The Italian skill network of Soil Biological Quality assessed by microarthropods' community

L. D'Avino, C. Menta, C. Jacomini, F. Cassi, G. L'Abate, A. La Terza, F. Staffilani, F. Pocaterra, M. Piazzi, V. Parisi*

* CREA-AA

Research Centre of Agriculture and Environment, Florence, IT

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Development, implementation, and standardization of the QBS-ar index

Presence of microarthropod in relation to their peculiar soil adaptation level (Parisi, 2001)

48 biological forms (with EMI) in 26 taxa

Opiliones:10

Tysanoptera:1

Diplura:20

Collembola: 1<2 <4 <6 <8 <10<20

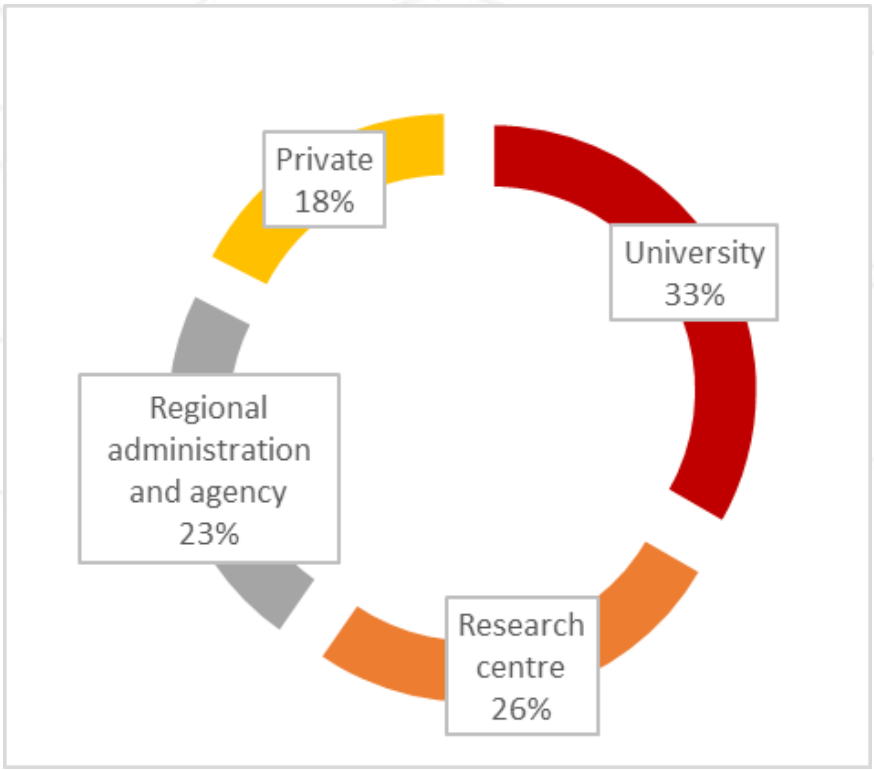
Coleopterans: 1 <5<10<20

Network aim

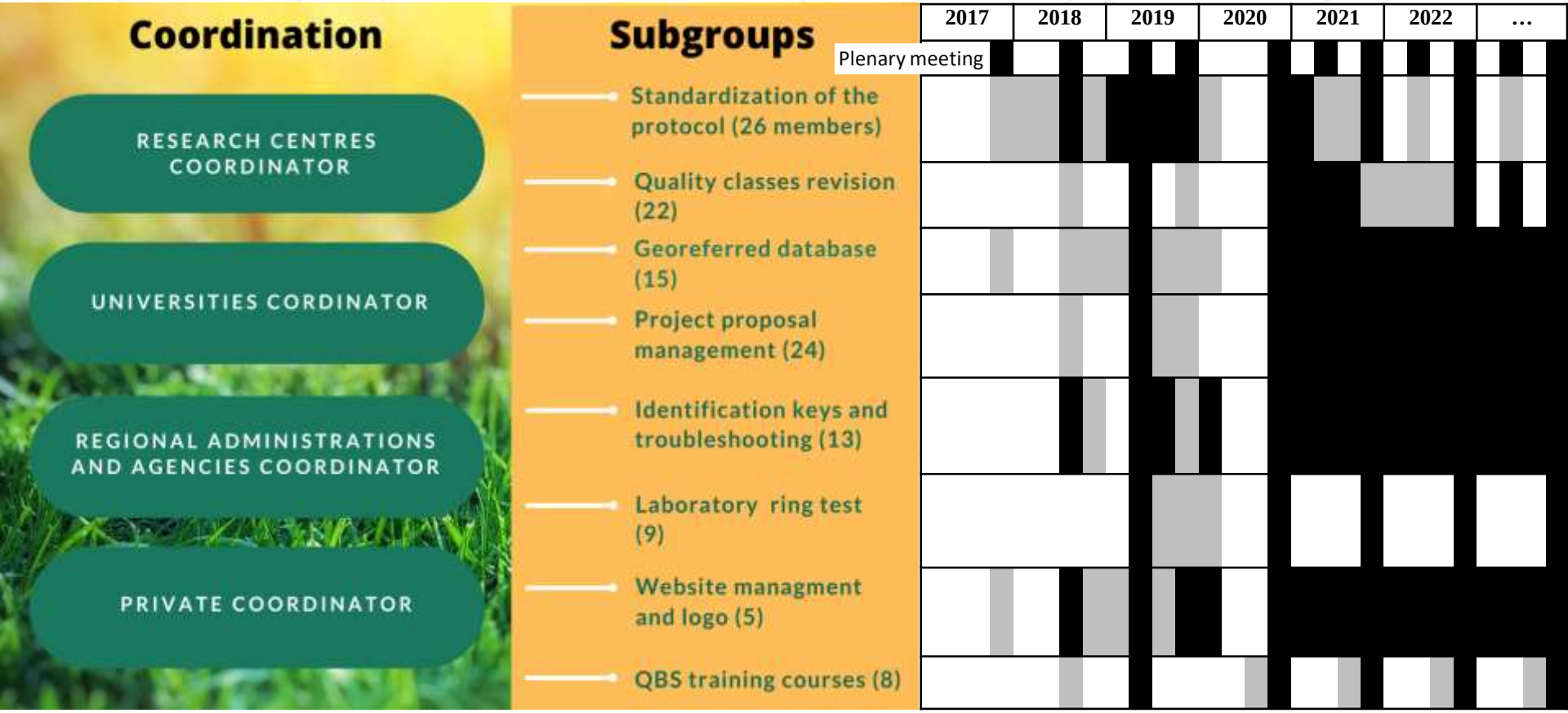
- ✓guarantee the correct QBS-ar use in each application phase everywhere, allowing comparison between sites;
- ✓ create synergies among researchers applying QBS-ar index in soil monitoring programs and projects;
- ✓gather dataset and publication to promote knowledge in soil microarthropods communities;
- ✓develop a standardized protocol of QBS-ar application for different climatic zones;
- ✓promote short training courses for beginners or experts;
- ✓help users to solve troubleshooting during identification.

Nowadays 55 QBS-ar experts

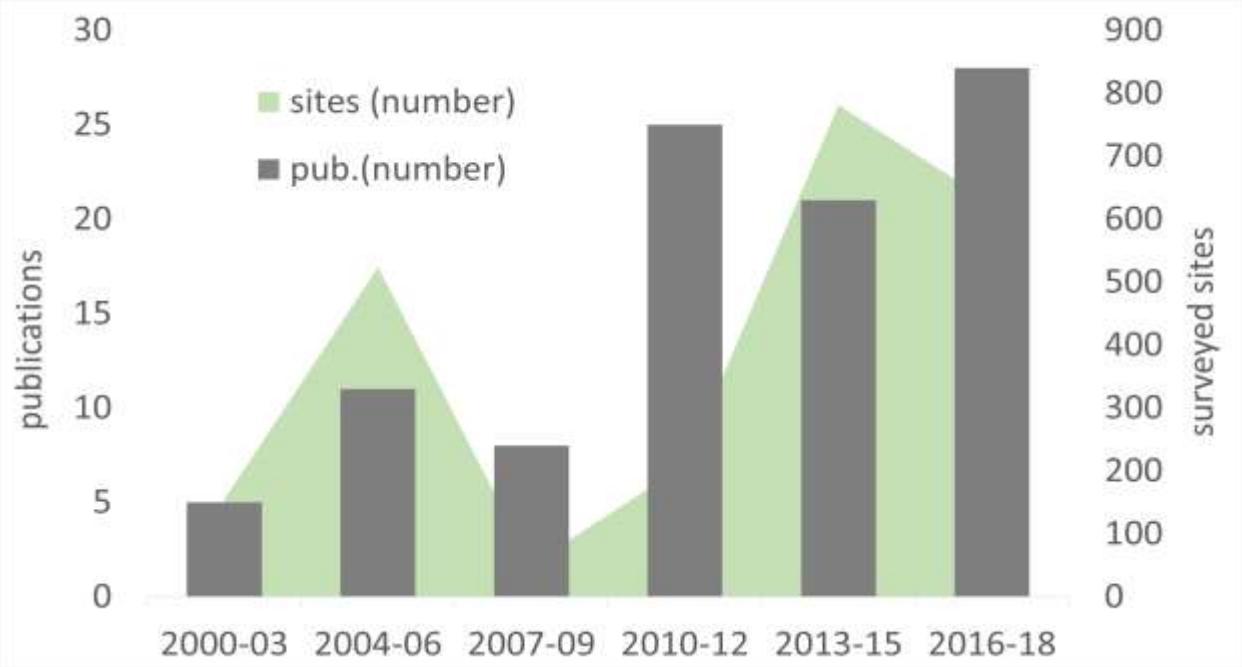
throughout Italy, mainly academic researchers



Flow chart and time schedule



QBS-ar relating publications, made available for members



100 publications, more than 2600 soil sites investigated

SWOT analysis

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Robust	Quality Classes to be redefined	Possibility of on-line data inserting	Data Quality Control still absent
Cheap	Generic	Soil Food Webs Insights	Homogeneous Database Implementation
Easy-to-learn, to set up & to implement	Multiple Disturbance Factors	Soil Community Structure Definition	Implementation in not-applicable contexts
Fast in reckoning the final value	Actual representativeness of the sample sites	Correlation with soil resilience to specific stress factors	Mistakes in procedure implementation or in EMI assignment
Data Ecosystem Approach	Not always well-applied outside Italy	Implementation to several scales	Need of milestone sites
Numerical, non-qualitative index	Hard response to forests selective cutting	Easy method's efficacy Communication	Vertical fluctuations, soil humidity and temperature correlations at sampling moment
Short term index, expression of biodiversity	Eventual reference site need (Treatment vs. Control)	Robust Regional Dataset Implementation	Does not allow to check which soil degradation cause and needs other indexes correlation
Soil researchers appreciation	Does not consider specimens abundances	Direct relationship with soil porosity, land use and agricultural practices	Sensitive Species may determine their Faunal Unit absence
Easy to sample and easy to identify Faunal Units			
Represents soil aggregate distribution better than other diversity indexes			

Logo: call for tender

Some examples

Versions of winner (Dr. Aldo D'Alessandro)

Winning logo

Thank you for your attention, and join QBS-ar working group, is free!

QBS-ar

siss

https://scienzadelsuolo.org/QBS-ar.php
qbs@scienzadelsuolo.org
lorenzo.davino@crea.gov.it

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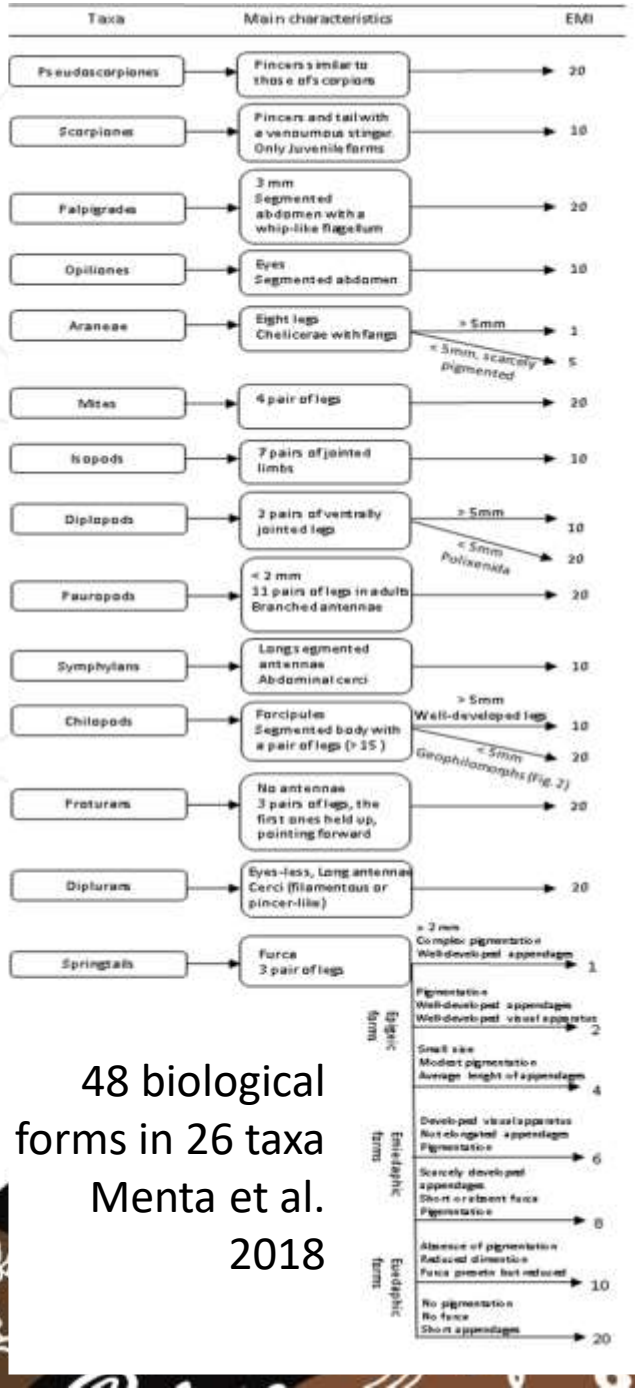
and all the members of the National Working Group

additional

sampling

Original Berlese extractors
CREA-DC Florence



48 biological forms in 26 taxa
Menta et al. 2018