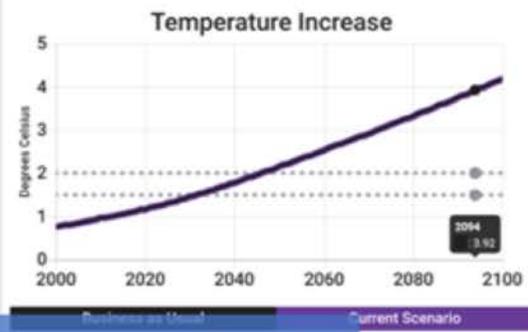
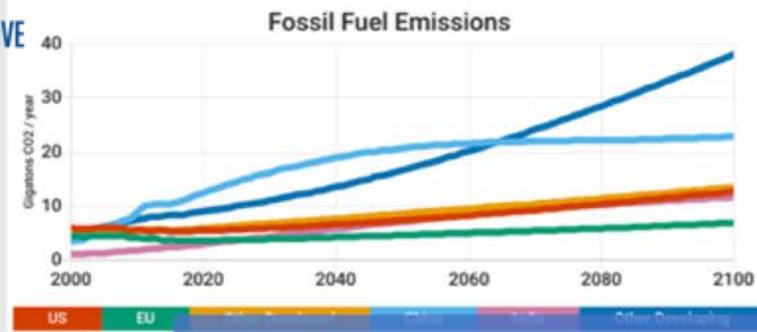


Multisolving climate change, public health, and wellbeing: A framework for bringing win-win solutions into your classroom

Stephanie McCauley and Juliette Rooney-Varga





C-ROADS climate model

	Peak Year	Begin Year	Rate	Deforestation	Afforestation
US	2100	2100	0%	0%	0%
EU	2100	2100	0%	0%	0%
Other Developed	2100	2100	0%	0%	0%
China	2100	2100	0%	0%	0%
India	2100	2100	0%	0%	0%
Other Developing	2100	2100	0%	0%	0%

+4.2°C
Temperature increase by 2100



Climate Scoreboard

Increase in Global Temperature by 2100
Where will proposals from the climate negotiations lead?

- business as usual: 4.2°C (7.6°F)
- national proposals: 3.3°C (6.0°F)
- goals: 1.5°C (2.8°F)

En-ROADS energy model

Sources of Primary Energy

Temperature Change

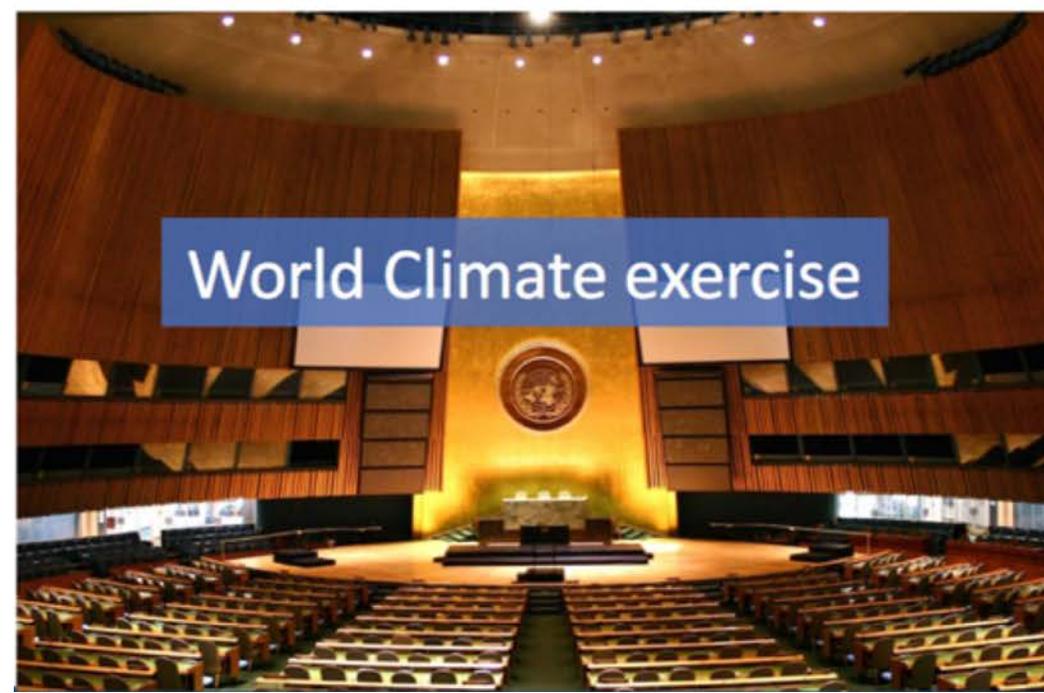
+4.2°C
Temperature Increase by 2100

Energy Supply: Coal, Oil, Gas, Bioenergy, Renewables, Nuclear, New Technology

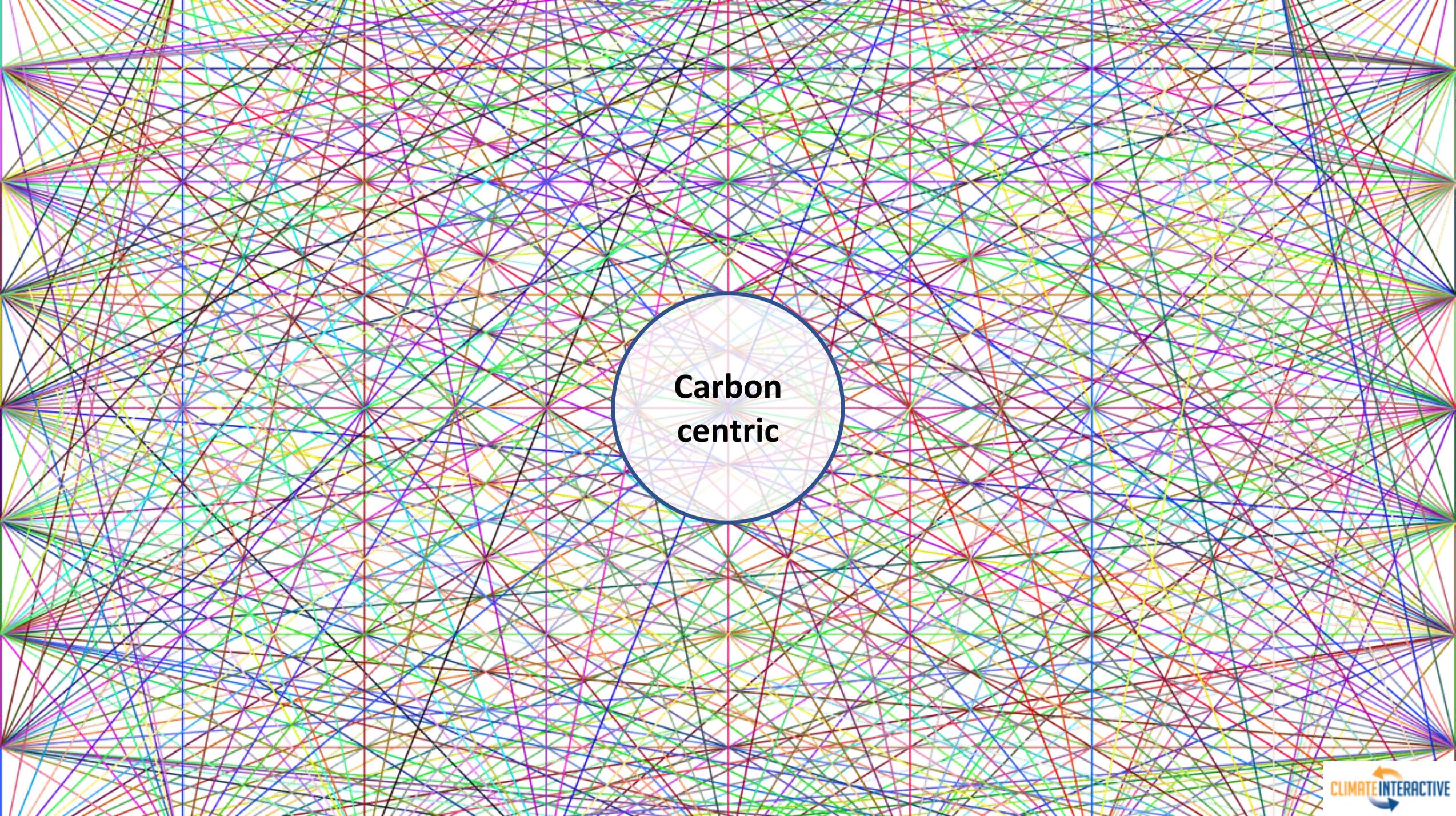
Transport: Energy Efficiency, Electrification

Land and Industry Emissions: Deforestation, Methane & Other Gases, Buildings and Industry, Carbon Removal

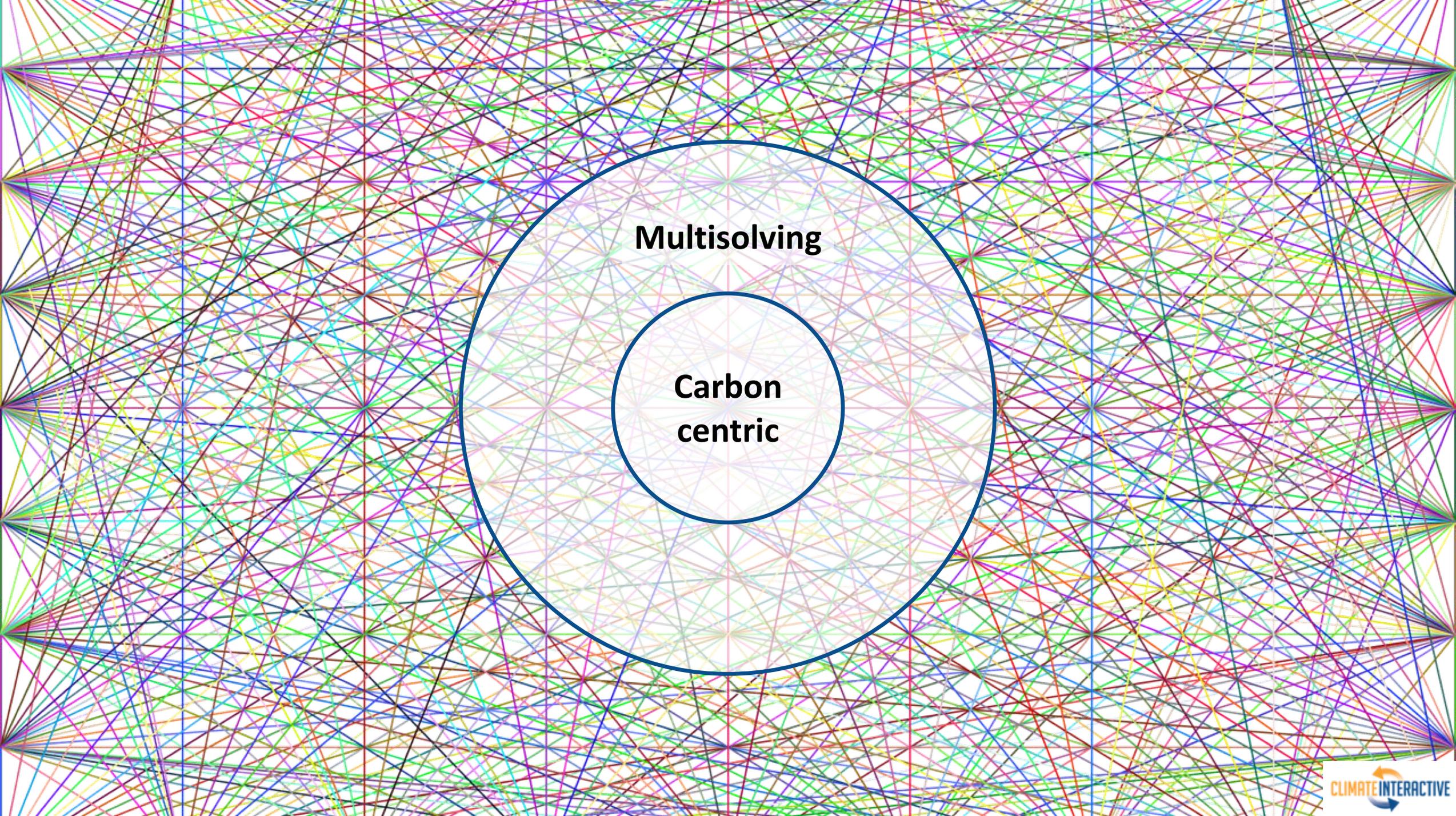
Growth: Population, Economic Growth



World Climate exercise

The image features a dense, multi-colored network of lines forming a complex web of interconnected nodes. The lines are thin and vary in color, including shades of red, blue, green, yellow, and purple. In the center of this network is a white circle with a dark blue border. Inside this circle, the words "Carbon" and "centric" are written in a bold, black, sans-serif font, stacked vertically. The overall appearance is that of a data visualization or a conceptual diagram representing a carbon-centric network.

**Carbon
centric**



Multisolving

**Carbon
centric**

MULTISOLVING:

protecting the climate while improving health, equity,
and well-being



More efficient engines
and fuel switching. 

Some car travel replaced
with walking and cycling. 

Reduction in transport CO₂ emissions:

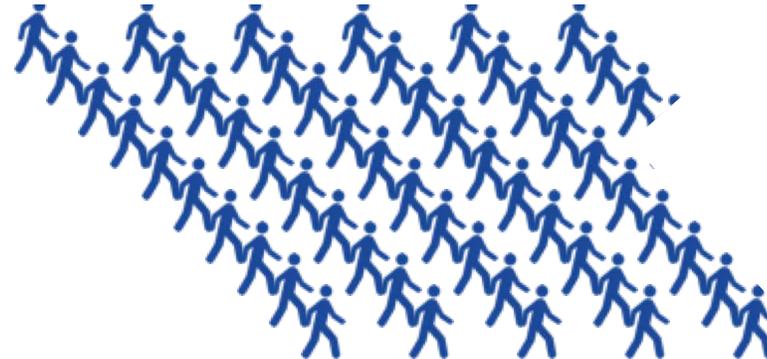
35%

38%

Reduction in premature deaths per million people:

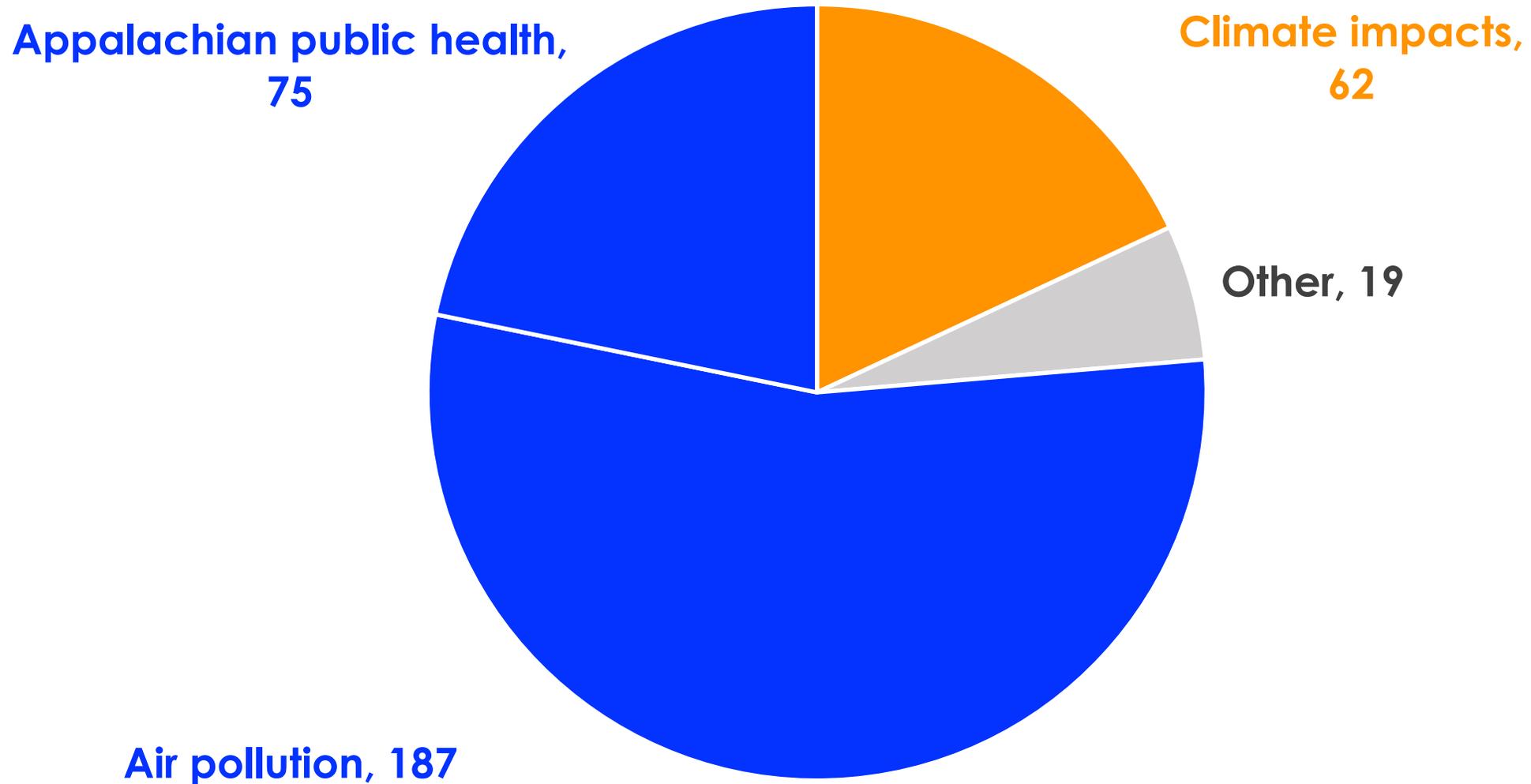


17



530

Costs of Coal in the US (billion \$)



Four Reasons To Multisolve on Climate

1

Ethics

People today are suffering from poverty, inequality, violence, poor health and other problems. Even in the face of dangerous climate change these other causes of suffering deserve response.



2

Financial practicality

Solving multiple problems with the same investment of time or money makes good fiscal sense when budgets are constrained and needs are high.



3

Politics

A broad, strong base of people committed to climate action has the best chance of overcoming the power of vested interests that hold the current fossil fuel intensive economy in place.



4

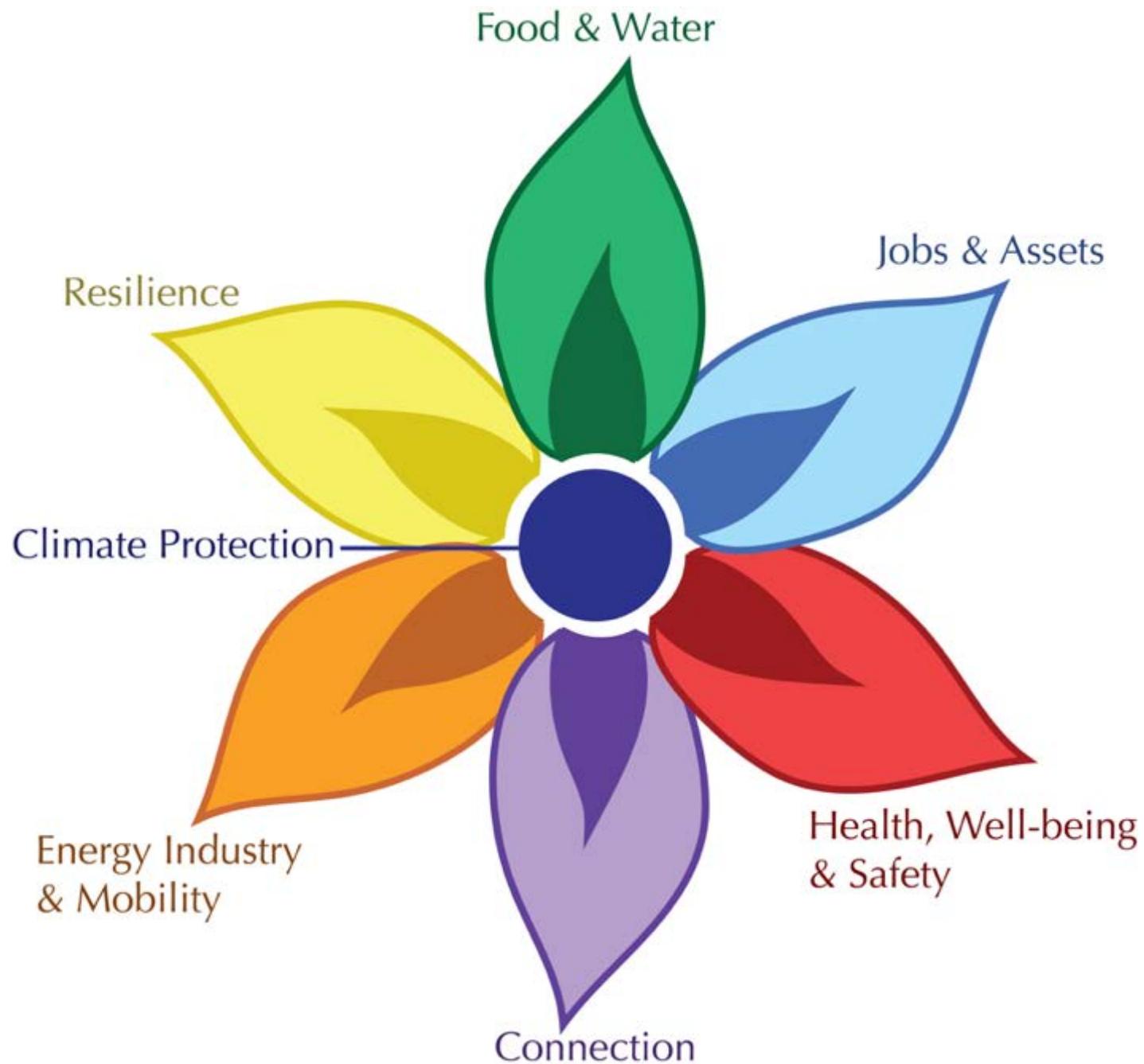
Systems logic

In an interconnected world, designing to optimize a singular goal - such as carbon emissions - can lead to poor systems-level performance.

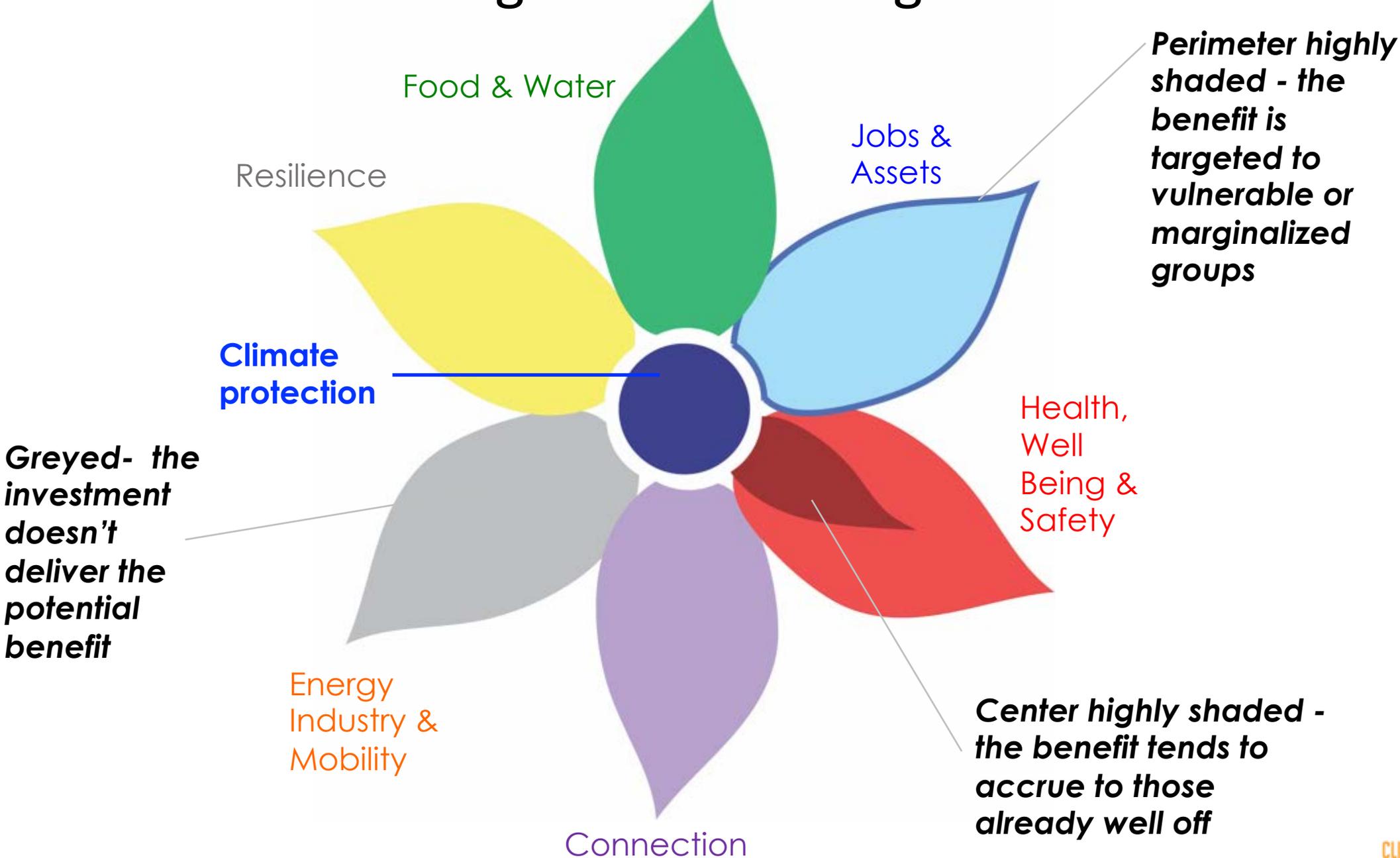


FLOWER

Framework for
Long-term,
Whole-system,
Equity-based
Reflection



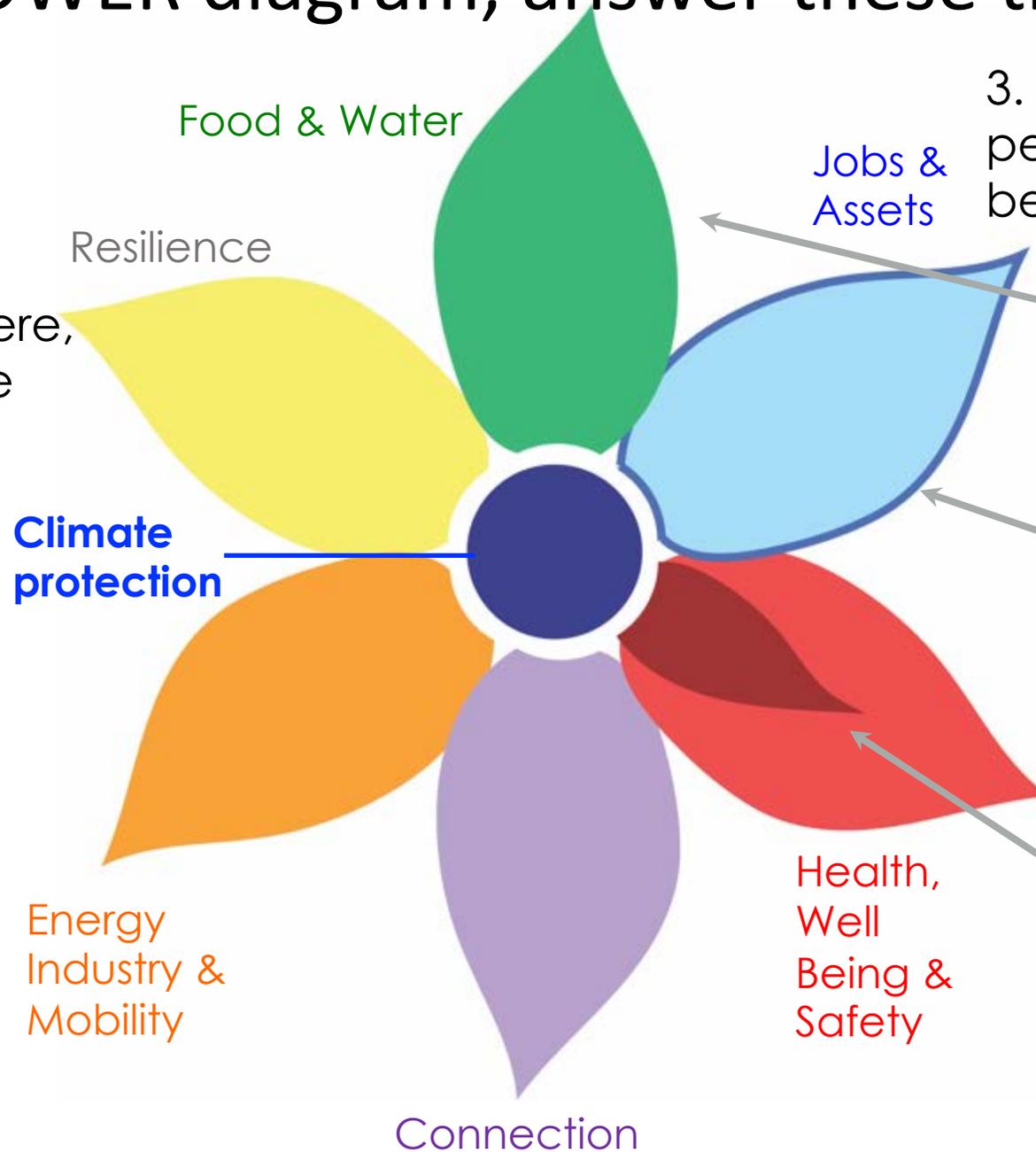
Reading a FLOWER diagram



To make a FLOWER diagram, answer these three questions:

1. **Does the project protect the climate?** If your project reduces GHGs in the atmosphere, color the center of the FLOWER **dark blue**.

2. **Co-benefits?** For each of the six petals, ask: does my project produce this benefit? If yes, **color the corresponding petal**. If not, leave the petal uncolored.



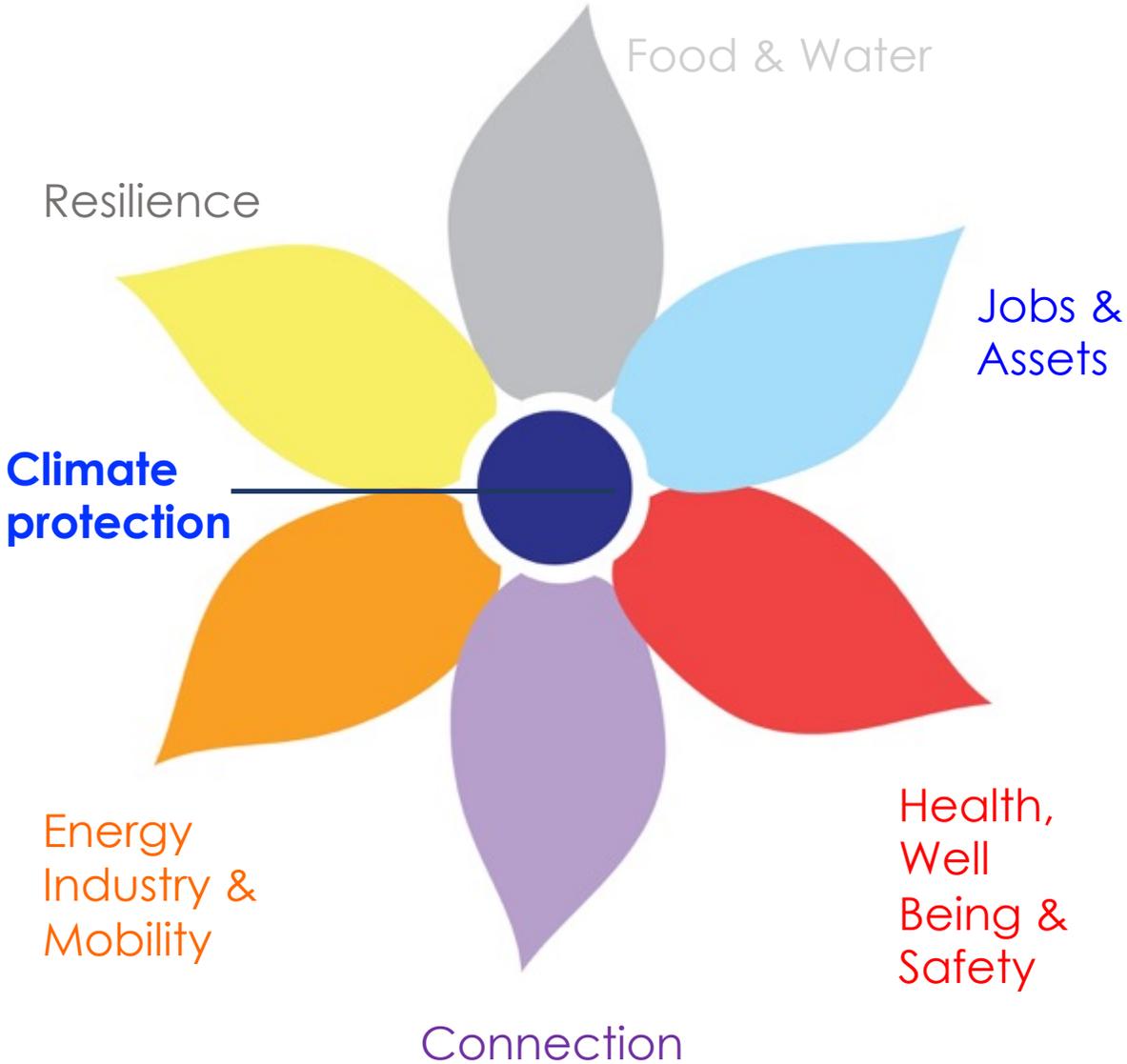
3. **Who benefits?** For each petal ask: who receives the benefit?

If **everyone benefits**, shade **evenly**.

If the project most benefits **marginalized groups**, shade the **outer edges more darkly**.

If those **already well off** gain most of the benefit, **shade the center** of the petal darker than the edges.

FLOWER Example: Compressed work week



FLOWER Example: Electric car incentives

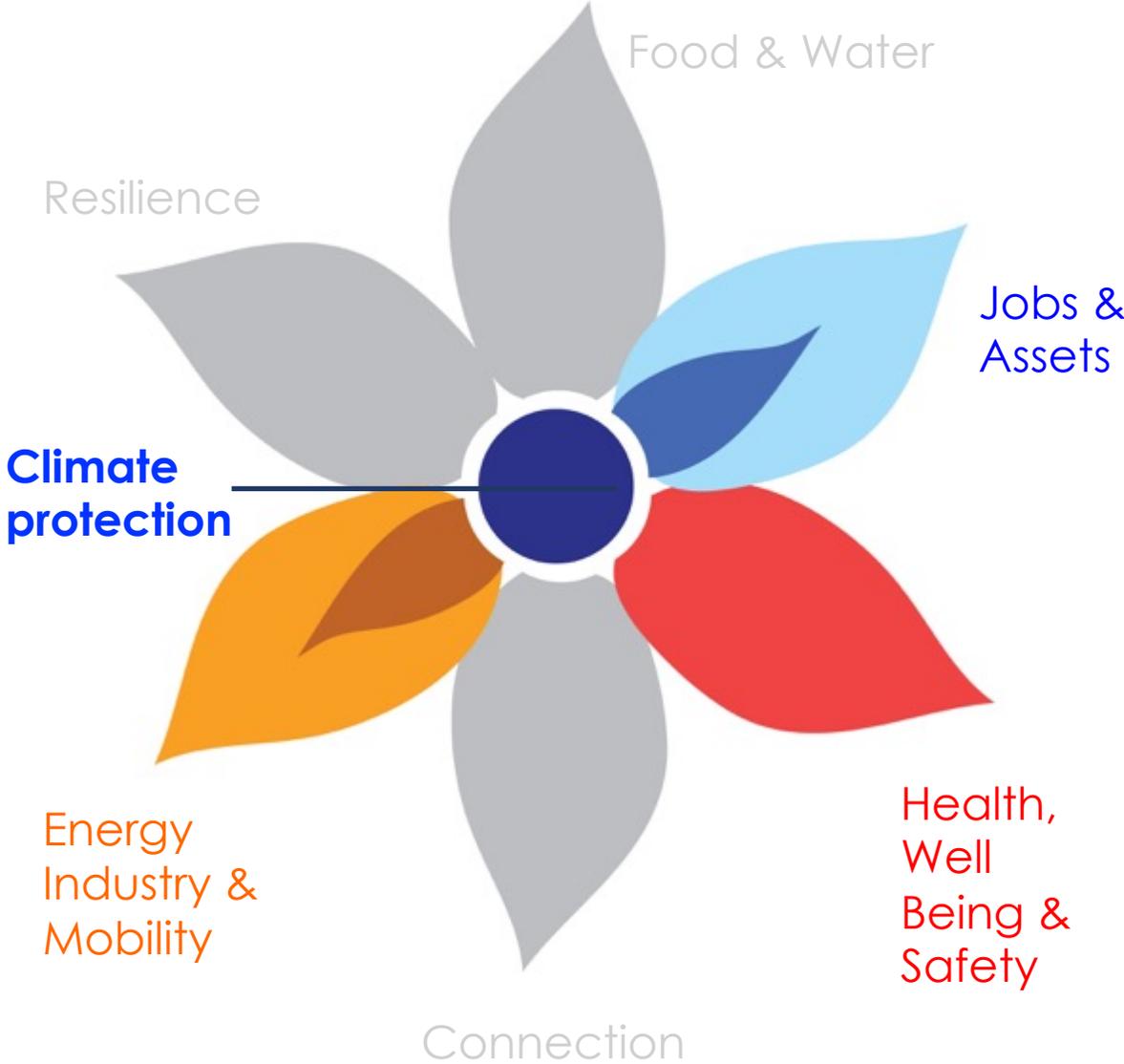
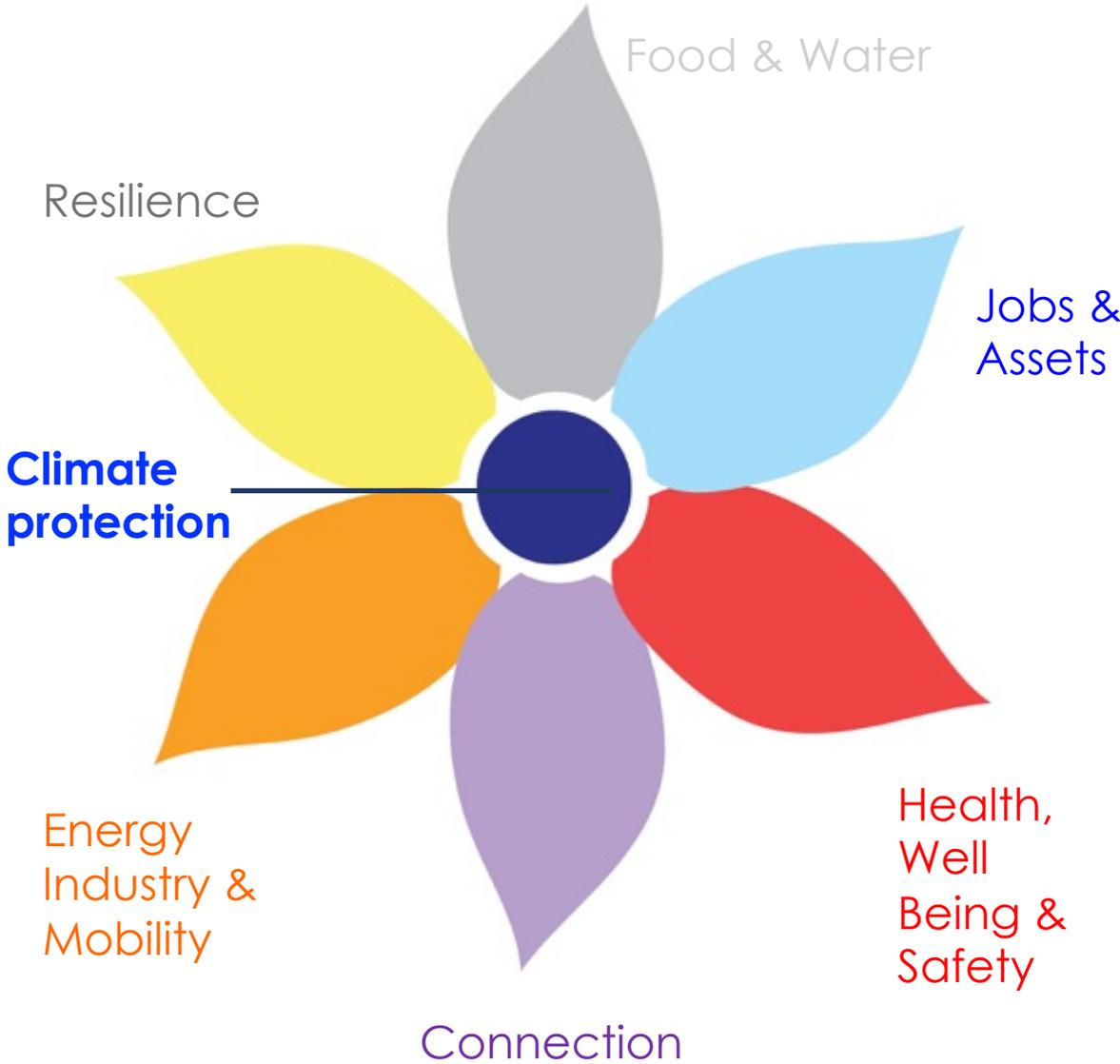
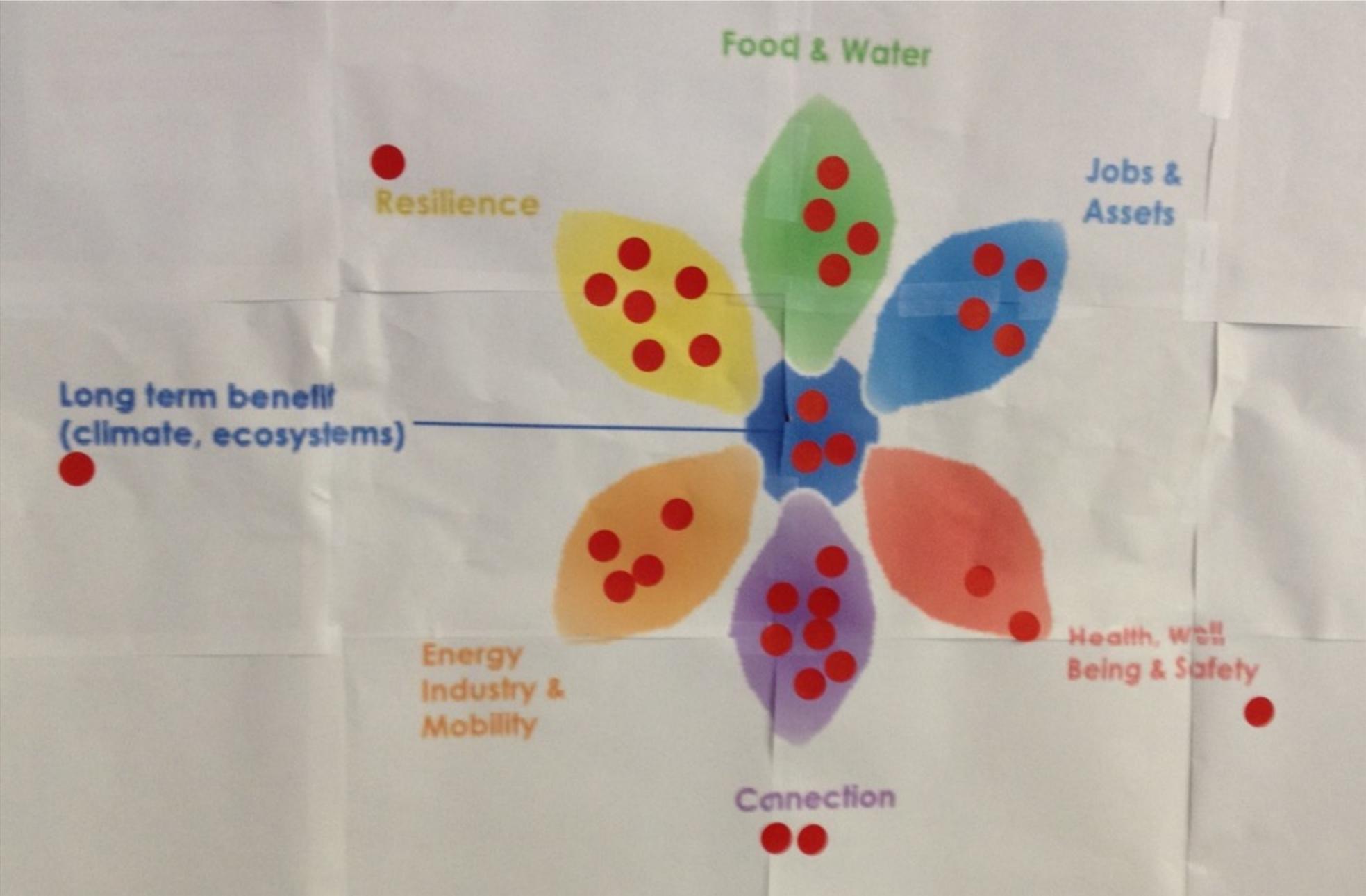


Image from pixabay

FLOWER Example: Multi-use Greenway





Benefits of using FLOWER in the classroom

- Adaptable
- Real-world, solutions focus
- Easily combined with service learning and stakeholder engagement
- Offers an effective climate communication tool that can reach beyond 'the usual suspects'
- Opportunity to integrate climate justice in solutions

Example: FLOWER poster presentations

- 100-level undergraduate course on sustainability
- Presentations at a public event near the end of the semester



Example: FLOWER with low-income, first-generation-in-college high school students



Easily adapted to other educational settings

- Provide additional scaffolding and resources for secondary school students
- Written, oral, or poster presentations
- More advanced courses or in-depth assignments:
 - Integrate into service learning projects in which students use FLOWER as a framework for engaging with real-world stakeholders
 - Include system maps (i.e., causal loop diagrams or stock-flow diagrams) that illustrate the interactions between climate action and benefits in other sectors
 - Include quantitative analysis

Connect With Other Multisolvers



twitter.com/multisolving



facebook.com/groups/multisolving



multisolving@climateinteractive.org



climateinteractive.org/multisolving

Thank You!



scmccauley@climateinteractive.org
climateinteractive.org/multisolving