LCA4Regions
Interreg Europe

European Union
European Regional
Development Fund

LCA4Sustainability in Regions

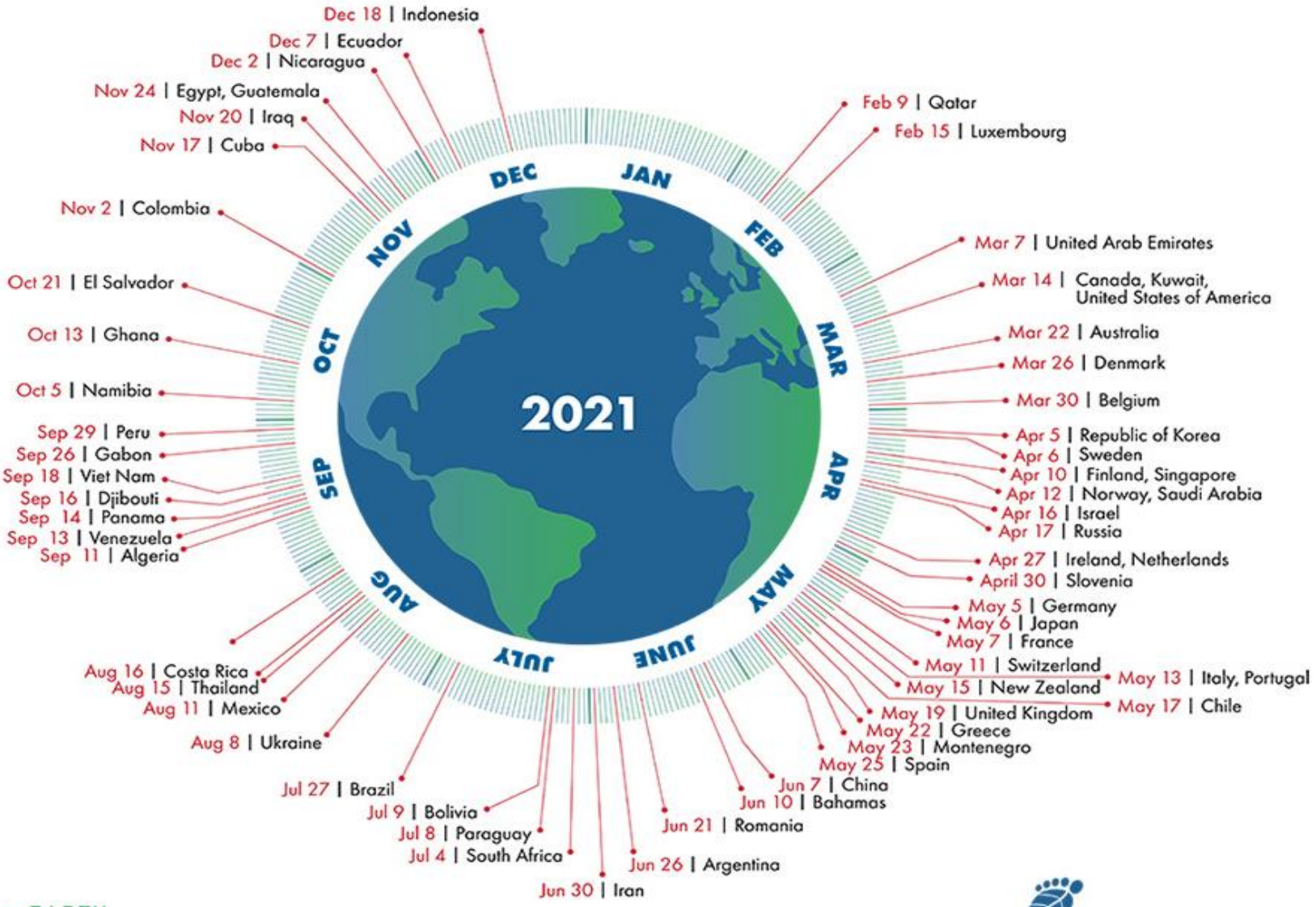
Fritz Balkau

Definitions are important

What exactly is sustainability ?

Country Overshoot Days 2021

When would Earth Overshoot Day land if the world's population lived like...



EARTH OVERSHOOT DAY

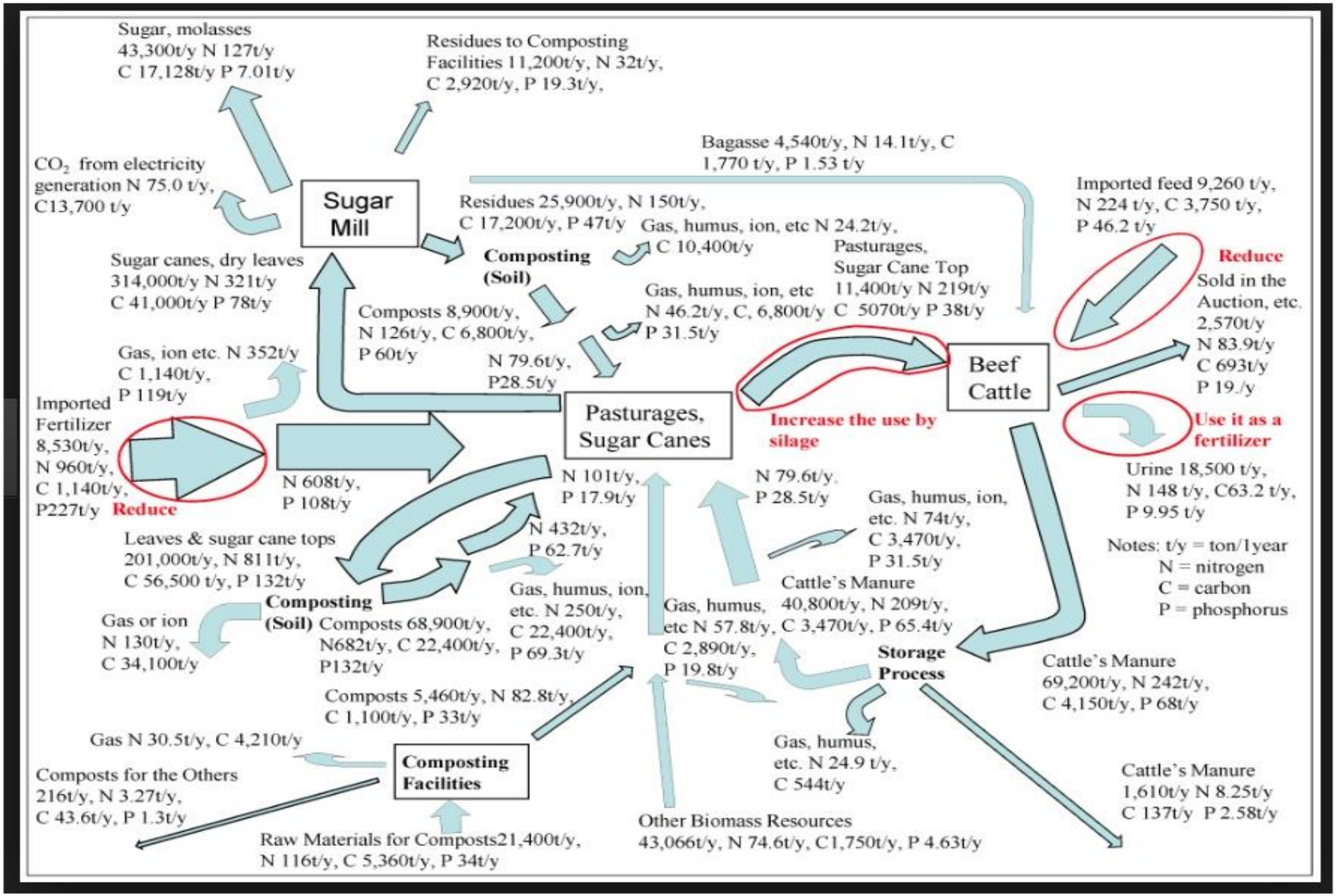
Source: National Footprint and Biocapacity Accounts, 2021 Edition
data.footprintnetwork.org

Global Footprint Network
Advancing the Science of Sustainability

Complex challenges are rarely resolved by simple solutions

Challenges of our times - climate, resources, waste, pollution, health, biodiversity, social equality, gender and intergenerational, ……

Example: Mass flows in agricultural systems



But some powerful tools are at hand

Some framework initiatives we know

SDGs, Paris and COP26, IRPTC, IRP, MEAs CDM, Green financing, EU Green Deal

Regional resource efficiency, waste management, renewable energy, ...

Q: To what extent are the above based on life cycle thinking ?

The life cycle toolbox

Life cycle systems and concepts	life cycle thinking
	circular economy
	industrial ecology
	cradle-to-grave
Life cycle assessment and system-analysis tools incorporating life cycle elements	life cycle assessment (LCA *) (materials, energy)
	environmental, ecological, carbon, water footprints
	materials flow analysis (MFA)
	environmentally extended input–output tables (EEIO)
	social LCA (SLCA)
	life cycle sustainability assessment (LCSA)
	organisational LCA (O-LCA)
	life cycle Costing (LCC and E-LCC), total cost of ownership (TCO)
	chemicals assessment *
	risk assessment
	Evolving assessment tools for biodiversity, land-use, landscape etc.
Life cycle management tools	eco-design
	eco-labels *
	environmental product declarations (EPD) *
	product environmental footprint (PEF) *
	sustainable supply-chain management (SSCM)
	circular materials management
	product-service system (PSS)
	sustainable and/or circular public procurement (SSP, CPP)
	green purchasing (GP)
	extended producer responsibility (EPR)
Organisational assessment and management tools incorporating life cycle elements **	environment management systems (EMS, EMAS)
	(organisational LCA (O-LCA) (see also above)
	environment impact assessment (EIA)
	environment auditing
	corporate social responsibility (CSR)
	sector-specific management codes
	sustainability reporting (e.g., GRI)
	emergency and disaster planning and preparedness (e.g., APELL)

* Some of the above have become standardized procedures under international agreements or practices, ** Other concepts such as

Many local actions are improved by LCA

Product profiles
Life cycle costs
Buying sustainably
Circular materials flows
Residue management
Energy efficiency
etc .....

A new role for LCA

Zero targets met through offsets ?

Ongoing role for LCA

Biomass and energy

LCA4Regions Stakeholders

Governments, partners, clients, suppliers, workers, neighbours, future generations, ...

Important in:

- public procurement, supply chains
- energy options
- waste reduction, recycling & CE
- other

Challenges ahead

Climate adaptation

Resource availability

Trade patterns and barriers

Security

Pandemic

Q: What role for life cycle thinking ?

Building capacity

‘awareness, knowledge, attitude, skills, participation’
From Tbilisi Declaration 1977

Important components in CB:

- reliable information and data
- training and skill development
- information exchange
- pilot projects
- motivation

Thank you!

fbalkau@gmail.com