BLOCK B (11:15-13:00)

Closing nutrient and carbon cycles

Involved projects: EOM4SOIL, BIOCASH

Conveners: Sabine Houot (INRAE), Walter Rossi Cervi (WR)

The use of external organic matters (EOM) in agriculture has been realized since many years through the application of animal manures and slurries. Now it becomes mandatory to recycle biowastes from urban activities (from homes, restaurants, stores) and their application on soils after treatment contribute to nutrient cycling and bioeconomy in territories, together with organic carbon contribution to soils and climate mitigation. Before application, different treatments are applied to these organic wastes that could also produce services such as energy production with anaerobic digestion. Other innovative treatments like pyrolysis producing biochars or new sources of recycled materials like human urine increase the diversity of characteristics of the EOM applied on soils, increase or decrease the efficiency of nutrient recycling. Such EOMs may also carry contaminants (organic contaminants, impurities, trace elements) that needs to be known and controlled to prevent environmental impacts associated with EOM recycling. The use of EOM may also have impacts in relation with the nutrients fluxes (ammonia volatilization, N2O emission, nitrate leaching) and it is important to control and prevent these impacts. To ensure the uses of these EOMs in fertilizing practices with maximum nutrient use efficiency, positive carbon budget and economically viable without environmental impacts, recommendation for good management of organic wastes treatment and use as fertilizers need to be produced for end users at the farm or territory scale together with policy recommendation at the territory or national level. The session will address these questions of best management practices in recycling EOMs to close nutrient and carbon cycles.