ICOS and coordinated in situ carbon & greenhouse gas observations towards policy-relevant knowledge

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Contributing to the Paris Agreement

The Integrated Carbon Observation System (ICOS) is a European Research Infrastructure providing data and scientific knowledge in support of climate action. Standardized high-precision observation data is crucial for a large number of purposes: calibration of remotesensing measurements, validation of climate models, calculation of emission factors, improvement of



ICOS in a nutshell

standardized produces European-wide measurements on carbon cycle, greenhouse gas fluxes, and atmospheric concentrations of greenhouse gases.

dinated

Facilities

control,

Essential

Variables

processing,

instrument

atmosphere,

by Central

calibration,

data

quality

deve-

Climate

(ECVs) by

Observations are coor-

lopment and training.

ICOS is based on the

GCOS and harmonized

with the GCOS imple-

mentation plans.

for

national inventories.

- ICOS communicates observation-based scientific results towards political decision-making to foster science-based, informed decisions.
- ICOS cooperates closely with WMO and contributes to the Integrated Global Greenhouse Gases Information System (IG³IS).
- ICOS is a participating organization in the Group on Earth Observations (GEO) and hosts the secretariat of the GEO Carbon and GHG Initiative.

SEACRIFOG > long-term GHG observations in Africa

VERIFY > accurate GHG budgets

SEACRIFOG is an ongoing design study for a pan-African GHG observation system on GHGs and aerosols.

The primary objective of the project is to formulate a roadmap towards fully interoperable and accessible research infrastructures in agricultural and GHG observation research in the EU and Africa that match the needs of scientists, policy-makers and end-users such as farmers.



VERIFY will be a testbed on how independent observations can support inventories that rely only on statistical data. Measuring the effectiveness of GHG emission reduction policies against agreed-upon international targets require accurate and precise observation of emissions and their trends. The final truth is in the atmosphere. Respective information systems need to be established and regularly updated using transparent methods, traceable to international standards.

Comprehensive bottom-up and top-down reconciliation...





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> INTEGRATED CARBON **OBSERVATION SYSTEM**

Knowledge Through Observations