

# What is good about multifunctional landscapes in terms of food production and security?

Gert Nyberg, Swedish University of Agricultural Sciences/Luleå University of Technology

Eskil Mattsson, University of Gothenburg

Agriculture for Food Security 2030

# AgriFoSe

– translating science into policy and development



## Setup of literature studies

The work we will do consists of three different examples of multifunctional landscapes, namely:

1. Parklands in West Africa
2. Enclosure systems in drylands Africa
3. Homegardens in Sri Lanka



Agriculture for Food Security 2030

# AgriFoSe

– translating science into policy and development



# Systematic review of enclosure systems in dryland Africa

Search string:

enclosures OR exclosures AND  
dryland OR semi-arid AND Africa

Web of Science, Scopus +  
*backtracking* and first 100 on Google  
Scholar => 226 abstracts

Some kind of quantification or  
comparision and/or addressing policy  
or tenure => 98

+ *policy documents and grey literature*  
(*CGspace and FAO*) => *around 100*  
*more*



Agriculture for Food Security 2030

# AgriFoSe

– translating science into policy and development



LUND UNIVERSITY



SLU



SEI



UNIVERSITY OF  
GOTHENBURG

# Preliminary observations

- Enclosures are very common development when population increases; ”default development”

## Divide/contradiction:

- Natural science; quantified ”produce”

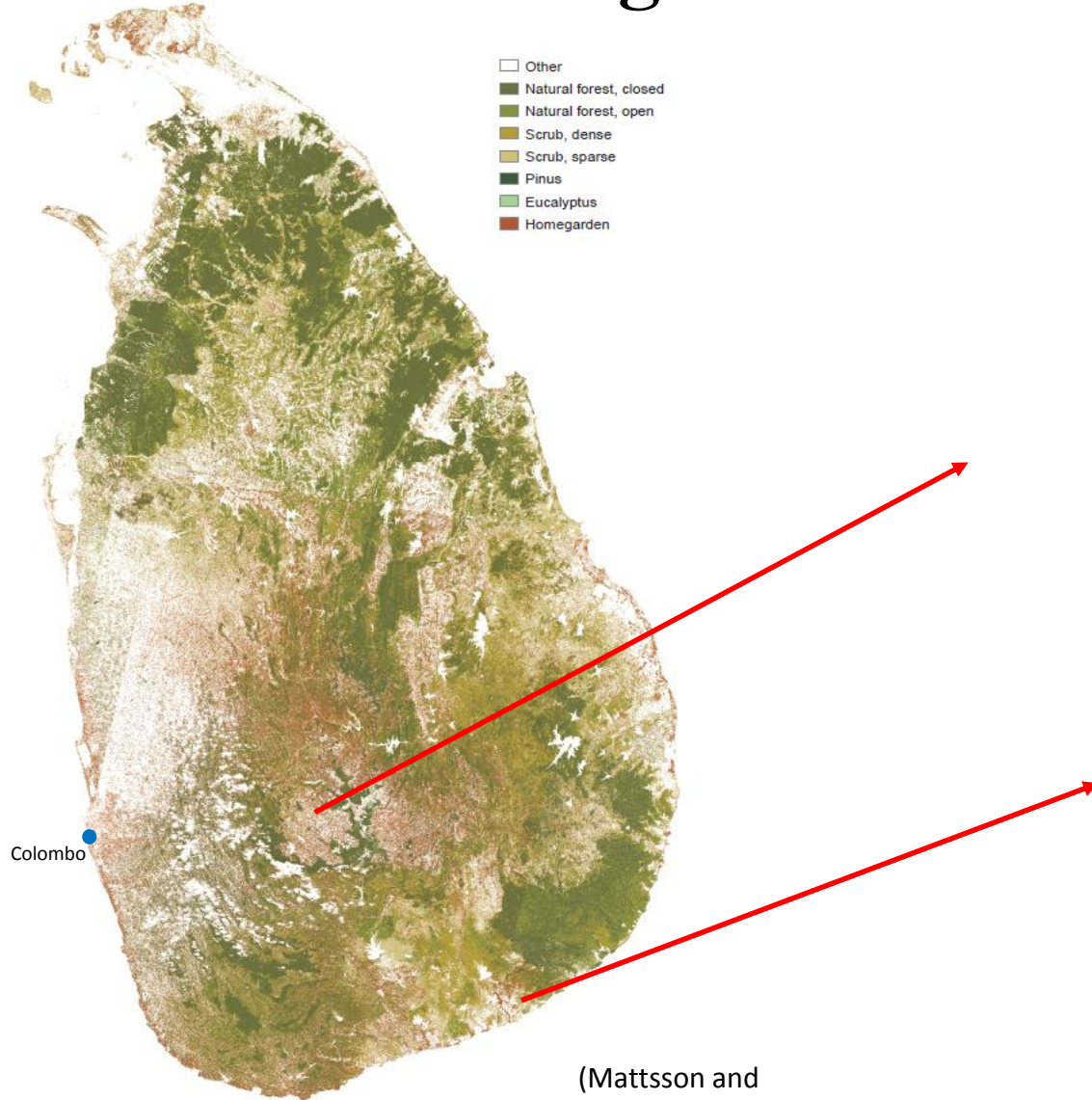
*e.g. biodiversity, soil carbon, erosion, trees, rehabilitation*

- Social science; obstructing livelihoods

*e.g. fragmentation of landscapes disabling free movements*

- Very few articles (almost nothing) on active management for food or livestock production.

# Sri Lankan homegardens



Wet-zone homegarden



Dry-zone homegarden

# Systematic review of Sri Lankan homegardens

- 101 peer-reviewed articles selected and screened (55 Web of Science/Scopus), (46 *backtracking* or Google Scholar)
- about 40 grey articles, theses and conference abstracts to be screened

## Most papers focus on:

- 1) biophysical aspects, 2) income and productivity, 3) review of structure and functions 4) role in climate change adaptation

## Little attention to the role of:

- **sustainable intensification, women and youth** or the role of **value chains and markets**
- system sustainability and food security at the **landscape level** through **multi-disciplinary** team approaches
- comparisons with other **land use systems or natural vegetation**

# Preliminary observations – general

- Research studies (since 1973) have contributed to the present understanding of the **structure and functions**
- Lack of **economic and social** sustainability attributes
- many findings are scattered and remain as student reports and abstract publications with limited access for researchers, policy makers and general users - limited details on methodologies used.
- lack of research-policy interaction: policy decisions are made without concrete evidence from the research carried out (e.g., Pushpakumara et al. 2012)

# Preliminary observations – food security

- Analysis of food production and nutrient supply from homegarden products are relatively sparse – number of publications increased since 2012
- Most papers claim that homegardens are **dynamic sustainable food production systems**
- Suggested broad measures/way forward: 1) Utilization protocol of species over space and time 2) Analysis of availability of nutrients of homegarden products 3) increase animal component 4) education 5) policies
- Drivers and trends: Households and communities respond to new drivers of change by simplifying cultivation to more commercial, or abandonment of cultivation – implications for food, ecosystem services and livelihoods?