: EP chairs to prepare and send draft manuals (v1 r0) to PCC.
- 5th (latest 10th) Feb: PCC to post drafts on the web.
- 15 Feb: Tampere meeting
- By 27 Feb: EP chairs to collect comments
- By 15th March: EP chairs prepare updated final draft (v1 r1)
- By 15th March: updated version posted on the web
- By 12th April: NFCs to comments to PCC
- By 19th April: PCC and Ferretti to edit comments and send to EP Chairs.
- By 1st May: EP Chairs to prepare updated draft (v1 r2).
- 1st June: Task Force



Implementation “profile”



FutMon

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Corpo Forestale dello Stato, Italy

Current structure

- I. Mandate
- II. Crown
- III. Soil
 - I. A. Soil (solid)
 - II. B. Soil solution
- IV. Needles/Leaves
- V. Growth
- VI. Deposition
- VII. Meteo
- VIII. Ground vegetation
- IX. Phenology
- X. Ambient Air Quality
 - I. A. Air
 - II. B. Visible injury
- XI. Litterfall

Suggested structure

- I. Mandate
- II. The monitoring networks (incl. network/plot design, georef.)**
- III. Quality Assurance (general)**
- IV. Crown
- V. Growth
- VI. Phenology
- VII. Biodiversity
- VIII. Ozone Injury
- IX. Meteo
- X. Soil
- XI. Soil solution
- XII. Needles/Leaves
- XIII. Litterfall
- XIV. Deposition
- XV. Ambient Air Quality
- XVI. QA/QC Labs**
- XVII. Data submission forms**



Main achievements

Harmonization

- structure: 92%
- content: 92%

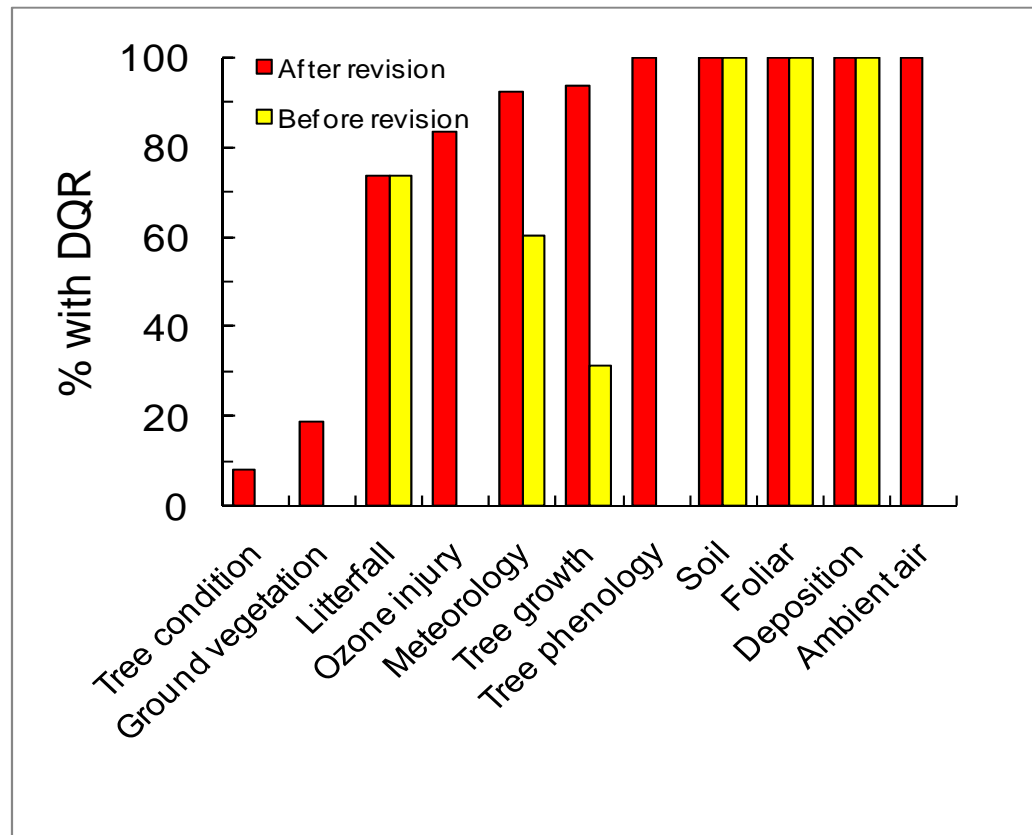
Integration of other methods

- Developed for ca. 90% of fields;
- Lacking for Forest Biota (lichens and deadwood) in GV Manual

Data Quality

- DQ Requirements: 76%
- Mean coverage of DQR: +87%
- Emphasis on p-based sampling

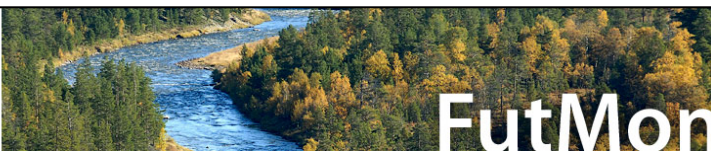
Citation and data policy



Ca. 180 measurements (excl. Soil solution)
139 have now explicit DQR



- Completion of the harmonization (8-24%...) and fine tuning (editorial and linguistic)
- Field-based surveys (tree condition, tree growth, tree phenology, ground vegetation, ozone injury, meteorology)
 - Setting DQR
 - Testing of DQR
 - Reporting and reviewing DQR
 - Maintain, expand intercomparison exercises
- Lab-based surveys (soil, soil solution, foliar, deposition, litterfall, air quality)
 - Address procedures and implementation for field sampling



**International Co-operative Programme on Assessment and Monitoring
of Air Pollution Effects on Forests**

Quality Assurance Committee

and

Ministero delle politiche agricole alimentari e forestali

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

Joint Meeting of

Quality Assurance Committee

and FutMon Action C1-QAC-15(IT)

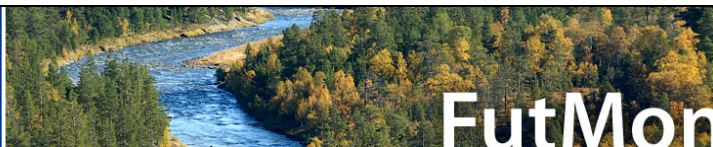
May 31st 2010, Garmisch-Partenkirchen, Germany

Convention Centre, Room "Wamberg"

17:00 - 18:30

Organised within the

ICP Forests Task Force meeting and 2nd FutMon Status Workshop



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Corpo Forestale dello Stato, Italy

Acknowledgements

- All the EP chairs, C1 leaders, involved experts for their contribution and willingness to help
- The NFCs and the reviewers for their contribution and patience
- FutMon AB 15(IT), Corpo Forestale dello Stato for support and assistance
- The team at vTI for support and assistance
- My colleagues at TerraData for their help



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