BCL

BUSINESS CLIMATE LEADERS

Agriculture as a Solution to Climate Change

Featuring

BCL's Agriculture Sector Team

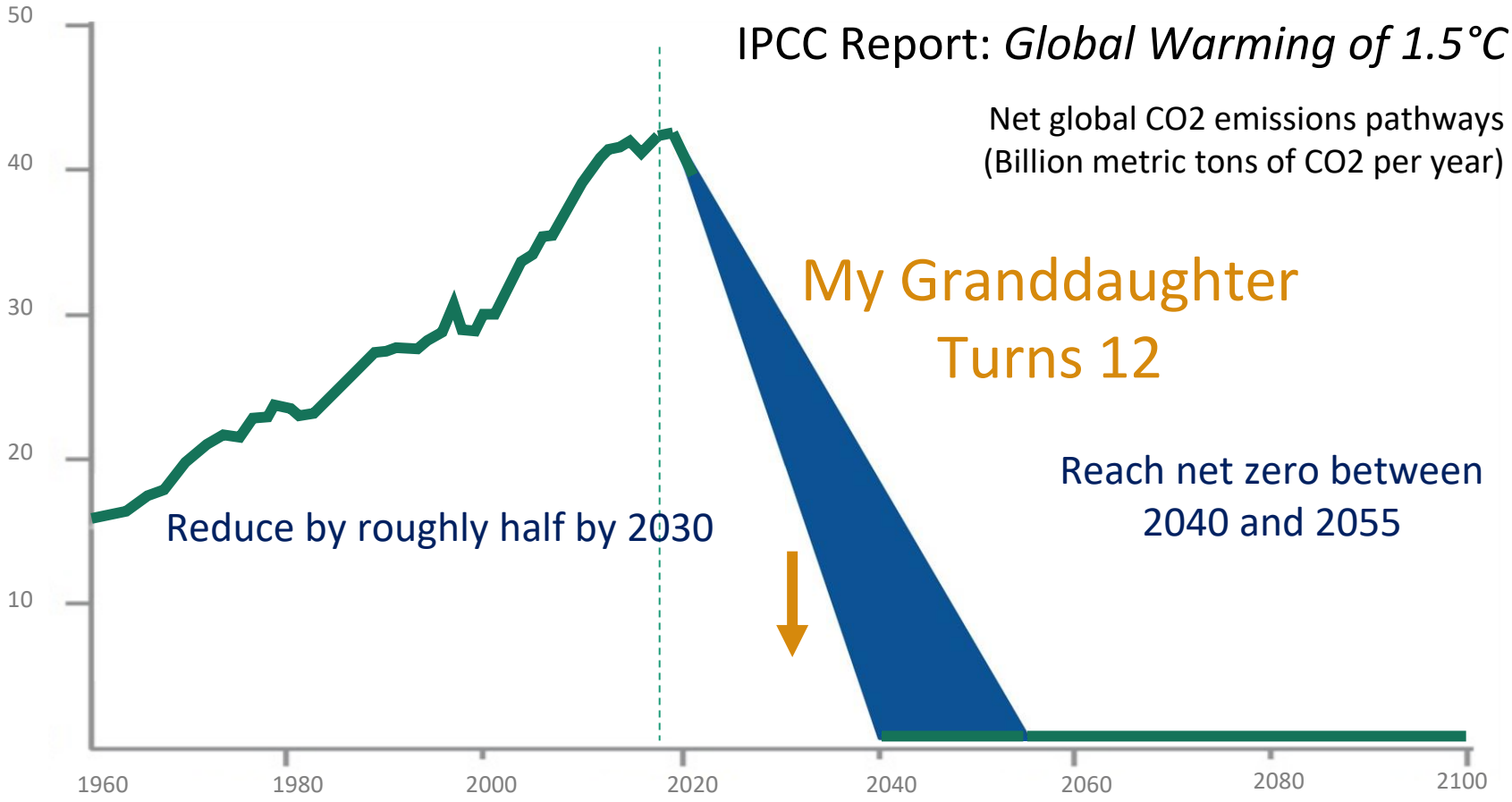
Agricultural Action Team

Is an action team within **Citizen's Climate Lobby**

Its mission is to research and advise the organization on the impact of agriculture on climate change, and to help understand the innovations required moving forward

The challenge

IPCC Report: *Global Warming of 1.5°C*



The Carbon Budget

Integrated assessment models for a 66% chance of staying below 1.5°C of warming show an estimated 193 billion tons of carbon remaining in the budget. source

Globally, a record estimated 37.1 billion metric tons of carbon dioxide were emitted in 2018 source

The Options

Mitigation Options

Energy

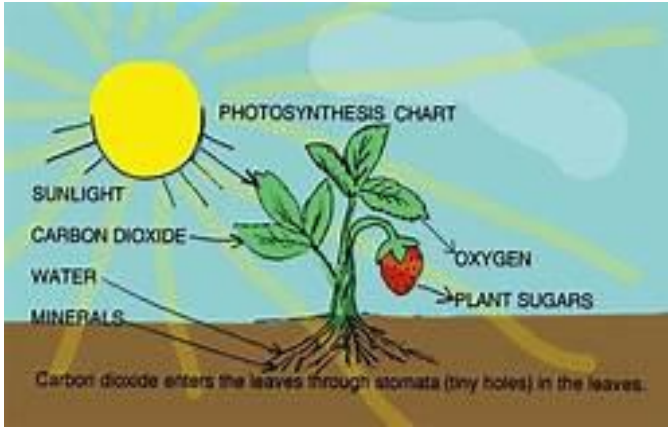
Replace energy from coal, oil and gas with non-carbon–based sources

Photosynthesis

Regenerative agriculture and land management to sequester carbon

The Power of Photosynthesis

The miracle of photosynthesis, which takes place in the chloroplasts of green leaves, combines carbon dioxide (CO_2) from the air and water (H_2O) from the soil to capture light energy and transform it to biochemical energy in the form of simple sugars.



These simple sugars are the building blocks for life on Earth. Plants transform these simple sugars into a great diversity of other carbon compounds, including starches, proteins, organic acids, cellulose, lignin, waxes and oils.

Significantly, many of the carbon compounds derived from the simple sugars formed during photosynthesis are also essential to the creation of **well-structured topsoil** from the lifeless mineral dirt produced by the weathering of rocks.

Source

4 per 1000 Initiative

A "4‰" annual growth rate of soil carbon content would make it possible to counteract the present increase in atmospheric CO_2.

Our capacity to feed 9.5 billion people in 2050 in the midst of serious climate change will depend especially on our ability to keep our soils alive. The health of our soils strongly controls how much agriculture can produce.

Systemic Risks

Carrying Capacity

Global Population Limits

The planet appears to be in population overshoot. At the current rate, global population is projected to increase to 8.6 billion by 2030 and 9.8 billion by 2050.

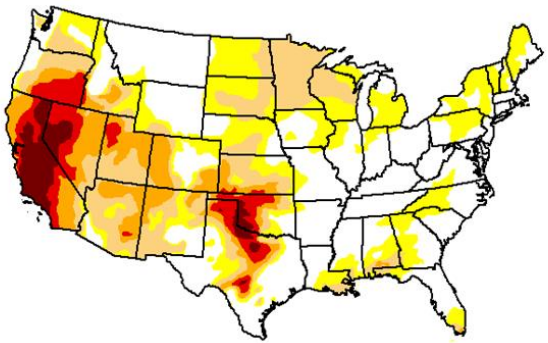
Today's global population of 7.6 billion is extracting natural resources at 1.7x the reproductive capacity of the planet.

Nearly 90% of global fish stocks are either fully fished or overfished

Aquifers are being pumped beyond their replenishment rates worldwide

Earth has lost about one-third of its arable land in the past 40 years

Risk Levels of Concentration



April 7, 2015
(Released Thursday, Apr. 9, 2015)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	40.21	59.79	36.92	19.17	9.14	3.62
Last Week 3/31/2015	41.43	58.57	36.84	18.60	8.97	3.34
3 Months Ago 1/6/2015	55.85	44.15	28.10	16.76	8.84	2.48
Start of Calendar Year 12/30/2014	53.20	46.80	28.68	16.93	8.96	2.54
Start of Water Year 9/30/2014	52.22	47.78	30.57	18.66	9.41	3.85
One Year Ago 4/8/2014	50.30	49.70	37.98	24.23	9.88	2.53

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author(s):
Michael Brewer
NCDC/NOAA

http://droughtmonitor.unl.edu/

California Grows for the US market

99% of artichokes

95% of celery

90% of avocados

89% of cauliflower

86% of lemons

83% of spinach

66% of carrots

44% of asparagus

97% of plums

94% of broccoli

90% of lettuce

88% of strawberries

84% of peaches

50% of bell peppers

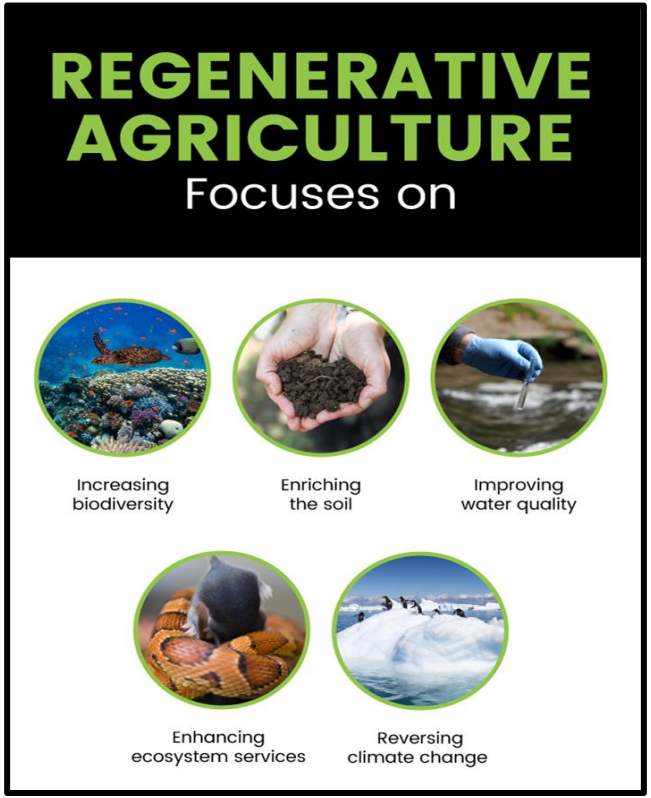
33% of tomatoes

What are the Options?

Regenerative Agriculture

New land-management practices, refined over the last thirty years, under the heading “regenerative agriculture,” are showing tremendous promise in restoring the Earth’s disrupted ecologies and climate

Sources



Demand-Driven Change

Regeneration depends on local conditions of soil, climate, water, and socioeconomics

The industrial food system cannot reform itself without active participation by an informed public

Any change has to be built from the ground up, at the community level, because nature is local.

Changing crop cycles and types of crops requires a corresponding change in menus and dietary habits

Menus of Change

https://www.menusofchange.org

Where to Engage

Local Food at Scale

"Agriculture of the Middle" (AOTM) — A broad category of small and mid-sized farms and ranches that are too large to sell via local farmers' markets or CSAs, are smaller than those supplying globalized commodity markets, and that want to sell locally.

Investing in these producers is important to our region. AOTM producers tend to farm or ranch in ways that restore soil and conserve water, hire proportionally more local labor, buy more of their supplies locally and engage actively in their communities. In short, AOTM producers are economic development drivers, job creators and good neighbors.

Ecotrust

Corporate Commitments

Kroger Loves Local

At Kroger, we make it a priority to source locally — after all, it's important to support our neighbors, and sourcing locally gives us some of the freshest produce, meat and seafood possible!

Plus, we recognize that every community has tastes and products that are unique to its region. We make sure we stock local items that are meaningful to our customers . . . it's an easy way to make a connection, and also help the local economy!

Fred Meyer, Food4Less, QFC

Walmart

Promoting locally grown produce in the US

We strive to source produce from local farms wherever possible in each of our retail markets as a way to support local economies, increase freshness for customers, and reduce transportation costs and greenhouse gas emissions.

Source

Source

Albertsons

We've spent decades working with local growers across the country to bring the finest foods to you and your family.

Albertsons Companies works with hundreds of suppliers that offer local products. Each of our divisions has local goods unique to their communities, allowing us to offer the highest-quality products available in each area.

Albertsons, Safeway

Companies and Organizations

Companies and organizations on agriculture and climate change

Look who's talking about climate change!
General Mills to implement regenerative agriculture on 1M acres
Ecosystem Services Market Consortium
Sustainable Food Policy Alliance
World Resources Report: Creating a Sustainable Food Future
Science Based Targets
Field to Market
Regeneration International
4 per 1000
Soil Health Institute
Foodtank
Nationwide Coalition (over 300 member)
Ecosystem Marketplace
Companies offering contracts to grow organic and non-GMO grains

Sustainable Food Policy Alliance
CERES

Agriculture GO Team Toolkit

This toolkit provides a general introduction to the role of agriculture and climate change, within the context of a wider systems perspective that views the fundamental role of food on security, prosperity, health, social equity.

It is designed to provide a generalist's perspective from best science available, and equip volunteers to engage with the food and farm sector in competent conversations. The toolkit is designed to be modular, and encourage customization, to make it most helpful to presenters and appropriate to specific audiences.

Agriculture GO Team Toolkit

BCL
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What Can YOU Do to Help?

- Support national carbon pricing legislation
- Support participation in lobbying activities
- Influence trade associations and chambers of commerce
- Activate your supply chain
- Educate employees on climate change