

# Ecosystem services in food systems



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# Objectives of the lecture

- To introduce the concept of Ecosystem Services (ES)
- To find out how ES contribute to food production and security
- To introduce the farming approaches that contribute to greater biodiversity and food security



# Intended learning outcomes

After the course the students should be able to:

- Understand the principles of ES
- Formulate links between ES and agriculture
- Explain the impact of different farming systems on ES
- Understand the importance of different ES for agriculture, society and environment



# Trends in Ecology & Evolution

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Review

## Ecological intensification: harnessing ecosystem services for food security

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# Why the issue is important?

- Expansion of agriculture around the world
- Larger fields of monoculture crops
- Greater external inputs
- Demands for agricultural productions will continue to increase
- Widespread environmental impacts from conventional agriculture
- Decreased availability of ecosystem services
- Build and protect the ecosystem services on which agriculture depends

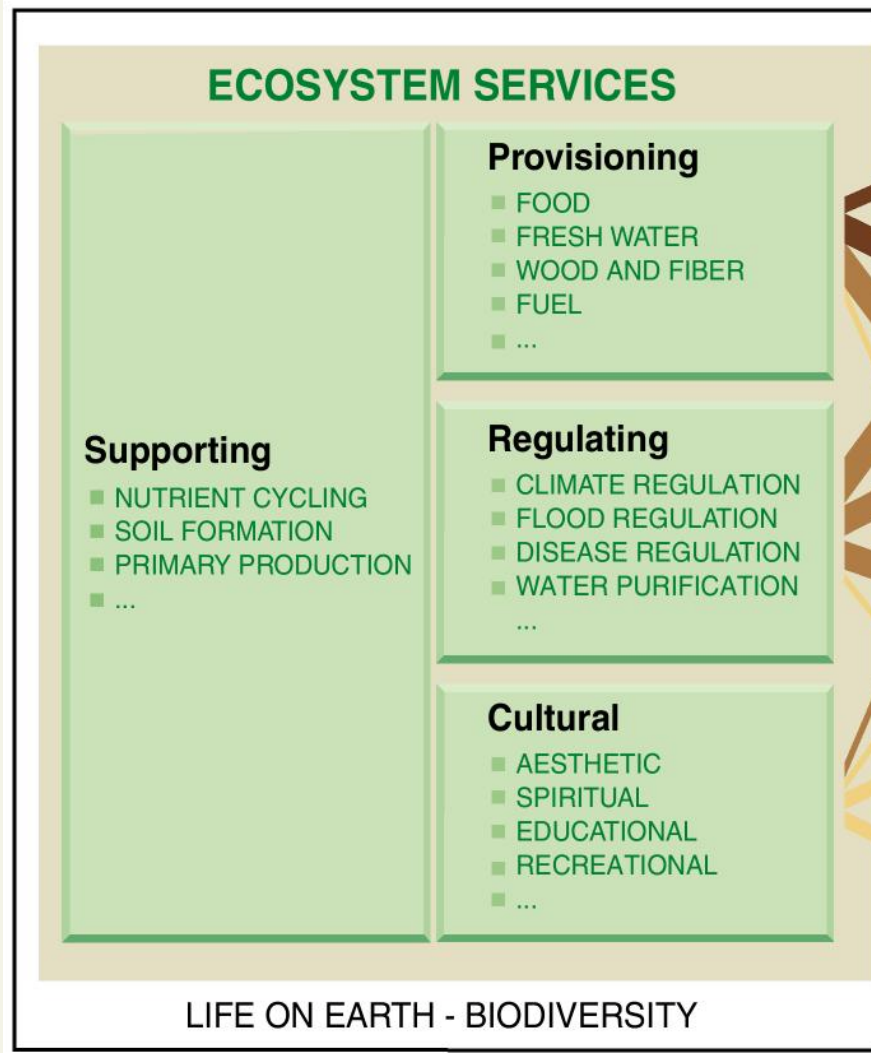


# What are Ecosystem Services (ES)?

The concept of ES links ecology and society:

- **Supporting services**
- **Regulating services**
- **Provisioning services**
- **Cultural services**

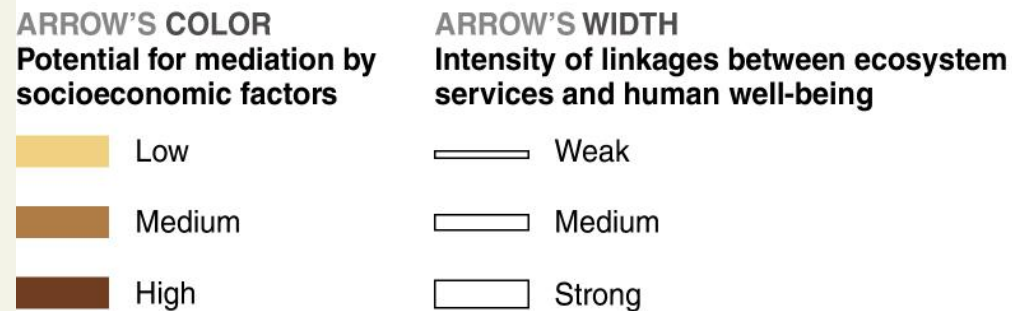




## CONSTITUENTS OF WELL-BEING



Source: Millennium Ecosystem Assessment



(Millennium Ecosystem Assessment, 2005)

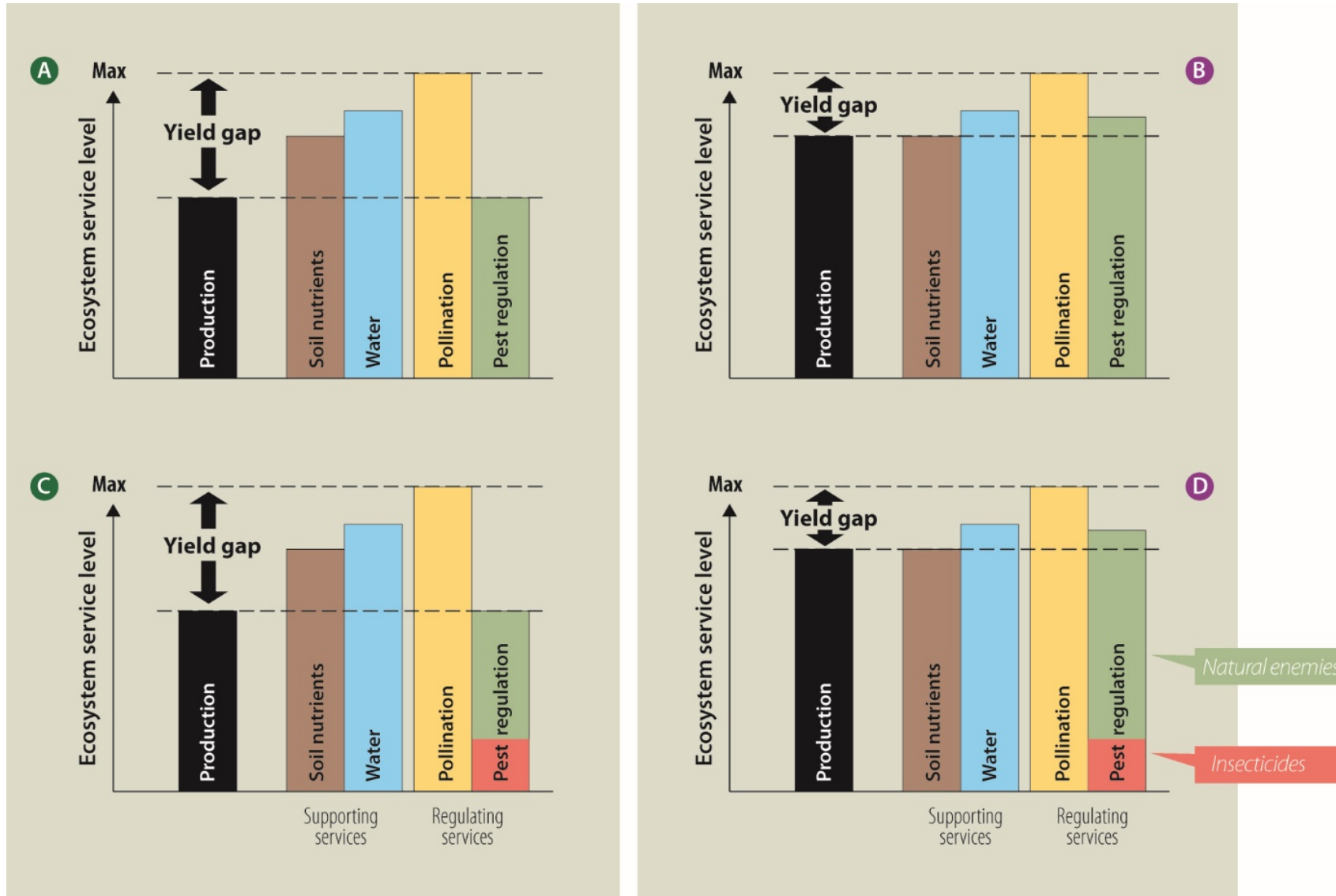
# Ecosystem services – agriculture

- **Supporting services** – soil formation and nutrient cycling
- **Regulating services** – biological pest control, pollination





# Relation between yield and supporting and regulating ES



Modified from Bommarco et al 2013.

Assoc. Prof. Eve Veromann

# Thinking tasks

- Why is biodiversity placed outside the services' classes in Millennium Ecosystem Assessment figure?
- Which practices can reduce the environmental impact of agriculture while potentially enhancing social and economic performance?



# Literature and resources

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# Literature and resources

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**Thank you!**

**See you  
in Poland!**



*Adrena hattorfiana*. Photo: Peeter Veromann

