

Economic Transformation, Local Economic Development & Frugal Innovation

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Outline

- Economic transformation: old & new expectations
- Technological revolution and how frugal innovations can help to dynamize LED
- Adapting new technologies to LED realities
- Policy implications

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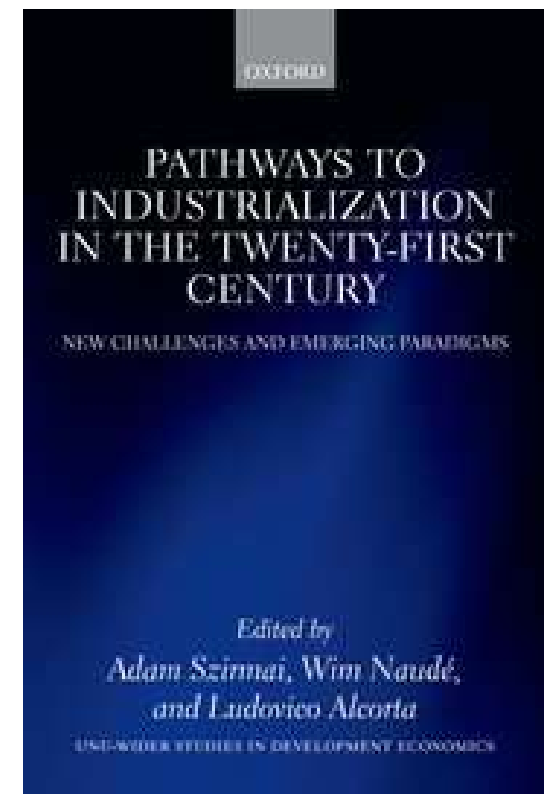


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Economic Transformation & Industrialization

- ‘Old’: Industrialization as a planned process, state in driving seat, get ‘engine of growth’ running, first grow & clean up later, neglect informal sector
- ‘New’: Industrialization as experimentation, business in driving seat, state as facilitator, ‘green transformation’



Three basic industrial policy models

- Import Substitution
- Export Promotion
- Vertically Specialized Industrialization
 - (Global) value chains, upgrading within chains, productivity enhancement & value addition in agro-food & manufacturing chains

Economic Transformation in 21st Century

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- Economic transformation was already a major challenge: now also need to include focus on ‘green transformation’, ‘decent work’, etc, while competition has dramatically increased



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A demanding context



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And then, on top of that, also a technological revolution

- Why and how is this important for LED in Tanzania?
- Not the fancy highest tech, but affordable applications with high functionality and careful resource use = **Frugal innovation**
- First, a few basics on the present 4th IR

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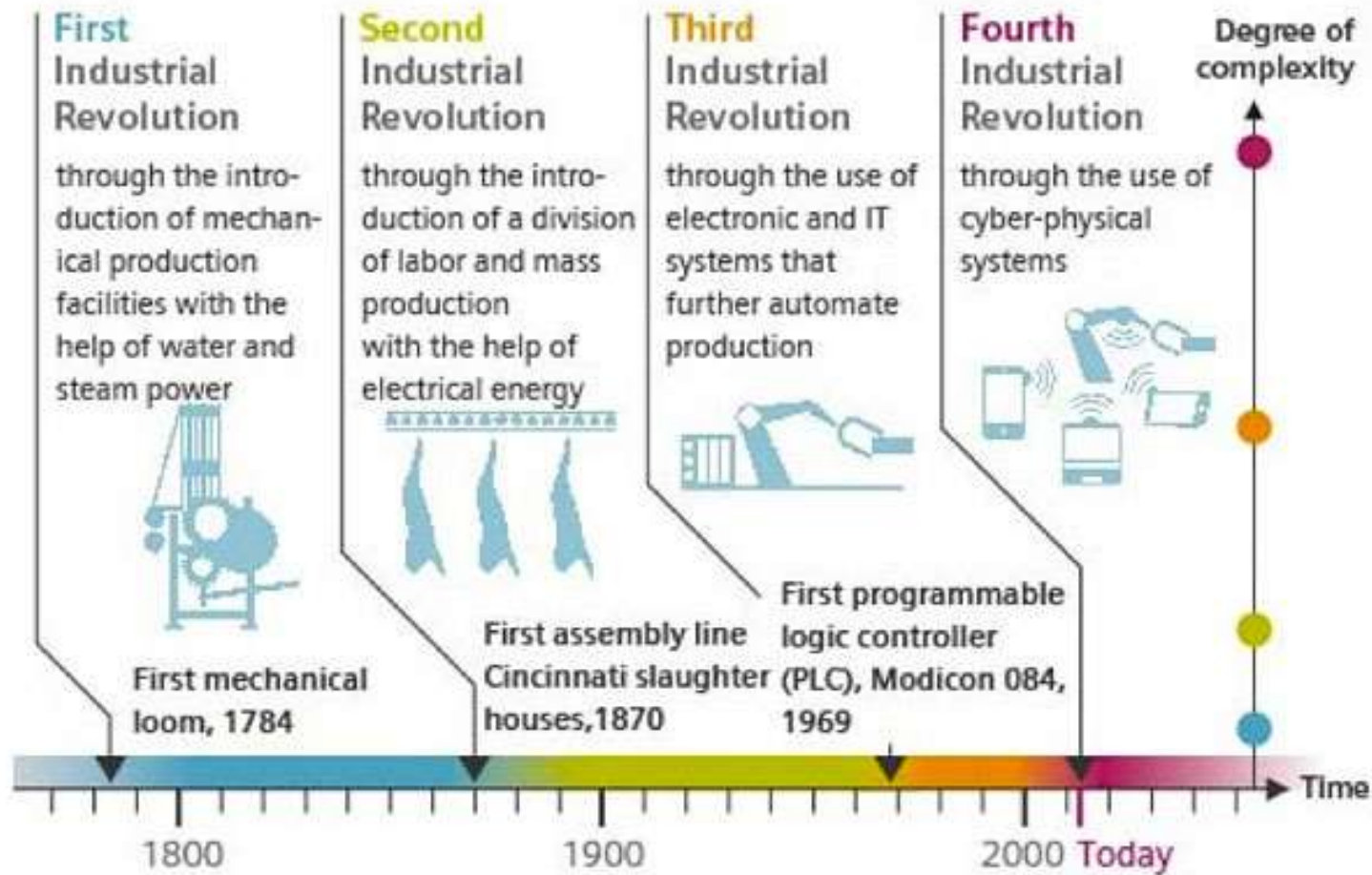
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4th Industrial Revolution



4th Industrial Revolution

Internet of Things, Artificial Intelligence

New energy sources, 3D printing, Fin Tech

New technologies offer opportunities for innovation at lower cost and smaller scale: **Frugal innovations**



FRUGAL

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- Sparing, thrifty
- Careful and diligent in the use of resources
- Low cost & high functionality
- Increasing new attention for frugality, but this is a 'come-back'



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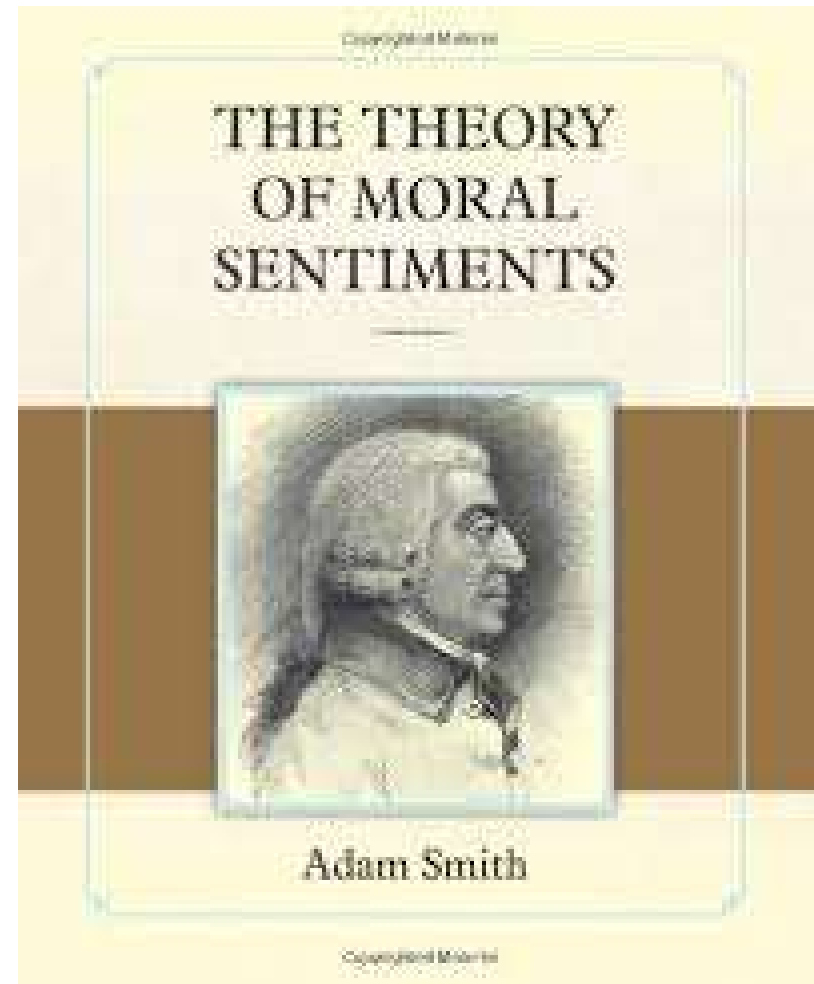
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Adam Smith (1723-1790)

“Frugality is important in the process of producing economic wealth, to avoid a destructive cycle of commerce, leisure, luxury and corruption’

In: An Inquiry into the Nature and Causes of the Wealth of Nations, he uses ‘frugal’ or ‘frugality’ 37 times.





Example in Health

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- Portable electrocardiogram developed for rural areas in India, now also used by GP in US

General Electric, Portable electrocardiogram (ECG)



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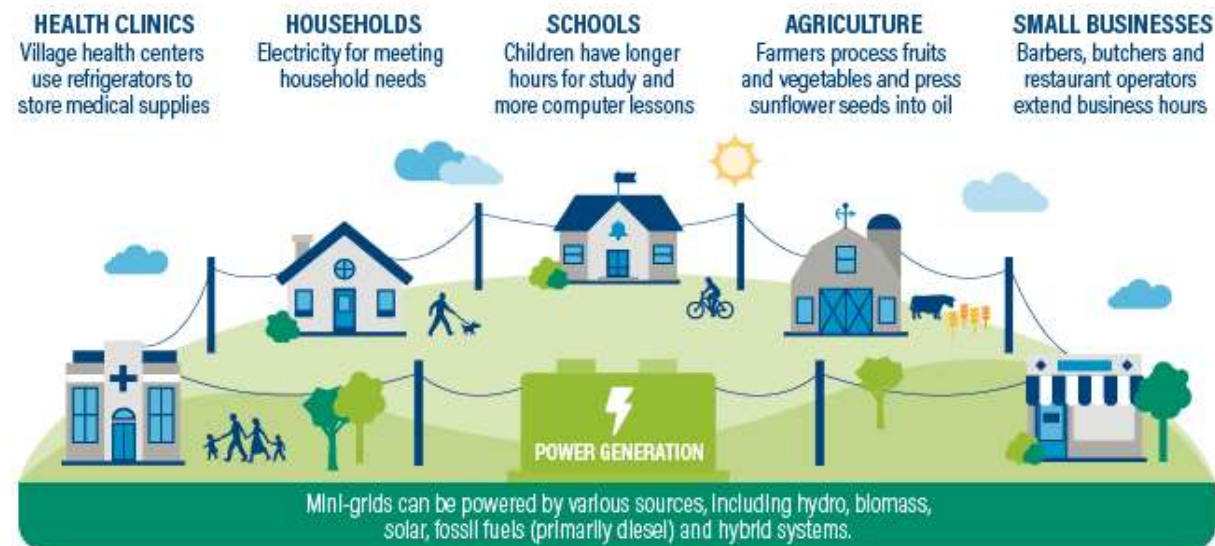
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Example of mini-grid solar energy or water provision

Delivering Electricity Through Mini-grids

Mini-grids are electrical generation and distribution systems of less than 10 megawatts (MW) that serve customers through local distribution networks.




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#energyaccess
wri.org/tanzania-mini-grids

 WORLD RESOURCES INSTITUTE

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Robust, simple local weather stations

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The Erasmus University logo, featuring the word 'Erasmus' in a stylized, cursive script.

Example from agriculture: Power tiller in Tanzania



Frugal Innovation & LED

- No inventions, creative new applications of existing new and older technologies
- Dynamize LED interventions: re-think how existing local practices can benefit from linking up to new and older technologies
- Bottom-up building on local expertise and experience, and selectively match this with newer technologies to enhance productivity



Policy Implications & Conclusion (1)

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- Diversify and upgrade technological capabilities while developing and applying frugal innovations for productivity enhancements
- Combine 'local' knowledges with 'new' technologies, adaptive learning while using frugal, functional, affordable technologies and innovative business models



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Policy Implications & Conclusion (2)

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- Unique opportunity for policy makers: for first time in history, we know we are in the midst of a technological revolution
- How to selectively stimulate usage of new technologies that will enhance economic transformation and more inclusive and sustainable Local Economic Development?



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