

Food and Climate and Ecological Breakdown

- Global food security and resilience are being challenged by climate change.
- On the one hand agriculture is affected by climate change, but on the other hand it also contributes to climate change
- Agriculture accounts for 26% of the global greenhouse gas emissions (IPCC, 2019), loss in habitat and biodiversity including soil biodiversity.
- Yet food production has to be increased between 25% and 70% to feed a world population of 9.1 billion people in 2050

Circular Economy and Relevance to Africa and Cities

- What is a circular economy? *“A circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems.” (Ellen MacArthur Foundation, 2013)*
- How does it differ from a linear economy? We need to move away from the current economic approach of *“Take-Make-Waste”* which is resulting in non-achievement of SDGs, increasing carbon emissions and adversely impacting the lives and livelihoods of those least able to mitigate and adapt to the consequences.
- Africa has been using circular principles for generations. As new business models and technologies emerge, the opportunities for agriculture, manufacturing and waste management can be harnessed to improve livelihoods and reduce poverty.

Butterfly Diagram

- 1.Design out waste and pollution
- 2.Keep products and materials in use
- 3.Regenerate natural systems.



What is a Food System?

“A food system includes all processes involved in keeping us fed: growing,

Example of a Circular Agricultural System



(Jones et al., 2011)

Case Studies

[Hello Tractor](#) –

Conclusions

- Opportunities for the circular economy in the food systems of African cities are closely tied to the relationship with peri-urban areas that surround the city e.g. post-harvest losses can be reduced at production, handling and consumer stages.
- Agricultural by-products and organic food waste of African cities can be made into new products e.g. conversion of waste from food production and household organic waste into soil conditioner organic fertiliser, insect-based animal feed e.g. brewers' grains and rice husks
- Regenerative farming techniques which mirror natural systems to improve soil health, protect biodiversity, reduce water run-off and increase resilience.
- Create new types of food which are healthier for people and the planet

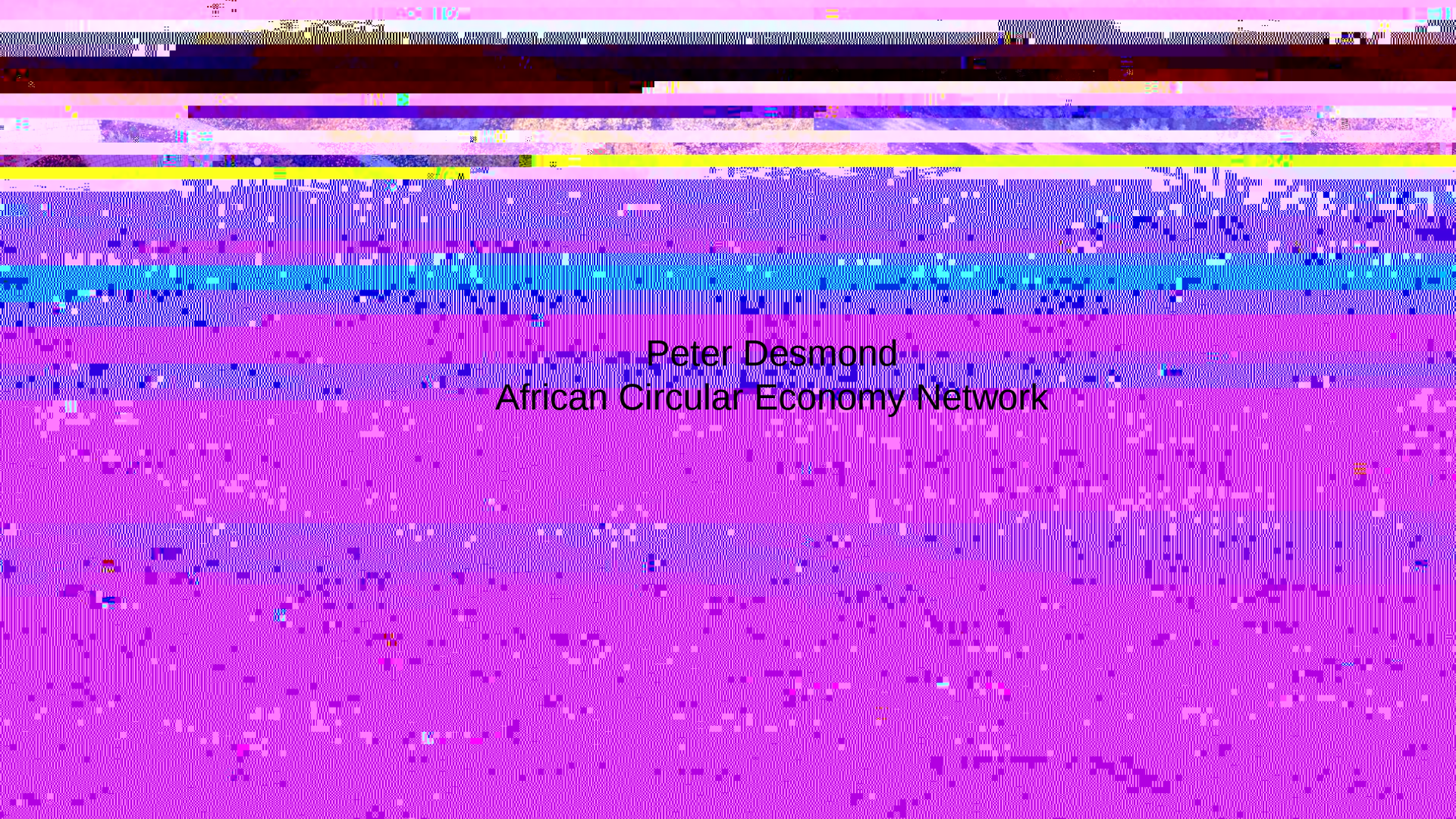
References

Cartwright, A. (2015) “Better Growth, Better Cities: Rethinking and Redirecting Urbanisation in Africa” The New Climate Economy

Farmland Information Center (2008) “Primer on Community Food Systems: Linking Food, Nutrition and Agriculture”

IPCC (2019): “Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems” P.R. Shukla et al.

Jnces

An aerial photograph of a vast, flat, dry landscape, likely a salt flat or a desert. A winding road or path is visible, leading towards a small, isolated building or structure in the distance. The terrain is mostly white and light-colored, with some darker patches and a few small trees or shrubs scattered across the horizon.

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