

Twin-Regions



**Global solidarity to unlock the potential for
regeneration**

A recipe for survival

Marc BERNARD, “4 per 1000” Bonn



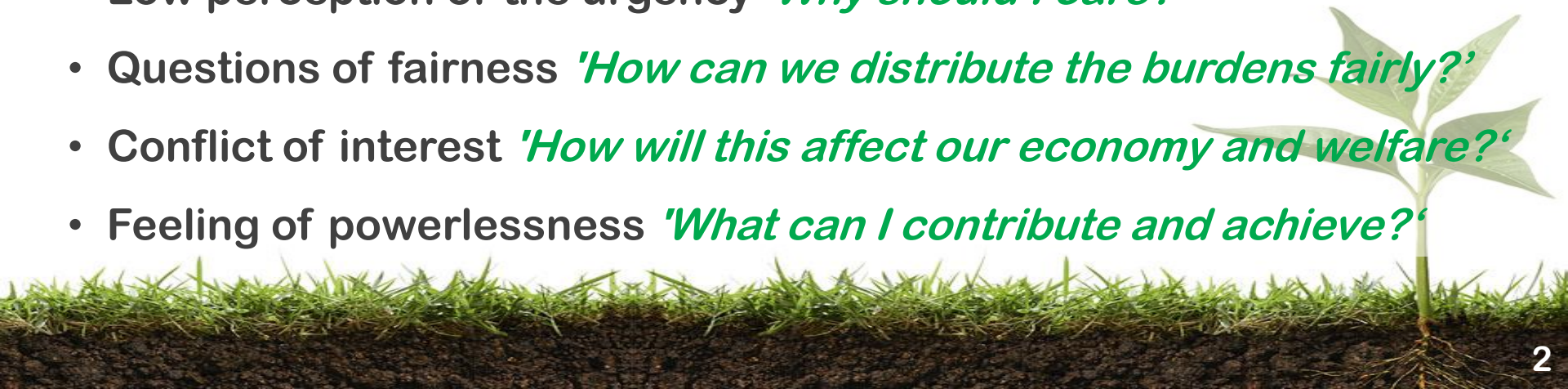
Background

Situation

- Hundreds of billions of tons of carbon dioxide (CO₂) must be eliminated.
- Despite all expression of intent, efforts on the national and international level failed to halt the life threatening development.

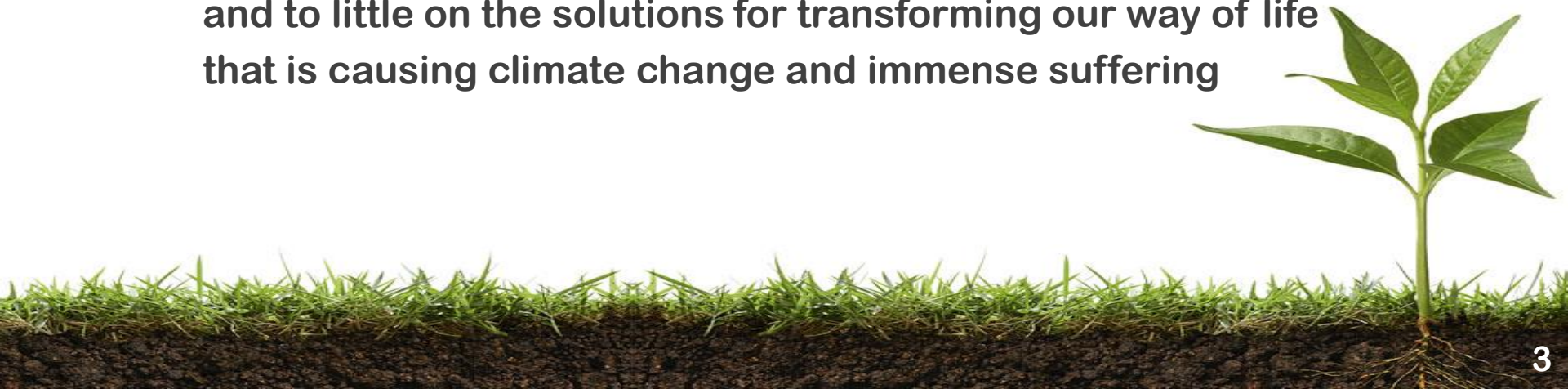
Problems that prevent change of course

- CO₂ emissions kill *'Why do we not invest in CO₂ disposal, as we do with waste and wastewater?'*
- Low perception of the urgency *'Why should I care?'*
- Questions of fairness *'How can we distribute the burdens fairly?'*
- Conflict of interest *'How will this affect our economy and welfare?'*
- Feeling of powerlessness *'What can I contribute and achieve?'*



Justification

1. Decision-makers, who have to balance interests, are finding it difficult to provide a satisfactory response to the justified demands of initiatives such as Fridays for Future, despite all the sympathy.
2. We believe that approaches that enable citizens to act independently and self-determined and promote international solidarity are essential for solving the climate crisis.
3. Present discussion about solutions is too technology focused and to little on the solutions for transforming our way of life that is causing climate change and immense suffering



Purpose

- Introducing a novel mechanism combining large-scale bottom-up climate action and international solidarity to reduce emissions and unlock untapped potential for natural carbon sequestration, starting with improving soil health
- Contribute to a rapid and substantial reduction of atmospheric CO₂
- Address the above mentioned issues
- Contribute to the solution of pressing societal and environmental problems



What is a Twin-Region ?

A Twin-Region is a pair of complementary localities in terms of emissions and carbon sequestration potential. It is essentially determined by their area and the potential to increase biomass production.

Sinendé (Benin)



	Sinendé	Alfter	Combined
Area (ha)	228.900	3.400	232.300
Population	91.000	24.000	115.000
Emissions per person (CO2 t/a)	0,4	12,5	2,9
Total emissions (CO2 t/a)	36.400	300.000	336.400
Estimated carbon capture potential (CO2 t/a)	970.000	15.000	985.000
GDP per capita (USD)	1.259	45.466	10.485
Rainfall (mm/a)	1.200	800	1.000

Alfter (Germany)

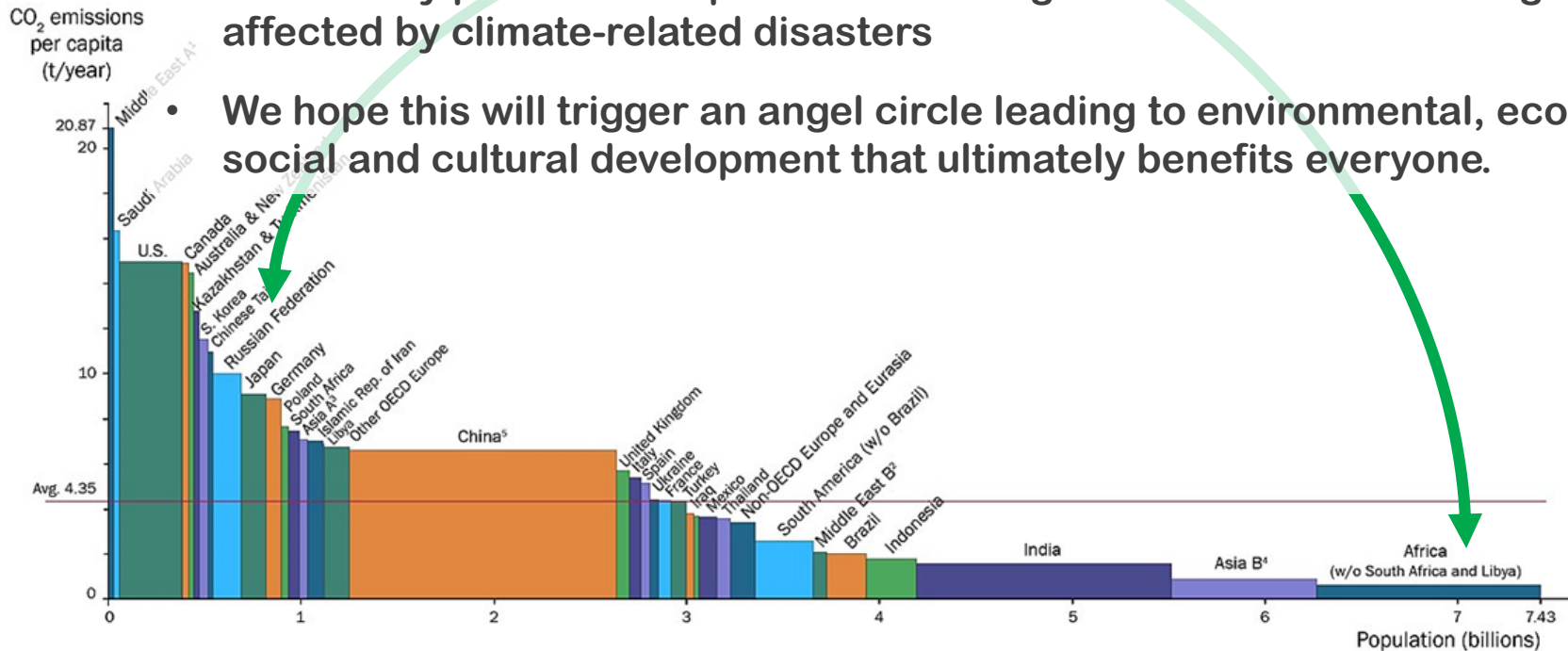


Together they are pursuing the goal of being CO₂-neutral by 2050 at the latest and from then on to pay off the historical CO₂ debts. Progress is measured by the carbon balance of the Twin-Region, which includes both localities. To achieve this, citizens in both regions will pool their social, cultural, financial and natural resources to develop the necessary solutions that take into account their local conditions.

What is a Twin-Region ?

- Citizens in rich countries will focus on solutions to reduce emissions and support carbon sequestration (CO₂ disposal) in their partner communities.
- Citizens in poor countries will use innovative land use technologies to combine increased carbon sequestration with sufficient food production

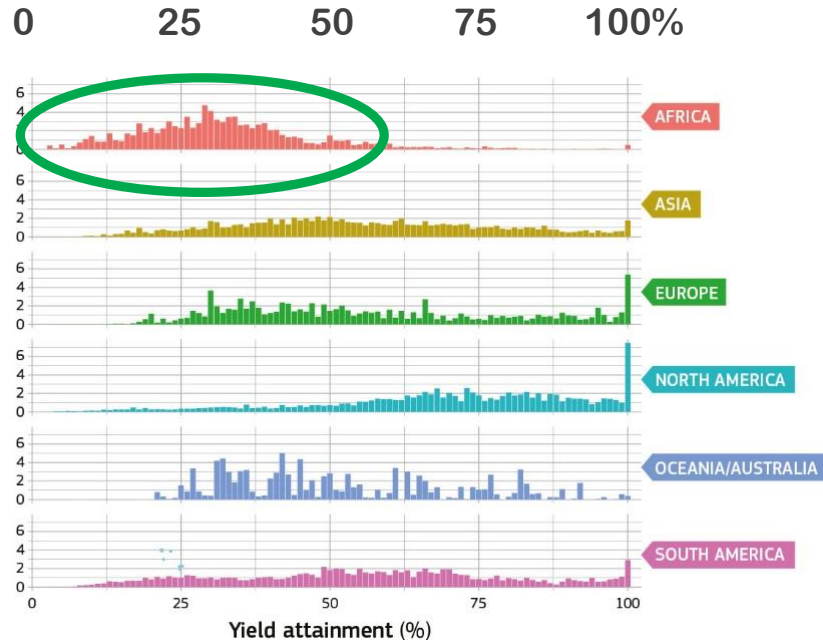
Worldwide CO₂ Emissions (2016; by region; per capita)



Potential

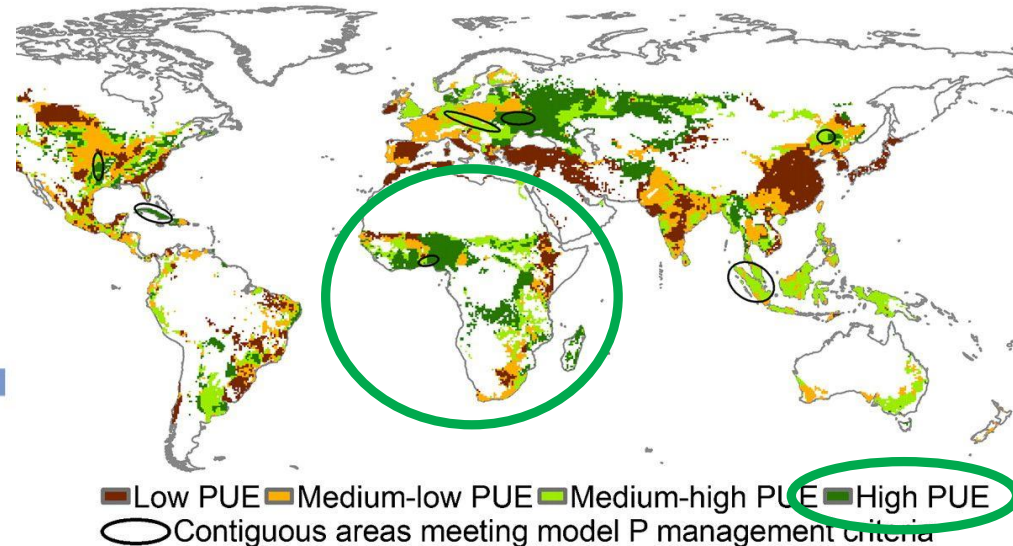
Sub-Saharan Africa is the world region with highest carbon capture potential

Yield attainment



Source: JRC, derived from N. Mueller, 2012.

Phosphate Use Efficiency (PUE)



Source: Agronomic phosphorus imbalances across the world's croplands
<https://www.pnas.org/content/108/7/3086>

Potential

Based on scarce data we estimate that 1 to 5 Gt of carbon (4 to 18 Gt of CO₂) can be sequestered in SSA by reducing nutrient deficiency by applying 2 to 3 times 23 kg P₂O₅ (100 kg NPK) per ha

Land use	Area in SSA (million ha)	Estimated additional annual C-Sequestration (t of C/ha/year)		Total Annual C- sequestration potential (Gt of C)		Estimated time to saturation of carbon stock (years)	10 Years C- sequestration potential (Gt of C)	
		from	to	from	to		from	to
Herbaceous Crops	119	0,25	1,5	0,03	0,18	1	0,03	0,18
Woody Crops	17	1,25	7,5	0,02	0,13	10	0,21	1,28
Grasslands	672	0,25	1,5	0,17	1,01	1	0,17	1,01
Shrub- covered Areas	124	0,5	2	0,06	0,25	10	0,62	2,48
Total	932			0,28	1,56		1,03	4,94

Sources: Alvarez-Clare et al. (2013); Campo und Vazquez-Yanes (2004); FAO-Modis, Feldpausch et al. (2007); Gehring et al. (1999); Nair et al. (2009); Poorter et al. (2016); Silver et al. (2000)

Expected Co-benefits

- Climate resilience
- Food security
- Biodiversity
- Improved livelihoods
- Prevent migration
- ...



Ambition

2030 – 20 Countries

2050 - Global



Start-up activities

- Lobby for support
 - We are looking for fierce companions
- Pilot projects for clarifying open questions
 - Explore the feasibility of the Twin-Regions concept in participation with stakeholders
 - Get a realistic assessment of the potential to boost carbon sequestration by reducing nutrient deficiencies in soils of SSA.
 - Assess co-benefits and risks
- Launch a virtual youth exchange campaign to trigger the movement
 - Virtual meetings, compare habitat,
 - Video-clip contest: ***"Our vision of life in 2050 and how to make it happen".***



