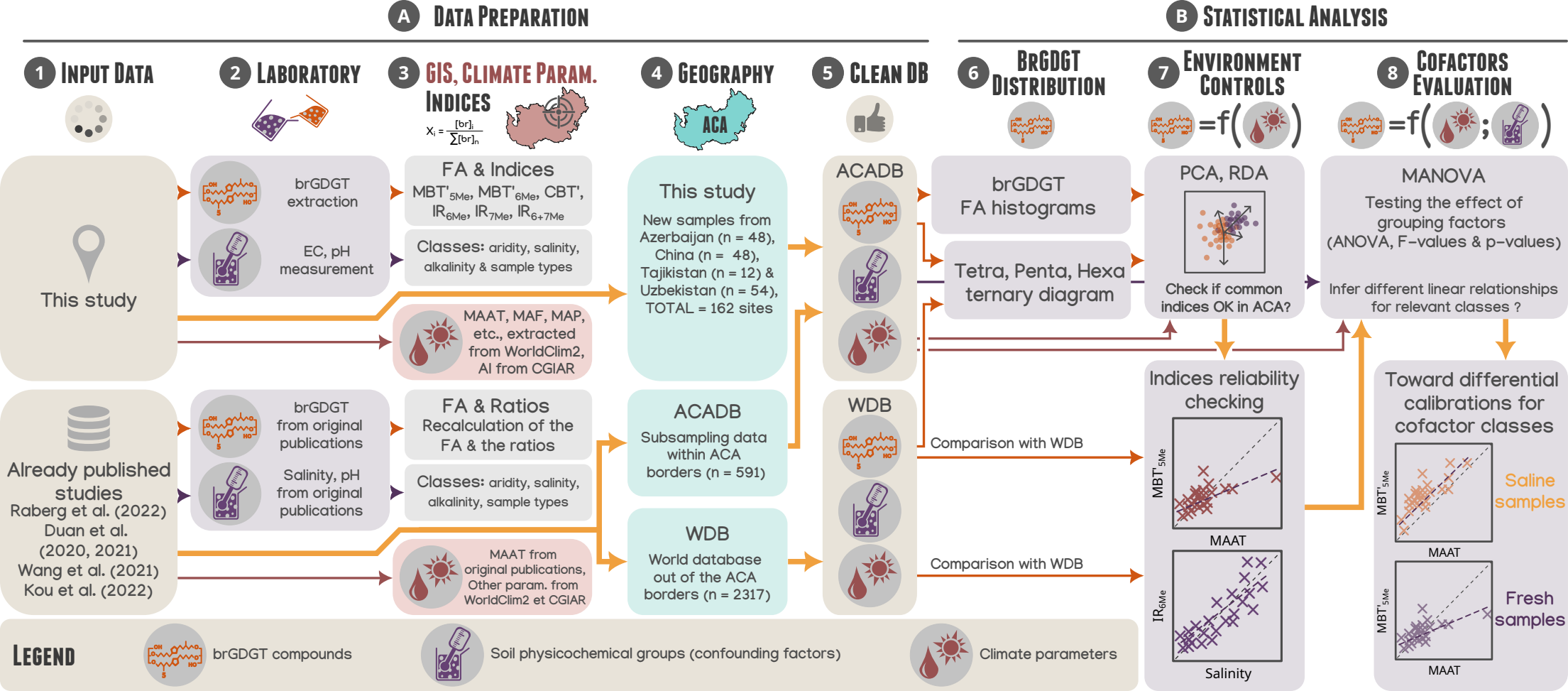
A Data Preparation
B Statistical Analysis
1 Input Data
2 Laboratory
3 GIS, Climate Param. Indices
4 Geography
5 Clean DB
6 BrGDGT Distribution
7 Environment Controls
8 Cofactors Evaluation
This study
brGDGT extraction
EC, pH measurement
FA & Indices
MBT'5Me, MBT'6Me, CBT', IR6Me, IR7Me, IR6+7Me
Classes: aridity, salinity, alkalinity & sample types
MAAT, MAF, MAP, etc., extracted from WorldClim2, AI from CGIAR
This study
New samples from Azerbaijan (n = 48), China (n = 48), Tajikistan (n = 12) & Uzbekistan (n = 54), TOTAL = 162 sites
ACADB
brGDGT FA histograms
Tetra, Penta, Hexa ternary diagram
PCA, RDA
Check if common indices OK in ACA?
MANOVA
Testing the effect of grouping factors (ANOVA, F-values & p-values)
Infer different linear relationships for relevant classes ?
Already published studies
Raberg et al. (2022)
Duan et al. (2020, 2021)
Wang et al. (2021)
Kou et al. (2022)
brGDGT from original publications
Salinity, pH from original publications
FA & Ratios
Recalculation of the FA & the ratios
Classes: aridity, salinity, alkalinity, sample types
MAAT from original publications, Other param. from WorldClim2 et CGIAR
ACADB
Subsampling data within ACA borders (n = 591)
WDB
World database out of the ACA borders (n = 2317)
WDB
Comparison with WDB
Comparison with WDB
Indices reliability checking
MBT'5Me
MAAT
IR6Me
Salinity
Toward differential calibrations for cofactor classes
Saline samples
Fresh samples
Legend
brGDGT compounds
Soil physicochemical groups (confounding factors)
Climate parameters