

The background of the slide is a dense, repeating pattern of green clover leaves. The leaves are small and have a characteristic three-lobed shape. The overall color is a dark, muted green, with the leaves themselves appearing slightly lighter and more vibrant. The pattern is uniform and covers the entire area.

RECONCEPTUALISING SKILLS FOR DEVELOPMENT IN THE ANTHROPOCENE: TOWARDS A TRANSFORMATIVE AGENDA

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Education for Sustainable Development in the Postcolonial World

TOWARDS A TRANSFORMATIVE AGENDA FOR AFRICA

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FOUNDATIONS AND FUTURES OF EDUCATION





THE ANTHROPOCENE

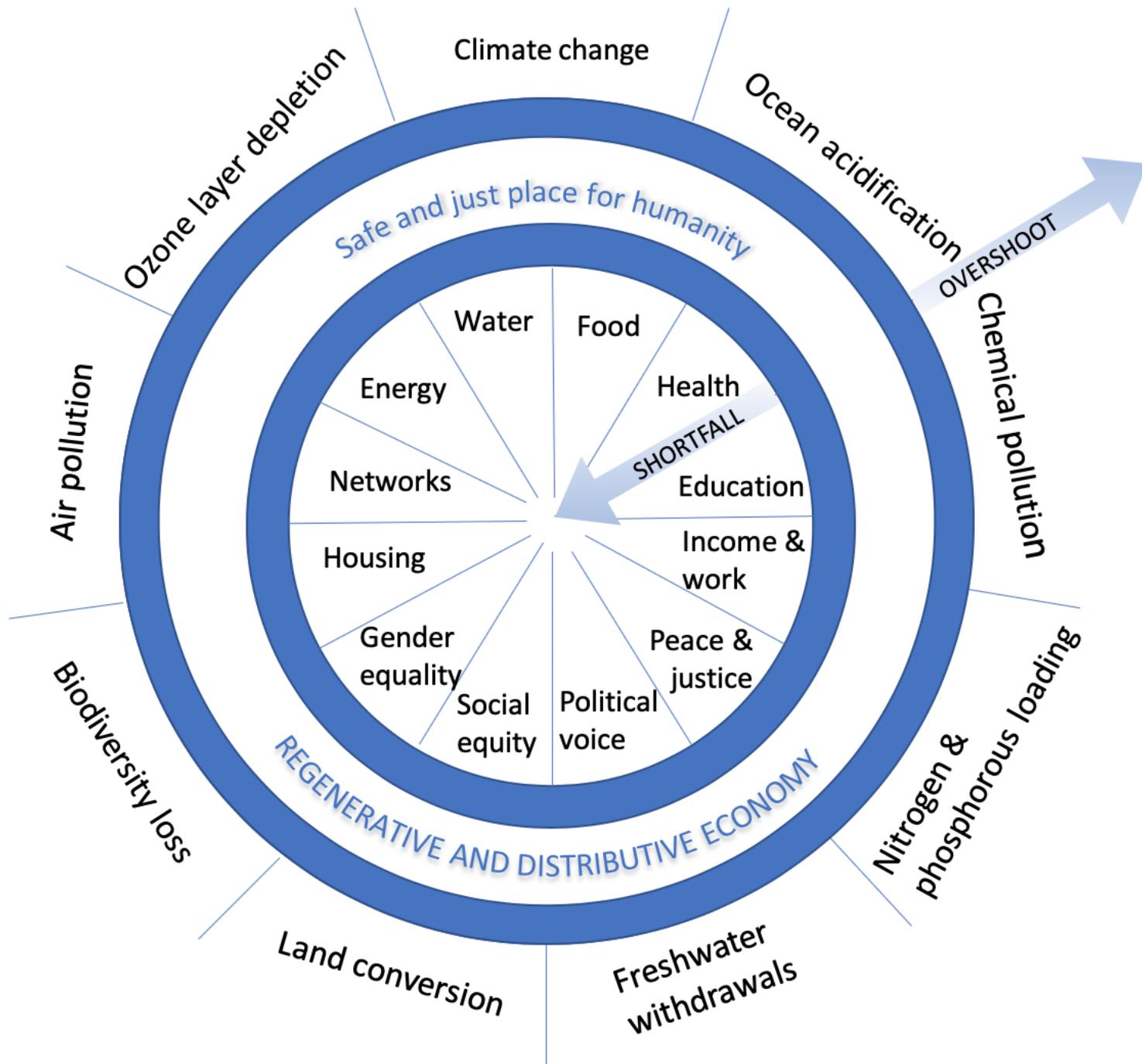
- The **Anthropocene** defines Earth's most recent geologic time period as being human-influenced, or anthropogenic, based on overwhelming global evidence that atmospheric, geologic, hydrologic, biospheric and other earth system processes are now altered by humans.

CLIMATE CHANGE AND BIOSPHERE COLLAPSE

- “There is alarming evidence that important tipping points, leading to irreversible changes in major ecosystems and the planetary climate system, may already have been reached or passed. Ecosystems as diverse as the Amazon rainforest and the Arctic tundra, may be approaching thresholds of dramatic change through warming and drying. Mountain glaciers are in alarming retreat and the downstream effects of reduced water supply in the driest months will have repercussions that transcend generations”. (UN, 2019)

SIX STEPS TO REDUCE RISKS POSED BY CLIMATE CHANGE

- **Energy:** Politicians should impose carbon fees high enough to discourage the use of fossil fuels, they should end subsidies to fossil fuel companies and implement massive conservation practices while also replacing oil and gas with renewables.
- **Short-lived pollutants:** These include methane, hydrofluorocarbons and soot - the researchers say that limiting these has the potential to cut the short-term warming trend by 50% over the next few decades.
- **Nature:** Stop land clearing, restore forests, grasslands and mangroves which would all help to sequester CO₂.
- **Food:** A big dietary shift is needed say researchers so that people eat mostly plants and consumer fewer animal products. Reducing food waste is also seen as critical.
- **Economy:** Convert the economy's reliance on carbon fuels - and change away from growing the world's gross domestic product and pursuing affluence.
- **Population:** The world needs to stabilise the global population which is growing by around 200,000 a day.



THE MODEL OF
 'DOUGHNUT
 ECONOMICS'
 ADAPTED
 FROM
 RAWORTH
 (2017)





4 QUALITY EDUCATION



Goal 4: Ensure inclusive and quality education for all and promote lifelong learning

Obtaining a quality education is the foundation to improving people's lives and sustainable development. Major progress has been made towards increasing access to education at all levels and increasing enrolment rates in schools particularly for women and girls. Basic literacy skills have improved tremendously, yet bolder efforts are needed to make even greater strides for achieving universal education goals. For example, the world has achieved equality in primary education between girls and boys, but few countries have achieved that target at all levels of education.



MEANING OF THE LEARNING CRISIS

- The term ‘learning crisis’ has been popularised by the World Bank amongst other organisations (Bank 2018). It is often used rhetorically in policy discourse when describing education systems in Africa and elsewhere.
- Although there has been progress in improving access to primary education, learning outcomes (as measured in standardised tests of literacy and numeracy) remain very low across the continent. Worst affected are often learners from low socio-economic backgrounds, girls, minorities and rural dwellers.
- Although many countries are in the process of moving towards competency-based curricula, many curricula remain heavily content driven, linguistically and cognitively too demanding and irrelevant to local contexts and the needs of learners. High stakes assessments aimed at filtering access to higher levels of education and to the limited opportunities in the labour market continue to drive both curricula and pedagogical processes which have, since colonial times, been formalistic, authoritarian and teacher centres in nature.
- A key issue is the availability of suitably qualified teachers on the continent and a mismatch between teacher education and the realities of classrooms and other learning spaces. These issues are compounded by often very large class sizes as well as issues of a poor infrastructure, textbooks and other teaching and learning resources.



MEANING OF THE LEARNING CRISIS

- Opportunities to progress to higher levels of education and training are limited by inadequate basic skills, which further entrenches inequities and exacerbates the crisis.
- There is a shortage, for example in technical and vocational skills that could potentially contribute to alleviating youth unemployment and assist processes of sustainable development in rural and urban areas.
- Access to higher education continues to be very limited, particularly for women and other marginalised groups. This also limits the capacity of universities to contribute to processes of African-led development through research and innovation.
- Educational institutions are often sites for reproducing rather than reducing inequalities and for perpetuating physical violence in the form of corporal punishment, gender and ethnically based violence as well as 'epistemic' violence through the marginalisation of local and indigenous languages and knowledge systems from the curriculum.
- Further, despite efforts to introduce forms of ESD into educational institutions, recent evaluations of the impact of the UN Decade of Education for Sustainable Development, for example, show that take-up has been partial and limited (UNESCO 2014b).

TWENTY-FIRST CENTURY SKILLS. SOURCE: WORLD ECONOMIC FORUM (2015).

Foundational Literacies How students apply core skills to everyday tasks	Competencies How students approach complex challenges	Character Qualities How students approach their changing environment
Literacy Numeracy Scientific literacy ICT literacy Financial literacy Cultural and civic literacy	Critical thinking/ problem-solving Creativity Communication Collaboration	Curiosity Initiative Persistence/ grit Adaptability Leadership Social and cultural awareness

CRITIQUE

- Simplistic, linear view of education and development relationship
- Can lead to naïve view of education as a panacea for SD which it is not.
- Elides the effects of power and inequality in education
- Eurocentric in its assumptions
- Education's role in unsustainable development not sufficiently acknowledged/ explained
- No reference to the environmental dimension
- Lacks a normative basis of social and environmental justice
- Does not present a theory of pedagogy

THE MEANING OF SOCIAL AND ENVIRONMENTAL JUSTICE

- A starting point comes from the capability approach of Sen and Nussbaum.
- Sen (2013) has recently argued for an expansion of this idea to take account of the capabilities of future generations and the extent to which this necessitates a concern with environmental protection as inseparable and integral to the realisation of capabilities both now and in the future.
- From Nussbaum we can also recognise the capabilities of other species and from Schlosberg of natural systems.
- Fraser's work also relevant for understanding social and environmental justice and the institutional barriers to enhancing the capabilities of human beings and natural systems
 - Distributive justice including distribution of both resources and environmental risk
 - Recognitional justice including the rights of the historically marginalized as well as of other species and natural systems to flourish
 - Representational justice including the voices of the disadvantaged/ dispossessed and the 'voices' of natural systems.



DEFINING ESD

- Sustainable development can be defined as *socially and environmentally just development that supports the capabilities (i.e. opportunity freedoms) of existing and future generations and of natural systems to flourish.*
- Education for sustainable development is defined as *socially and environmentally just education that facilitates the capabilities of existing and future generations and of natural systems to flourish.*



IMPLICATIONS FOR UNDERSTANDING QUALITY EDUCATION

Inclusion

- How education systems adapt to groups/communities of learners
- Ensuring access to learning opportunities learners (future generations) have reason to value

Relevance

- Relevant learning incorporates *reasoning* to value, including reasoning on behalf of the environment.

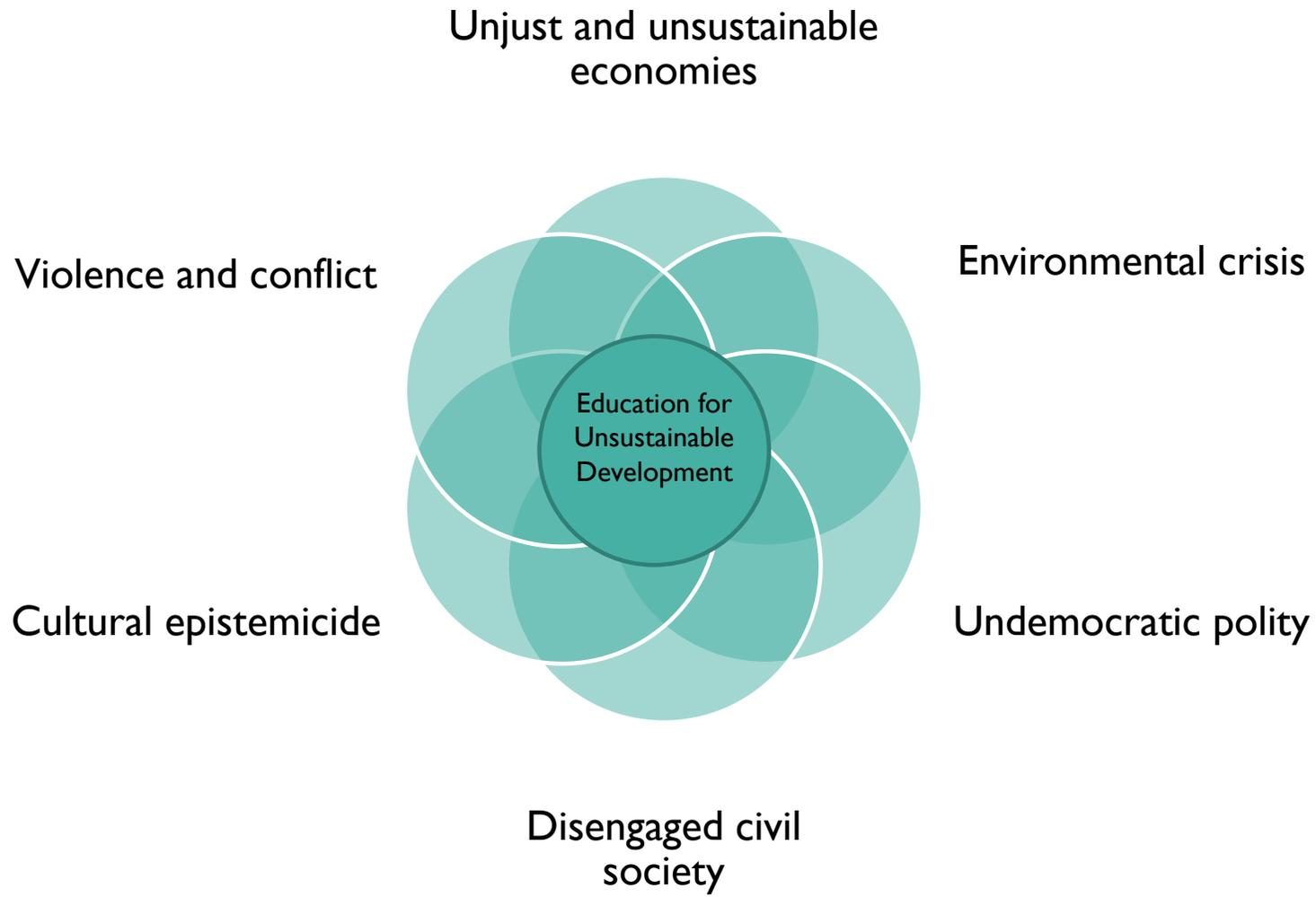
Participation

- Who is entitled to represent collectives/communities?
- Who is entitled to represent the environment?



INCORPORATING SYSTEMS THINKING

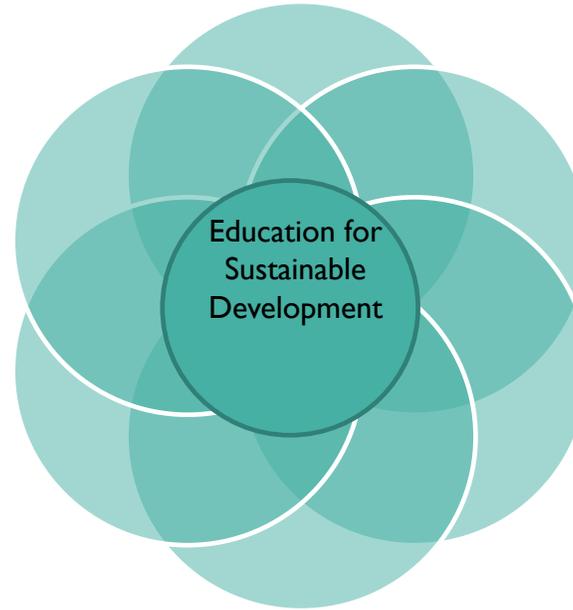
- Engaging with sustainability also invites us to think at a deep ontological level about the nature of complex systems
- Self-organizing, dynamic complex systems include (but not confined to) cells, the brain, the mind, the classroom, school, curriculum, discipline, assessment, teacher training, the education system, different human and environmental domains with which education systems interact, regimes of inequality (Class, race, gender, disability etc).
- Characterised by autopoiesis, unpredictability, positive and negative feedback loops, path dependency, punctuated equilibrium and emergence.
- Similar systems are never identical as they have different conditions of emergence.
- Complex systems co-evolve in relation to other systems including regimes of inequality that constitute the 'fitness landscape'. Can involve relationships of (more or less) positive, negative or critical correspondence.



Just and
sustainable
economies

Peace and
reconciliation

Environmental
protection



Cultural
diversity

Democratic
polity

Vibrant,
engaged civil
society

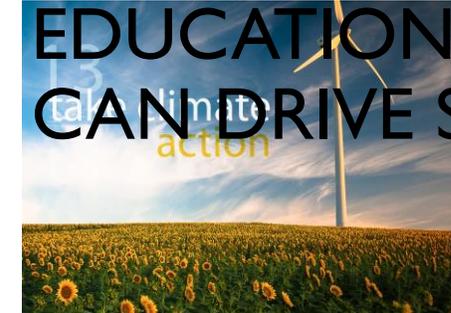
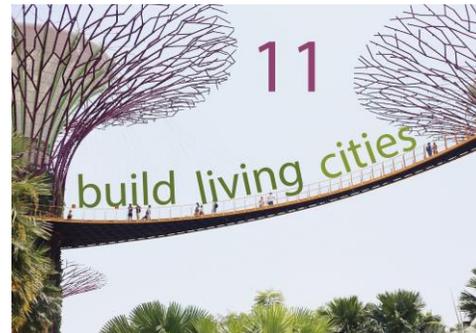
THE 'WICKED PROBLEM' AT THE HEART OF TRANSFORMATIVE CHANGE

HOW DO GOVERNMENTS ADDRESS THE LEARNING CRISIS.....



.....WHILST SIMULTANEOUSLY TRANSFORMING WHAT IS MEANT BY A GOOD QUALITY EDUCATION SO THAT

EDUCATION CAN DRIVE SD?



PRE-COLONIAL EDUCATION FOR SUSTAINABLE DEVELOPMENT

Walter Rodney (1972) describes the following features of pre-colonial African education as 'outstanding':

..... its close links with social life, both in a material and spiritual sense; its collective nature; its many sidedness; and its progressive development in conformity with the successive stages of physical, emotional and mental development of the child. There was no separation of education and productive activity or any division between manual and intellectual education. Altogether, through mainly informal means, pre-colonial education matched the realities of pre-colonial African society and produced well-rounded personalities to fit into that society (Rodney 1973, 262).

SOME STARTING POINTS FOR RECONCEIVING SKILLS

- ESD learning processes change the focus on learning to ‘learning as connection’ and a foregrounding of meaning making in the learning process as basis for efficacy and inclusivity. This requires a wider engagement with different ways of knowing, or inter-epistemological dialogues, and changes in pedagogy.
- ESD learning processes can enhance learners’ capabilities (abilities to express and make choices about valued beings and doings), critical thinking and action competence (abilities to act) and agency (evidence of action). This requires different forms of pedagogy, but it is notable that there is a high level of interest in these forms of pedagogy and these outcomes of education amongst ESD practitioners on the continent. This is because these approaches all foster change or change oriented learning. Pedagogical models exist to support such approaches to learning, and these have been tried out and tested in a number of settings.
- ESD learning processes can enhance relevance of education. This can take place, for example, through various strategies such as including ESD topics in localised curricula and through place-based educational activities or use of local audits. Relevance of education is not simply local, but involves learners in hybrid relationships between the local and the global and in identity formations and negotiating of directions and purposes for engaging in educational activities. ESD learning processes support such initiatives (Lotz-Sisitka et al, 2017: 87-89).



CREATING LEARNING SYSTEMS

- A learning system is one in which a good quality ESD can emerge and that is itself sustainable, i.e. able to adapt and flourish.
- Creating learning systems requires
 - Attention to emergent conditions (no two learners, classrooms or schools are identical);
 - Creating coherence and accountability at different scales of the system;
 - Solving wicked problems through processes of problem-driven, iterative adaptation;
 - Making pragmatic use of different theories and kinds of evidence;
 - Developing creative, reflexive agency of teachers, policy-makers, parents, learners;
 - Encouraging diversity and taking risks;
 - Systems thinking.

TRANSFORMING EDUCATION SYSTEMS FOR SUSTAINABLE DEVELOPMENT (TES4SD)

- GCRF £4.75 million, three years
- India, South Africa, Rwanda, Somalia
- Building capacity to undertake research into ESD
- Commissioning and synthesizing new knowledge
- Takes a systems approach
 - HE and social learning
 - TVET for 'green skills'
 - Schooling for SD