Faculty of Design

2015

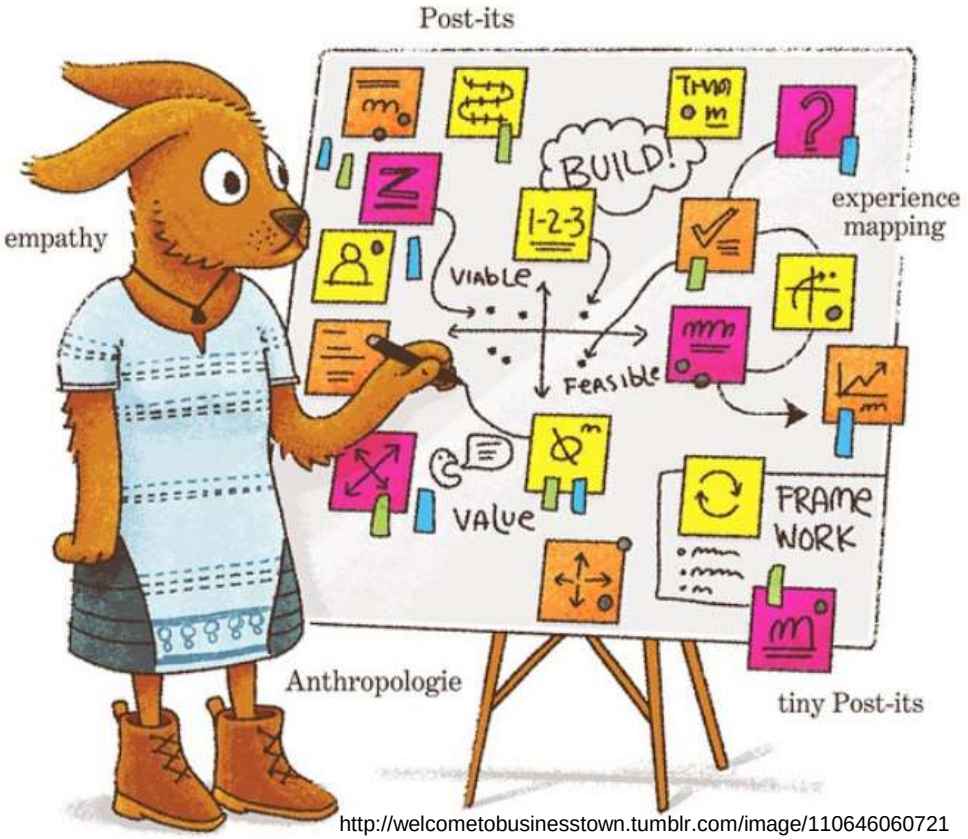
Permaculture as a Systemic Design practice: Contributions, challenges, and new developments

Cassel, John Benjamin

Grounded and Rooted

The Ethics-led Design Systems of Agroecology

John B. Cassel, Agrible



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The Innovation Strategist works with clients to define problems, ideate solutions, and articulate outcomes.

Designers *Discover* Needs

Bariatric Support

Germ Resistance

Easy Cleaning

Breathability

Caregiver Ergonomics

Sittris
http://www.sittris.com/brochures/Sittris_Company_Brochure_2009.pdf.

http://3.bp.blogspot.com/_PFHsbKpt1A4/TKebYgbsfVI/AAAAAAAAAFY/ODAz3X4xlug/s1600/greens_1001.jpg

How?

Don’t stakeholders have their own needs?

http://mediad.publicbroadcasting.net/p/kwmu/files/201310/DorotheaLange_MigrantMother.jpg

Isn’t a neutral perspective required?

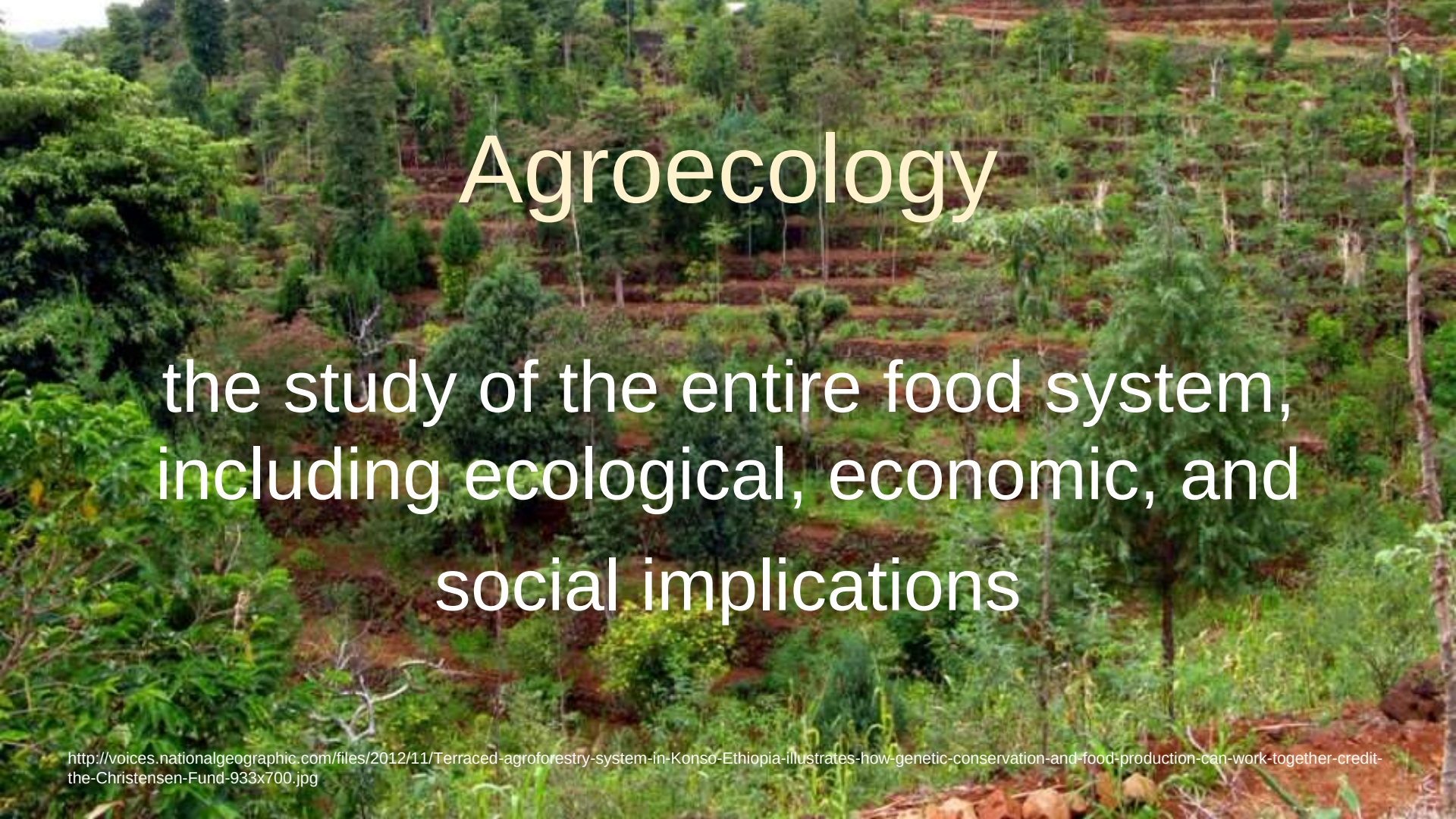
Care for the Flourishing of Life

Reshaiq Bayramli,
https://commons.wikimedia.org/wiki/File:Flower_and_bee.JPG

Who understands life *and* human needs?

Agroecology

the study of the entire food system, including ecological, economic, and social implications



http://voices.nationalgeographic.com/files/2012/11/Terraced-agroforestry-system-in-Konso-Ethiopia-illustrates-how-genetic-conservation-and-food-production-can-work-together-credit-the-Christensen-Fund-933x700.jpg

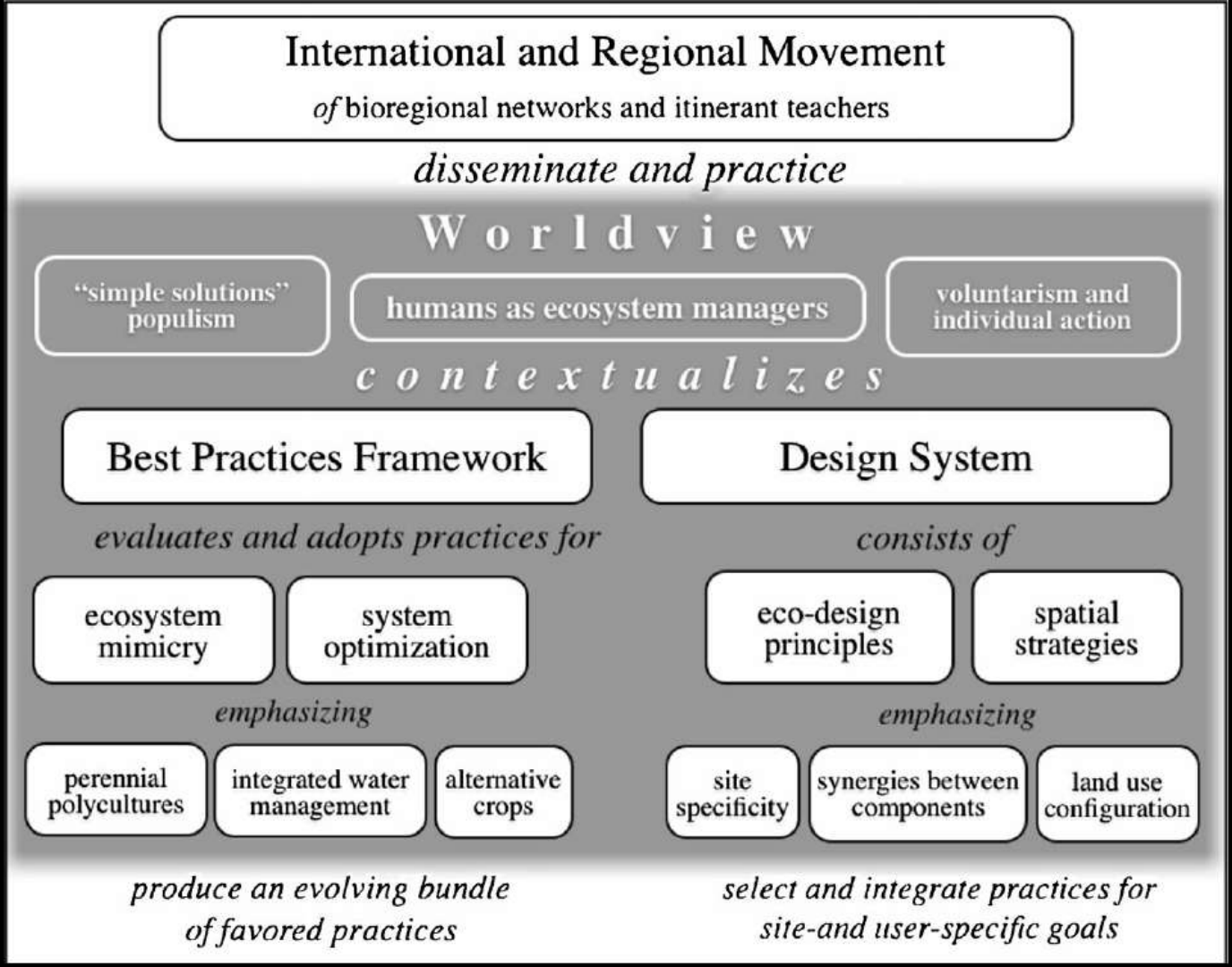
Agroecology studies

1. modern food systems
2. traditional lifeways
3. alternative systems, including agroecological design practices

Agroecological Design Practices

- *Permaculture*
- Holistic Management
- others….

What is Permaculture?



Permaculture for agroecology: design, movement, practice, and worldview. A review

Rafter Sass Ferguson & Sarah Taylor Lovell

Agronomy for Sustain. Development (2014) 34:251–274

DOI 10.1007/s13593-013-0181-6

Permaculture Practitioners are Systems Designers

Same Training
Same Processes
Same Internal Debates
Same Exploration of Boundaries

http://www.insideedgedesign.com/uploads/2/5/3/9/25391493/5476079.jpg

Most Advanced Yet Acceptable (sort of)

What does Permaculture bring to Systems Design?

Permaculture's Contributions to Systems Design

1. An Ethically-Grounded Phenomenological Attention
2. A Combinatorial System Operations Design
3. Many others (not to be covered here)

Contribution

Ethically-Grounded
Phenomenological Attention

“The only ethical decision is to take responsibility for our own existence and that of our children”

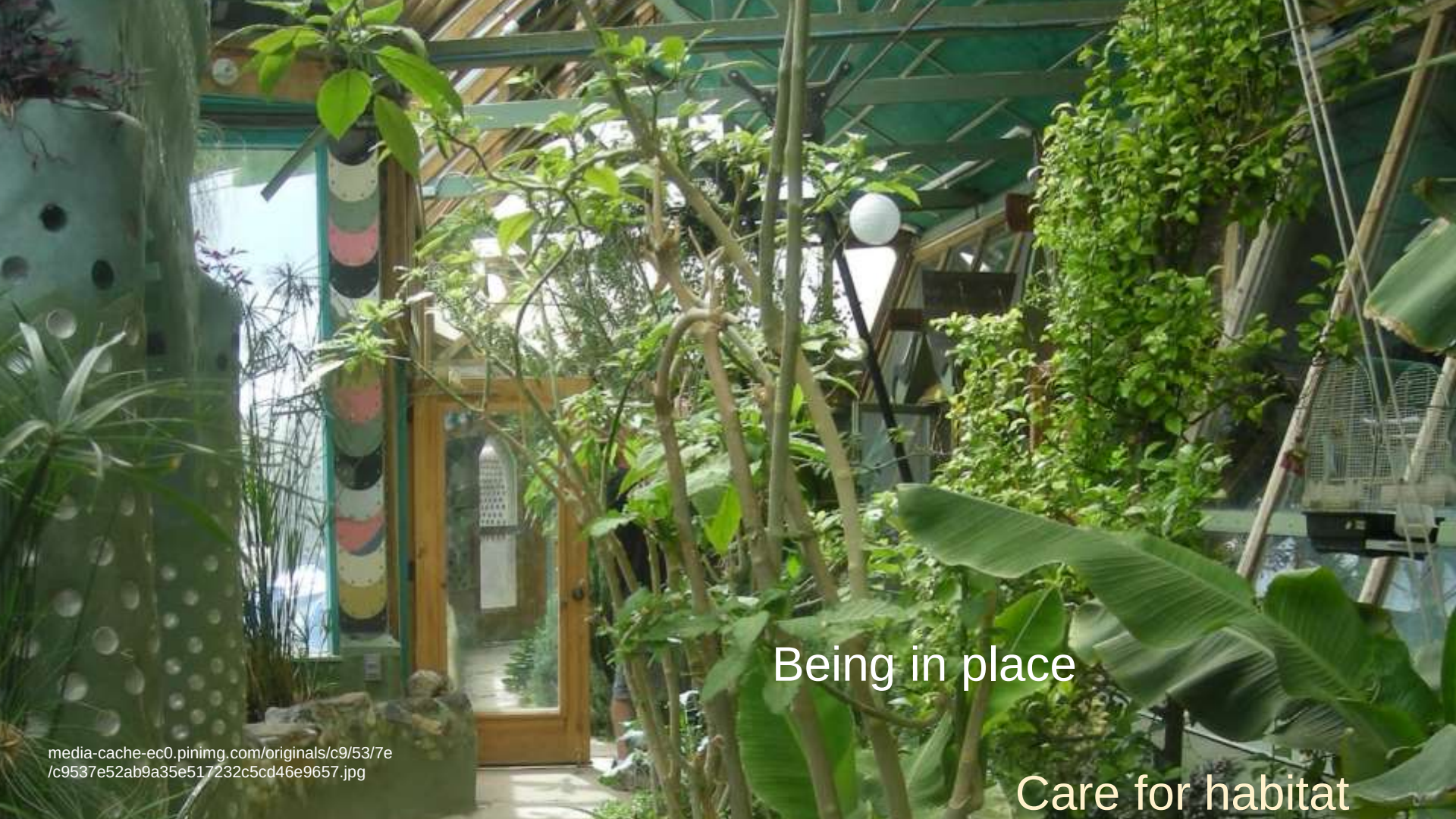
co-originator Bill Mollison in

“*Permaculture: A Designers’ Manual*”

Why is this useful?

Attention to modes of life care implicit in our being

Reshaiq Bayramli,
https://commons.wikimedia.org/wiki/File:Flower_and_bee.JPG



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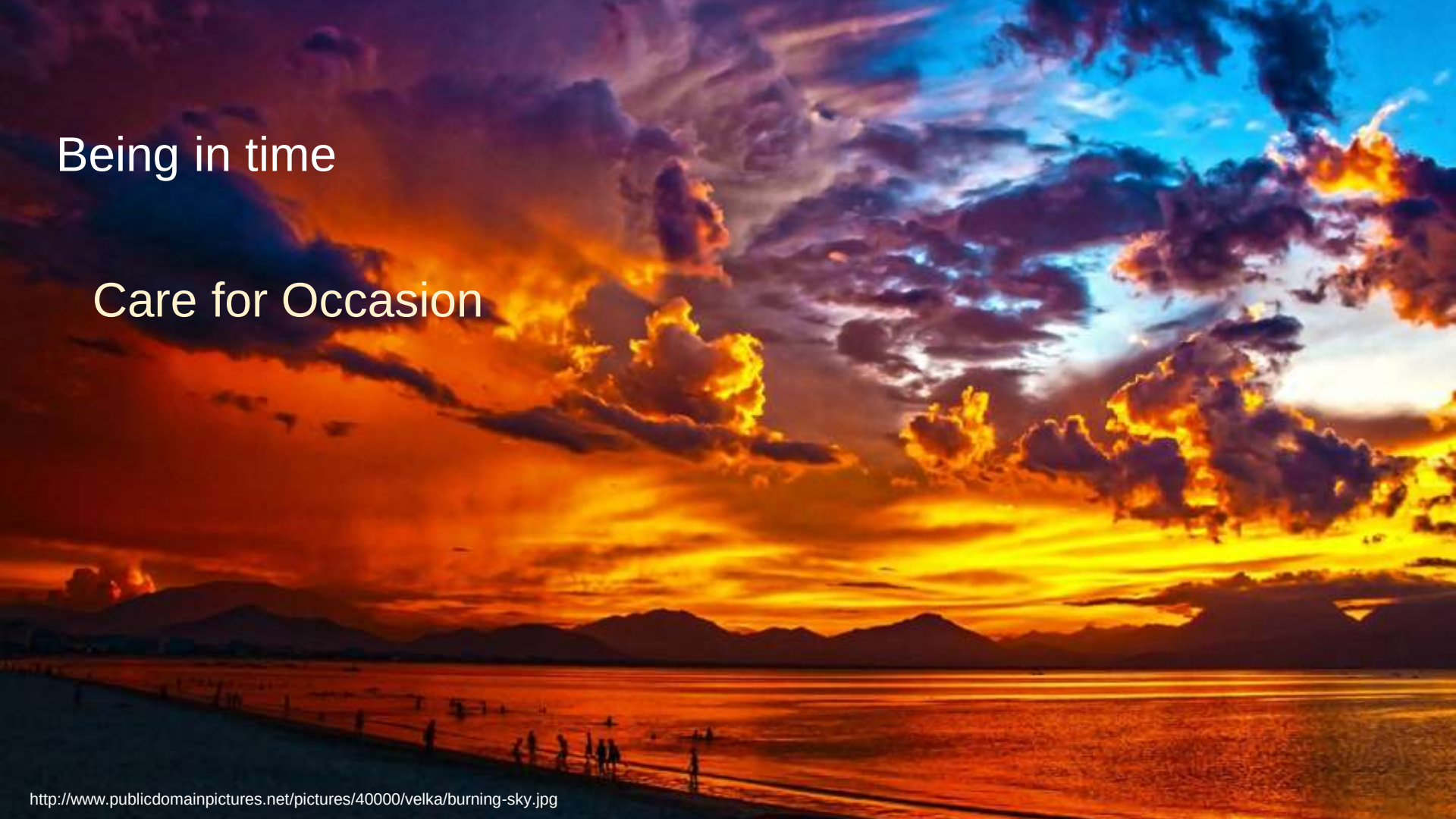


http://www.publicdomainpictures.net/pictures/40000/velka/burning-sky.jpg

http://northeasternpermaculture.wikispaces.com/file/view/sg07_outside_circle.png/30844353/sg07_outside_circle.png

http://res.freestockphotos.biz/pictures/15/15392-a-woman-gardening-outdoors-pv.jpg

Growing and learning

Stewarding development

4b6oalbs7g72s0rl82vpfh3111z-wpengine.netdna-ssl.com/wp-content/themes/permiekids/images/get-started.jpg

http://goodlifepermaculture.com.au/wp-content/uploads/2014/08/PDC_Session3-05.jpg

http://www.arizonabushman.com/wp-content/uploads/Schrade-Axe-Splitting-Wood-2.jpg

https://commons.wikimedia.org/wiki/File:Forest_nature_habitat.jpg

Groundedness and Rootedness

Groundedness: attending to the most phenomenologically rich characterization of basic experiences, needs, and responsibilities.

Rootedness: living a lifeway that facilitates growth of particular grounded ecological and community networks.

Permaculture's Ethical Basis

(in order)

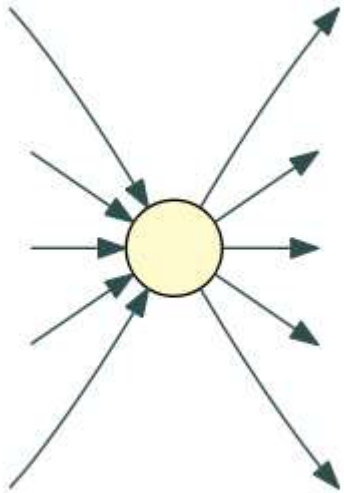
1. Earth care
2. People care
3. Limit population and consumption

Contribution

Combinatorial System
Operations Design

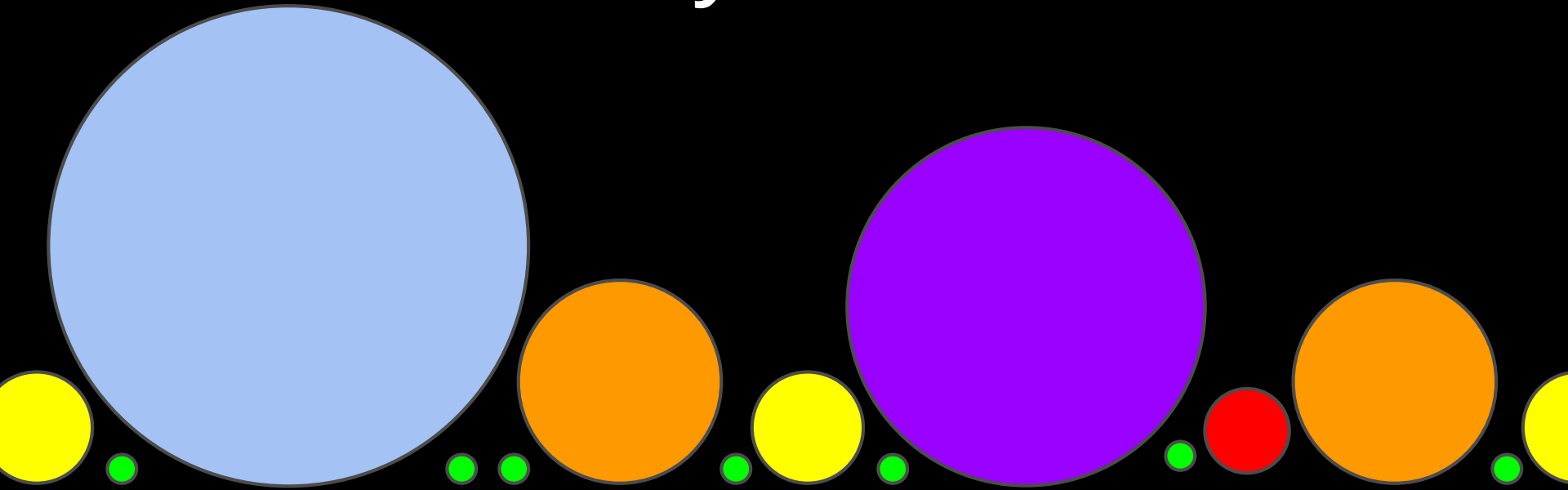
Zones

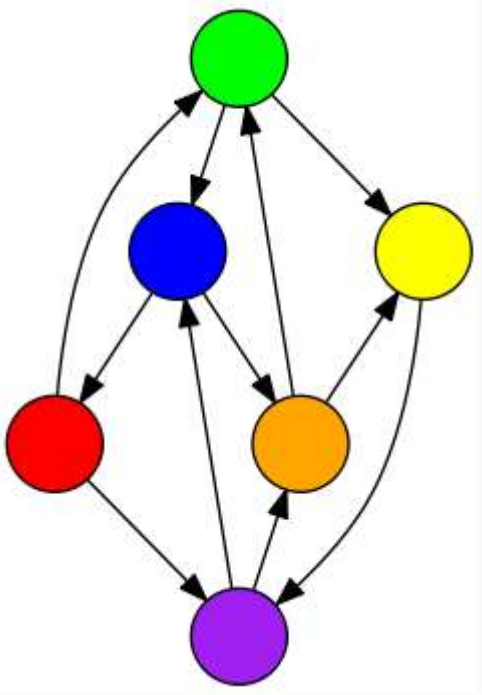
Sectors



Functions and Needs

Layers



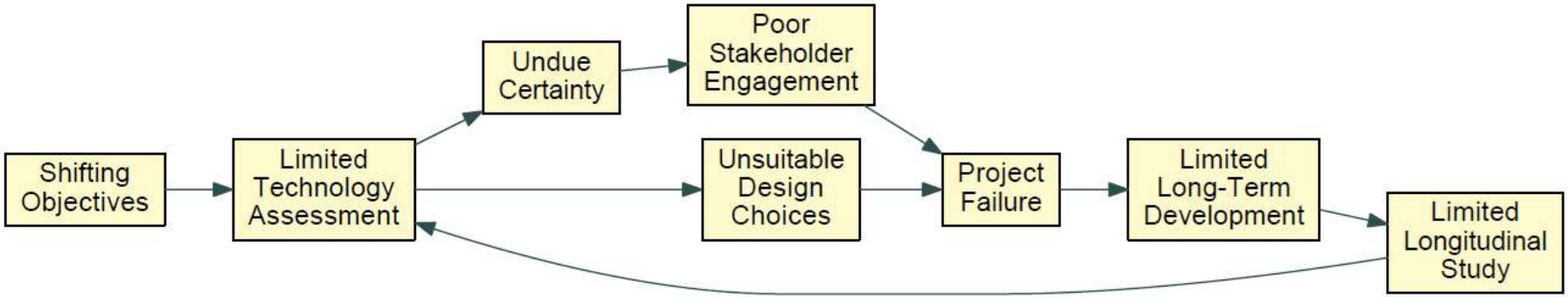


Teams

Put Together:
Patterns to Details

What does Systems Design bring to Permaculture?

Permaculture practitioners are human



Permaculture's Systemic Problems

Systems Design Can Help

Objectives Analysis
Technology Evaluation
Stakeholder Engagement

Need

Objectives Analysis

Why Grand Strategy
What Strategy
How Tactics

A Grounded Grand Strategy

Maximize the sustained flourishing of the resource-renewing cycles in which we participate

Components of Cyclic Flourishing

Foster renewing cycles
Minimize cycle disruption
Minimize external dependencies

What are our links
in these cycles?

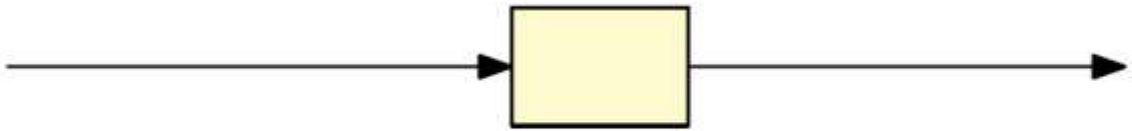
An Agroecological Strategy

Feasible Food/Fuel Ecologies

Nitrous Oxide and Ammonia,
Carbon Dioxide,
Effluent,
'Wastes'
...

Species populations,
Ecosystems,
Preferred Activites,
Regional Culture
and Knowledge,
Energy
...

Average
full-spectrum nutrition,
Water,
Fuel,
Fiber,
Tools
...



Process

Maintain

Produce

Yield Objectives

Net Considerations

per year
per acre
per human hour
per external input
per ....

Amortization

as needed and averaged across:

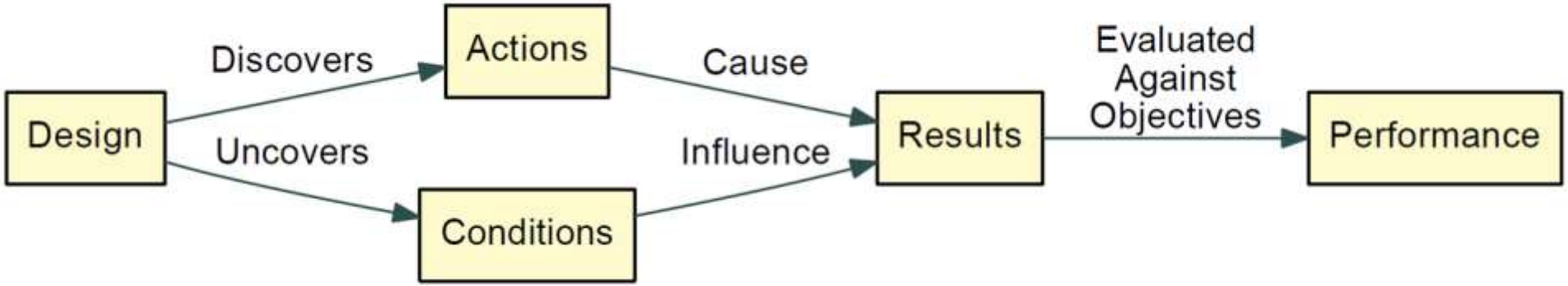
career
lifetime
ecoystem life
living memory
recorded memory
generations

Further work

Tactics (real-life numbers)

Need

Technology Assessment



The Most Basic Engineering Design

Conditions

Climatic
Geographic
Legal
Economic
Logistical
Technological
Cultural

Actions

Plant
Trade
Shape and Reshape
Maintain
Process
Engage
Raise

Further work

Grounded Non-parametric Assessment

Further work

“Useable” Mass Experimental Design

Need

Stakeholder Engagement

Further Work

Juxtaposing Natural and Asserted Responsibilities

Thank you

https://static.pexels.com/photos/909/flowers-garden-colorful-colourful.jpg

Questions?

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john at agrible.com

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