

100 Years of Research on Climate Adaptation

Studium Generale lecture

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13 March 2018

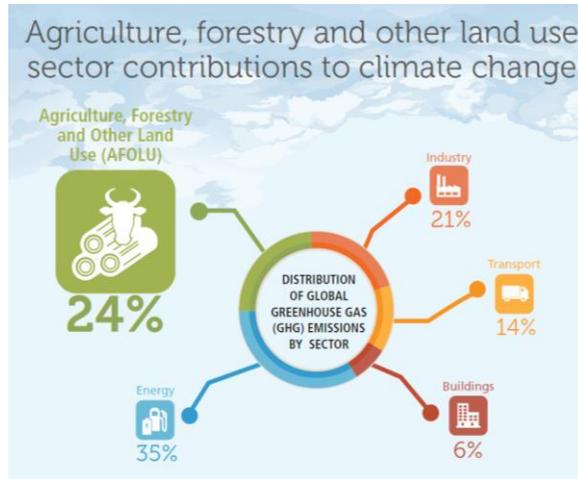


This lecture

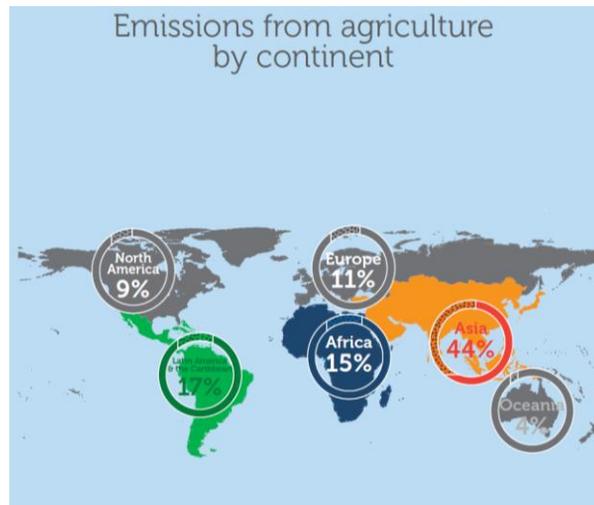
- Climate change and agriculture; daunting figures
- Research on climate adaptation at WUR
- A note on perspectives
- What history can contribute



Climate change and agriculture



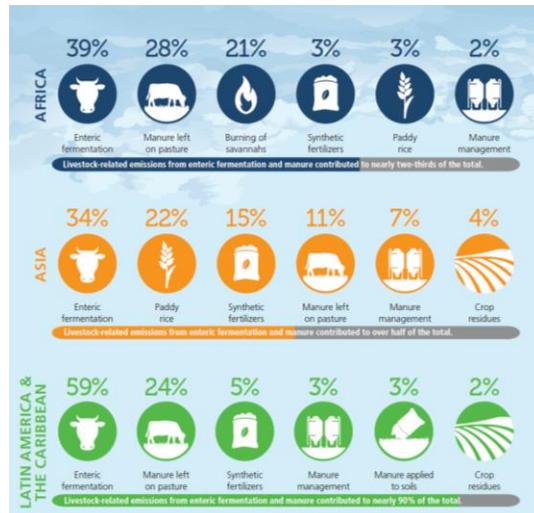
Climate change and agriculture



Climate change and agriculture



Climate change and agriculture



Climate change and agriculture

- The figures are daunting but seem to point in a clear direction
 - Global reduction of (emissions from) livestock production
 - Targeted reduction in other places (savannah burning in Africa, rice in Asia, etc)
- However, the figures are static and do not show
 - Trade-offs between sectors
 - Trade-offs between areas
 - Differences in opportunities



Research on climate adaptation at WUR

- CC is major theme in WUR's strategic plan
 - Addressing a wide variety of topics
 - Largely within the global agreements (IPCC, Paris)



Research on climate adaptation at WUR

WAGENINGEN UNIVERSITY & RESEARCH 100years 1863-2018

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Climate change

The climate is changing constantly: volcano eruptions and forest fires have a big influence on the CO2 levels in the atmosphere. Until 1950, natural causes were the most influential factors on climate change. After 1950, the course of the average world temperature can only be explained by accounting for human influences.

The average world temperature rises due to the increase in greenhouse gasses, but there are also other effects of climate

“ Climate is a prime topic of cognitive dissonance: everybody wishes that it dissolves itself, without doing much for the present. ”

Louise O. Fresco

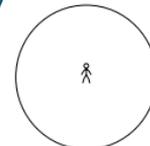
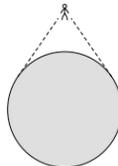
Wageningen statement: Wageningen Climate Solutions

- more knowledge about CC, effects and potential solutions (to resolve people's "cognitive dissonance")
- Is there a 'cognitive dissonance' in science and policy?

A note on perspectives

- **Ecomodernist view**
 - Seeing the world as a globe (expert-outsider)
 - Progressive move towards more control
 - Decoupling
 - Agriculture|nature
 - People|nature
- **Anthropocentric view**
 - Seeing the world as diverse lifeworlds (participant)
 - Progress is dealing with contradictions and conflicts
 - Moving purposefully within nature's realm
 - Agro-ecology
 - Resilience

See for example:
<http://www.ecomodernism.org/manifesto-english/>



See for example:
<http://dark-mountain.net/blog/dark-thoughts-on-ecomodernism-2/>

What history can contribute

- Key issues that require an answer from history
 - Origins of today's farming systems
 - Interactions between nature and agriculture
 - Historical indicators of climate effects
 - Key players and geopolitical context
 - Role of major public and private actors
 - Responses from (local) farmers
 - Role of science

How history of agriculture is present in climate issues today

- For example smog in Delhi



The changing landscape of Punjab

- Early and gradual change by water management (13th - 18th century)
 - from pastoral lands to farm lands through water management
- Accelerated change under British rule (19th-mid 20th century)
 - Clearing forest, introducing tube wells
 - Rice intensification
- Further intensification by Green Revolution (late 20th century)
 - Wheat-rice, double cropping, fertiliser



The changing landscape of Punjab

- The agro-ecological changes implied immense social changes
 - Population growth
 - Migration
 - Urbanization
 - Poverty
 - Diseases

...and yes, also more food

Source: Minsky, 2015

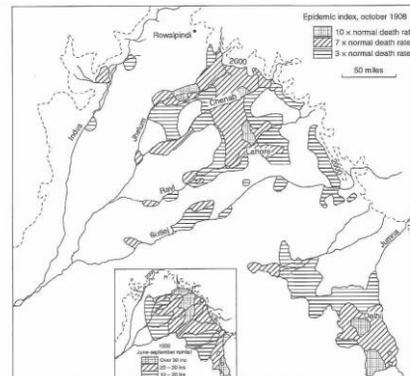


FIGURE 11.1. Death rates during the 1908 Malaria epidemic in Punjab, after S. R. Christopher's (1911) Maps I and IV, in A. T. A. Learmonth, "Some Contrasts in the Regional Geography of Malaria in India and Pakistan," in *Transactions and Papers (Institute of British Geographers)*, No. 23, (1957).

The Dutch and WUR in global agrarian transformations

- Similar transformations in colonial Indonesia
- For example Sumatra
 - Booming plantation sector from 1870s
 - Labour migrants
 - Chinese, Malayan but mostly from Java
 - Population growth in SE-Sumatra from 150,000 in 1880 to 1.5 million in 1930



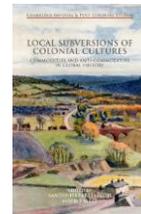
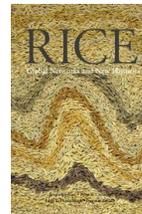
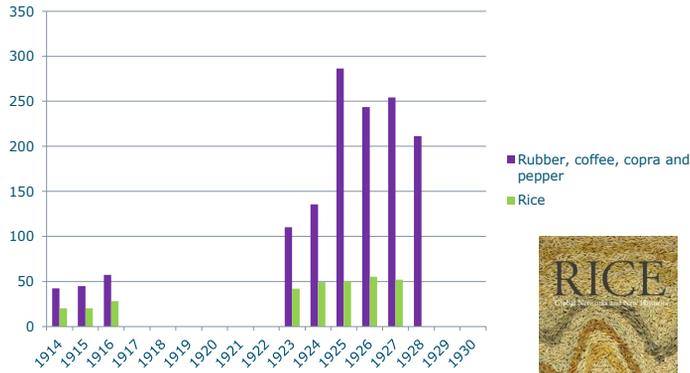
The role of WUR in global history



- Wageningen trained the agronomists and researchers
 - for the plantation sector (cash crops)
 - and public sector (food crops)

Transforming smallholder farming in Sumatra

Value of indigenous exports compared to rice imports for Sumatra (in million guilders)



Source: Maat 2015; 2016

Transforming the coastal zone of Suriname

- Reviving the plantation economy of Suriname

Number of contract labourers from India between 1838 and 1918 moved to



Br. Guiana	238,909
Trinidad	143,939
Jamaica	36,412
Suriname	34,304
St. Lucia	4,354
Grenada	3,200
St. Vincent	2,472



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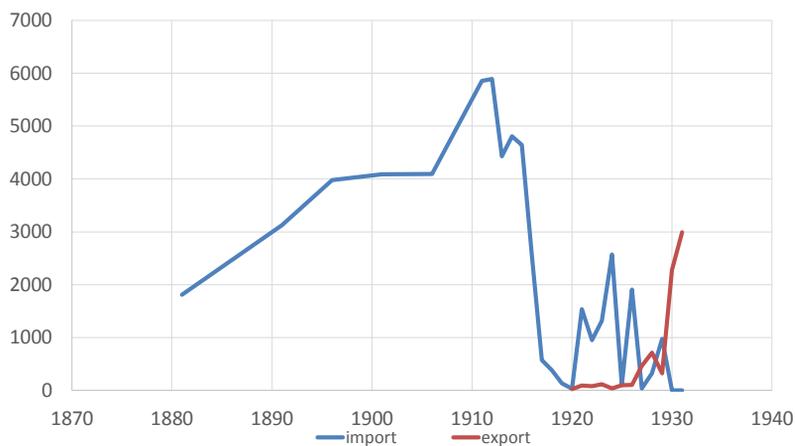
Transforming the coastal zone of Suriname

- Contract labourers from Java and India started lowland (wet) cultivation
- Turned into mechanized rice schemes by the colonial government after 1950



Transforming the coastal zone of Suriname

Rice import and export in Suriname, 1880-1930



What does this have to do with WUR research on climate change?

- CC effects of agriculture are largely and effect of
 - Major transformations of agro-ecological landscapes
 - Involving major movements of crops and people (social transformations)
 - Set in motion in the context of colonialism
 - Research and policy cooperated in realising these transformations

.....the effects of which we now face and try to change again.

100 Years of Research on Climate Adaptation and still counting

- Some lessons
 - How do “Climate solutions” incorporate past and ongoing transformations?
 - Are technical solutions sufficiently anticipating social causes and effects?
 - Contradictions and conflicts?
 - Global and national inequalities?
 - History can help to answer, perhaps even inspire new solutions



...and let's avoid 'cognitive dissonance' of science

*Thank you for
your
attention!*