

**THE VALUE OF POLLINATION  
ECOSYSTEM SERVICES TO  
AGRICULTURE AND  
CONSERVATION**  
*Complexities and current research*

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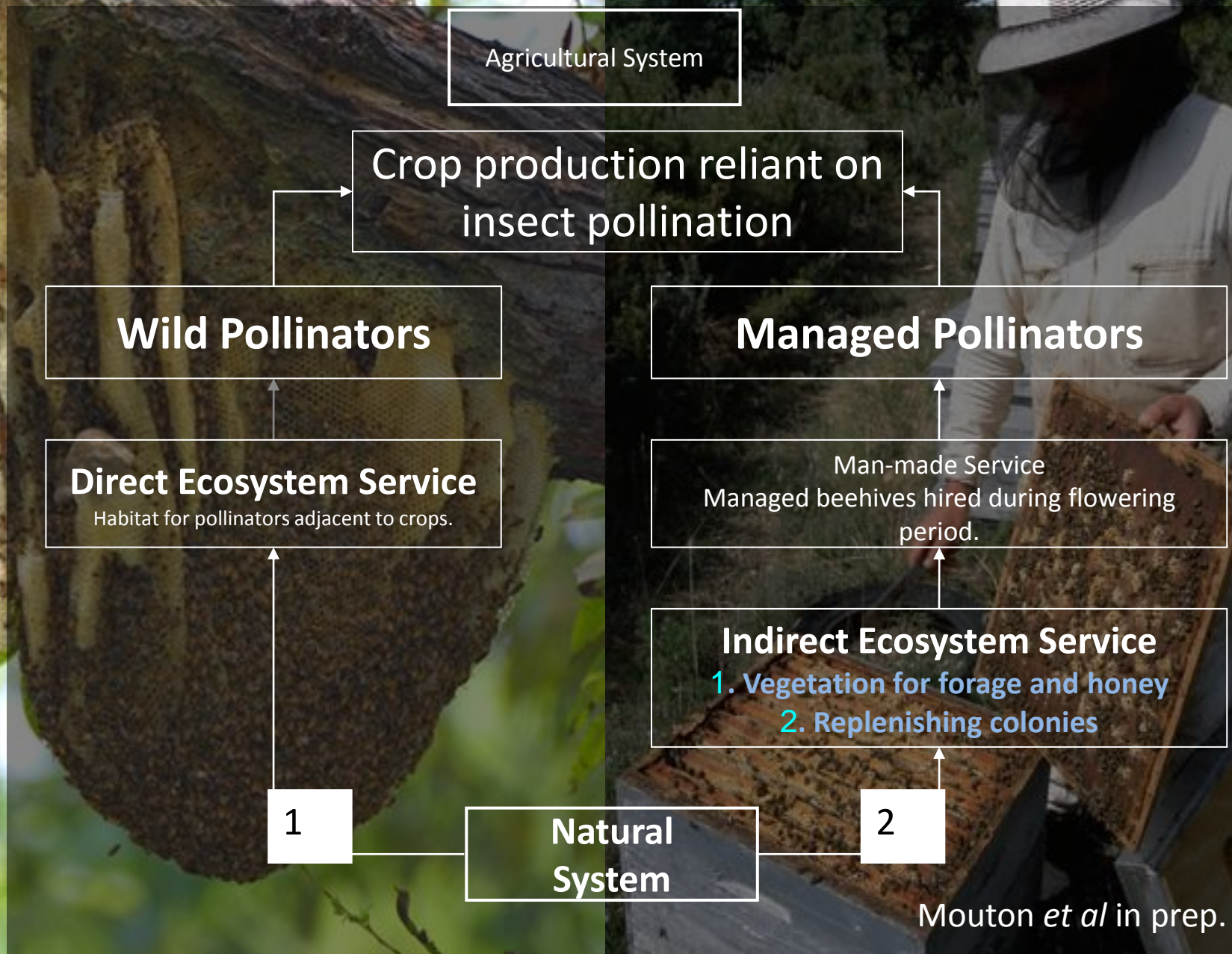
# To understand at the start...



- Research points to problems with pollinators in Europe and N. America. Signs of stress in SA managed pollinators too.
- **Myth** that humans will die if bees die, but our diet would certainly be different!
- Bulk of staple foods are wind-/self-pollinated /vegetative prop.
- About  $\frac{1}{3}$  of our food crops are insect pollinated (50 crops in SA).
- Don't forget: Forage crops, veg seed, flowers, biofuels.
- Don't forget: pure conservation value of pollination of flowering plants: ~83% of Fynbos plants are insect pollinated.
- ***Valuation is important BUT fairly messy***: methods, previous figures, crop prices, market responses, reason for valuing, definitions...

More about pollination-related ecosystem services in SA...

# TWO ECOSYSTEM SERVICES STREAMS



# Valuation methods... ...the real-life complexities

- Direct cost of service (beekeepers) = under estimate
- Proportion of total production value dependent on pollinators = over estimate
- The insect dependent factor... calculated?
- Differences between cultivars – essential vs contribute
- The value of wild vs the value of managed pollinators
- The scale of valuation is important



# Valuation results



- 2008 Gallai *et al*:
  - Total value of insect pollination worldwide = **€153 billion**. 9.5% of value of world production used for human food in 2005.
  - Production value of ton of crop categories dependent on insect pollination average **5x more** than a ton not dependent
- 2008 Allsopp *et al*:
  - WC deciduous fruit total production value from insect pollination = R2.4billion
  - Replacement by dusting ineffective. Replacement values vary significantly due to differences in efficacy and cost of methods

# New Research on Pollination, Crop Agriculture and the Honeybee



## 1. *The Global Pollination Project*

GEF/UNEP/FAO funding 2010 – 2013



- Knowledge base (pollinator status, deficits, agroecosystem)
- Management practices (landscape mgmt plans, case studies)
- Capacity Building (produce material, provide training)
- Public Awareness (policy issues, raise awareness)



Springbok Flats  
sunflowers



Little Karoo  
hybrid onion seed



Elgin / Ceres: apples

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## 2. *The Honeybee Forage Project*

Working for Water funding; 2011-2013

- Relative importance of forage sources
- Spatial data of forage sources
- Alternatives for controversial forage
- Optimal forage management
- Supply and demand of honeybees in SA



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