Academy of Nutrition and Dietetics Foundation

Future of Food Initiative

Food Production and Our Environmental Responsibility

Future of Food Webinar

December 2014

Future of Food Archived Webinars

Academy of Nutrition and Dietetics Foundation
Future of Food Initiative

- Hungry and Overweight: How is it Possible?
- Contributors and Effects of Food Insecurity: Nutrition and Beyond
- School Meals and Community Partnerships: Creative Solutions against Food Insecurity
- Point A to Point B: Improving Access to Healthy Foods in Food Banks
- A Flavorful Pairing: Nutrition Education in Food Banks
- Ready, Set, Go: Preparing and Delivering Effective Nutrition Education for Audiences Facing Food Insecurity
- Making an Impact with Food Insecure Populations
- Successful Synergies
- **U.S. Farming 101: Part 1**
- **US. Farming 101: Part 2**
- **Food Security & Nutrition: Challenges & Opportunities for World Health**

Learning Objectives

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- Describe at least one common misperception of animal agriculture and the environment
- Identify at least one current innovations in agriculture and explain how it can affect food costs and our economy
- Describe the nutrition professional's role in educating consumers about food production and the environment

Today's Speakers

Academy of Nutrition and Dietetics Foundation
Future of Food Initiative

Jude L. Capper, PhD
Livestock Sustainability Consultant

Carlos Saviani
Vice President, Animal Protein
World Wildlife Foundation

Lisa Dierks, RD, LD
Nutrition Program Manager
Mayo Clinic Healthy Living Program

Instructor in Nutrition
Mayo Clinic College of Medicine

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What is Sustainability?

Sus·tain·able
adjective

"Able to last or continue for a long time."

Resilient
Strong
Adaptable
Continuous

Source: Slide created by Dr. Jude L. Capper, 2014

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Don't Believe Everything You Hear

Source: Created by Dr. Jude L. Capper, 2014; Photo credit:
http://www.peta.org/b/thepetafiles/archive/2011/03/22/splish-splash-peta-s-takin-a-bath.aspx

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Meat Production Contributes a Small Proportion of the U.S. Carbon Footprint

According to the U.S. EPA (2012), meat production accounts for 2.1% of total greenhouse gas emissions.

Source: Created by Dr. Jude L. Capper, 2014; Information from US EPA (2012) "Inventory of US Greenhouse Gas and Sinks 1990-2010."

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If Everybody in the U.S. Went Meatless Every Monday for a Whole Year…

The national carbon footprint would only be reduced by 1/3 of one percent

Source: Created by Dr. Jude L. Capper, 2014| Data from: Capper, J. L. 2013. Should we reject animal source foods to save the planet? A review of the sustainability of global livestock production. South African Journal of Animal Science 43: 233-246.

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All Consumers Deserve a Choice

Source: Created by Dr. Jude L. Capper, 2014

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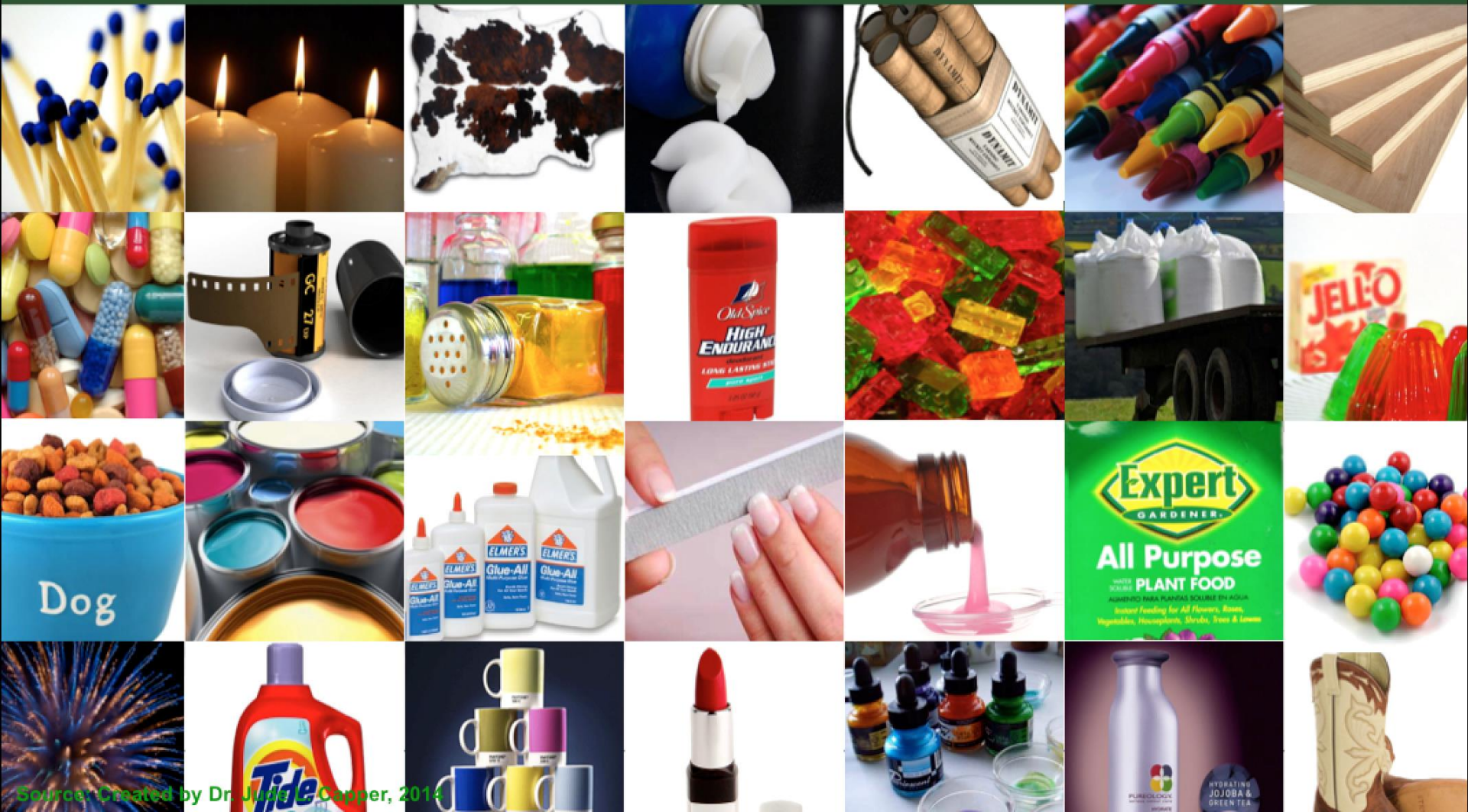
Without Animal Agriculture, What Would be the Cost of Sourcing Product Ingredients?



Source: Created by Dr. Judith Capper, 2014

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What Do These Industries Have in Common? They All Provide By-Products Fed to Animals

Source: Created by Dr. Jude L. Capper, 2014

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If We All Became Vegan…

In 10 years we would have **612 million** cattle in the U.S. In 20 years time, **3.7 billion** a 41x increase.

Source: Created by Dr. Jude L. Capper, 2014. Based on 85% of cows having a live calf, cows living for 20 years and 95% of calves surviving. More information available at http://bovidiva.com

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We Can Replace Meat and Dairy with Plant-Based Proteins

Source: Created by Dr. Jude L. Capper, 2014

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We Can Replace Meat and Dairy with Plant-Based Proteins

But humans make methane too!

Source: Created by Dr. Jude L. Capper, 2014

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Public Perception of U.S. Beef Production

Source: Created by Dr. Jude L. Capper, 2014; Photo from: http://politicsoftheplate.com/?p=1112

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U.S. Beef Industry Summary – Cow-Calf

Source: Created by Dr. Jude L. Capper, 2014

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U.S. Beef Industry Summary – Stocker/Backgrounder

Source: Created by Dr. Jude L. Capper, 2014

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U.S. Beef Industry Summary – Feedlot

Source: Created by Dr. Jude L. Capper, 2014

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U.S. Beef Industry Summary – Dairy

Source: Created by Dr. Jude L. Capper, 2014

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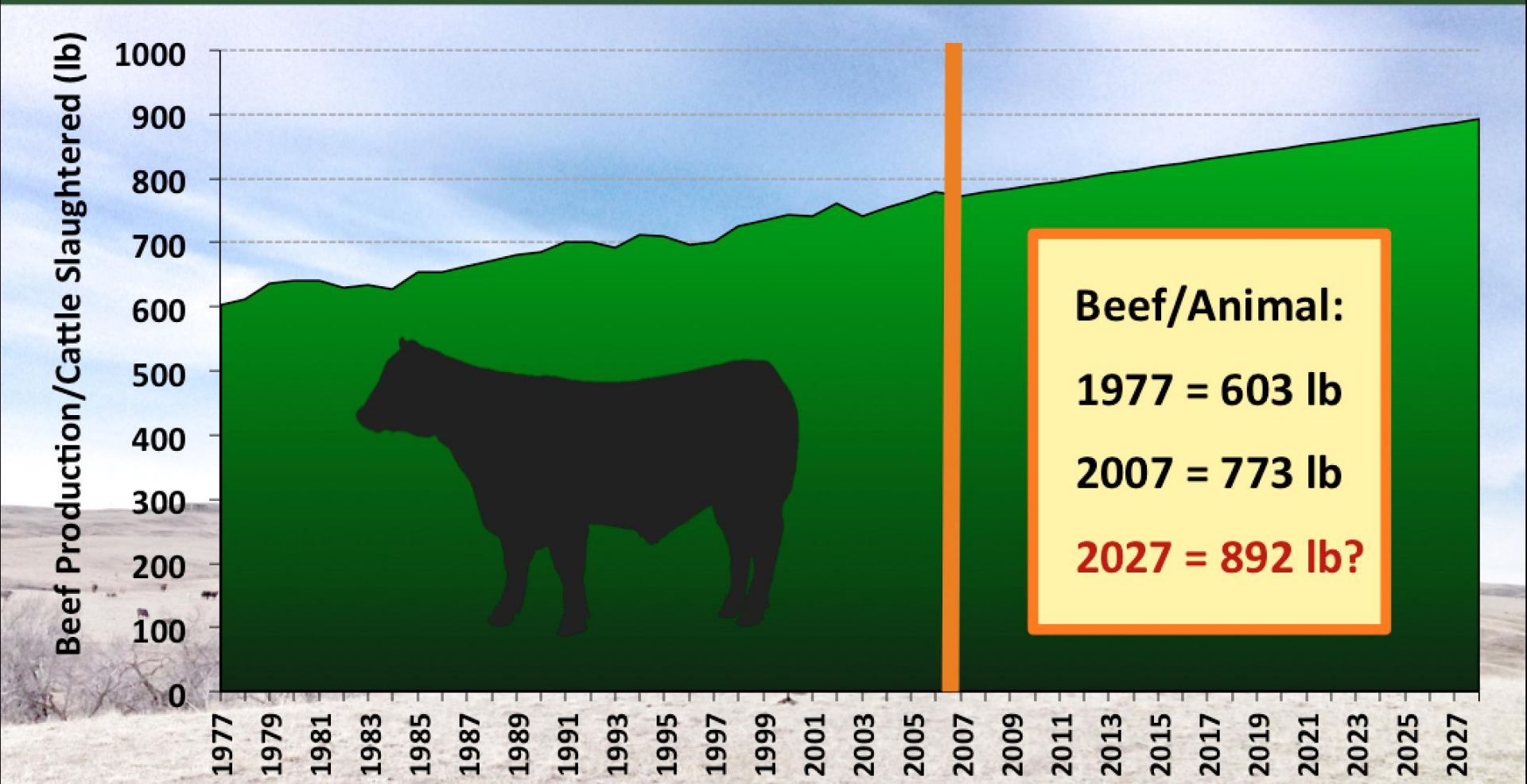
Opportunities to Further Improve Beef Yield per Animal May Be Limited



Source: Created by Dr. Jude L. Capper, 2014; Data from USDA-NASS (2009) http://www.nass.usda.gov/Data_and_Statistics/Quick_Stats/

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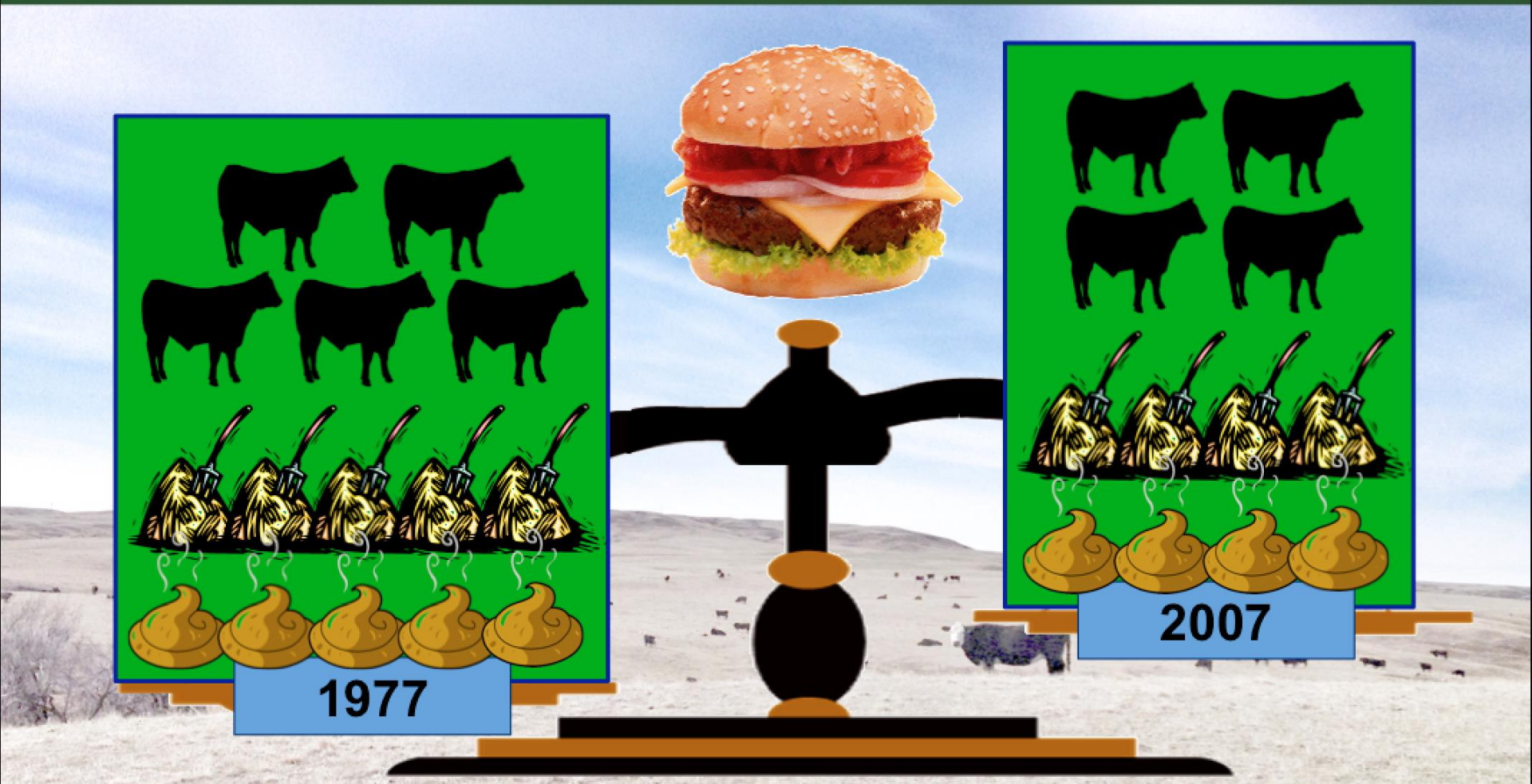
In 1977, it Took Five Animals to Produce the Same Amount of Beef as Four Animals in 2007



Source: Created by Dr. Jude L. Capper, 2014; Data from: Capper, J. L. (2011). The environmental impact of U.S. beef production: 1977 compared with 2007. *J. Anim. Sci.*

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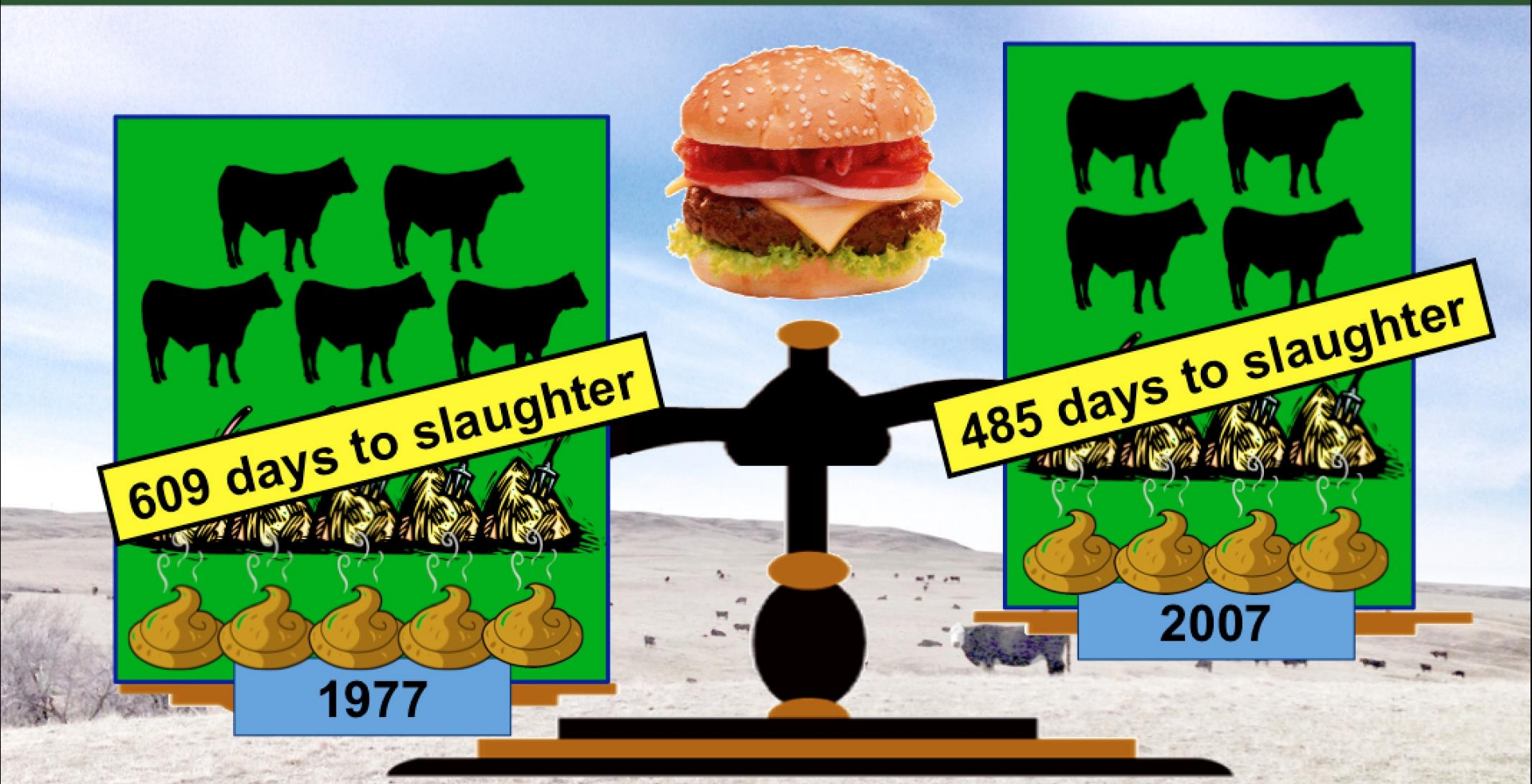

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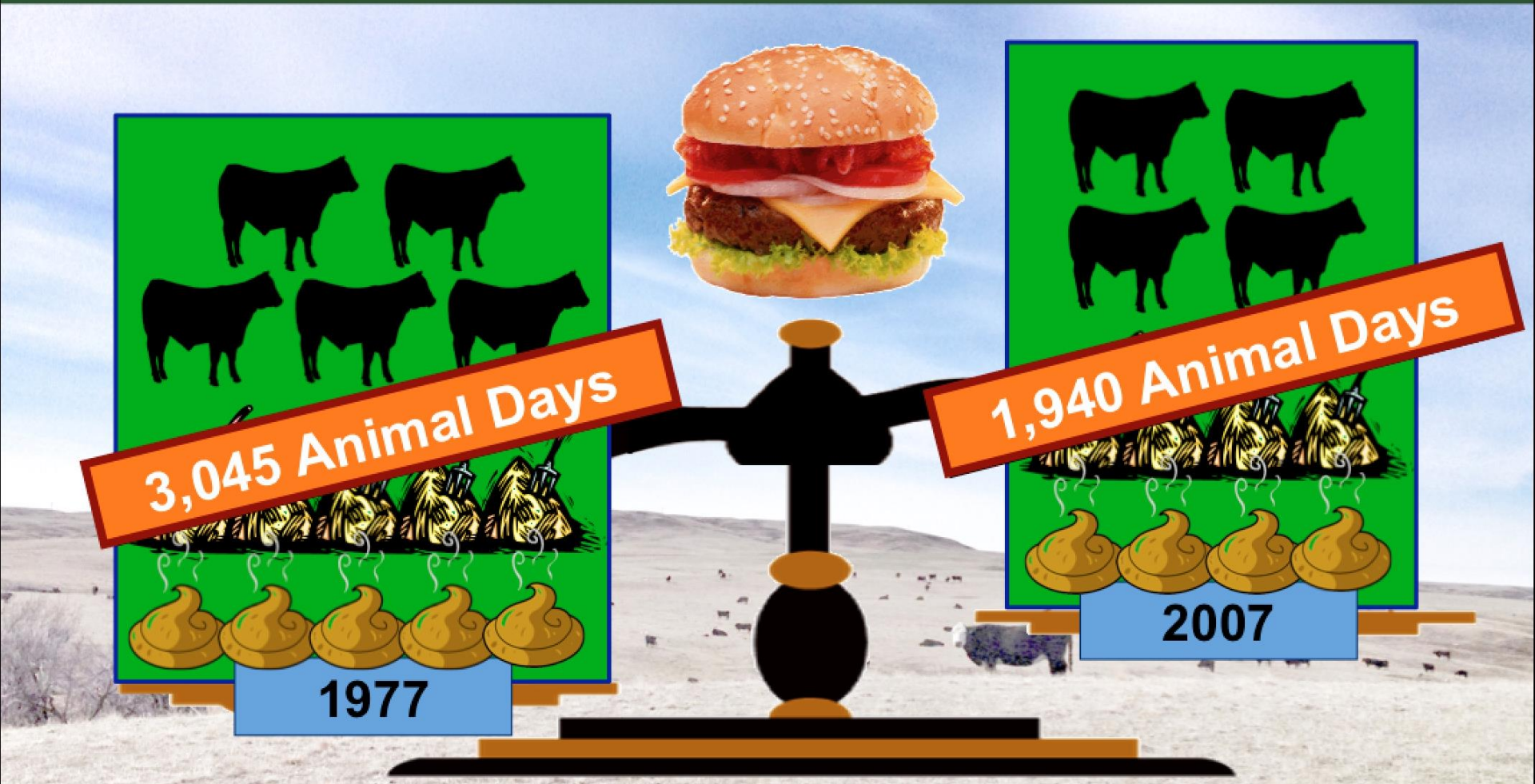

Source: Created by Dr. Jude L. Capper, 2014; Data from: Capper, J. L. (2011). The environmental impact of U.S. beef production: 1977 compared with 2007. *J. Anim. Sci.*

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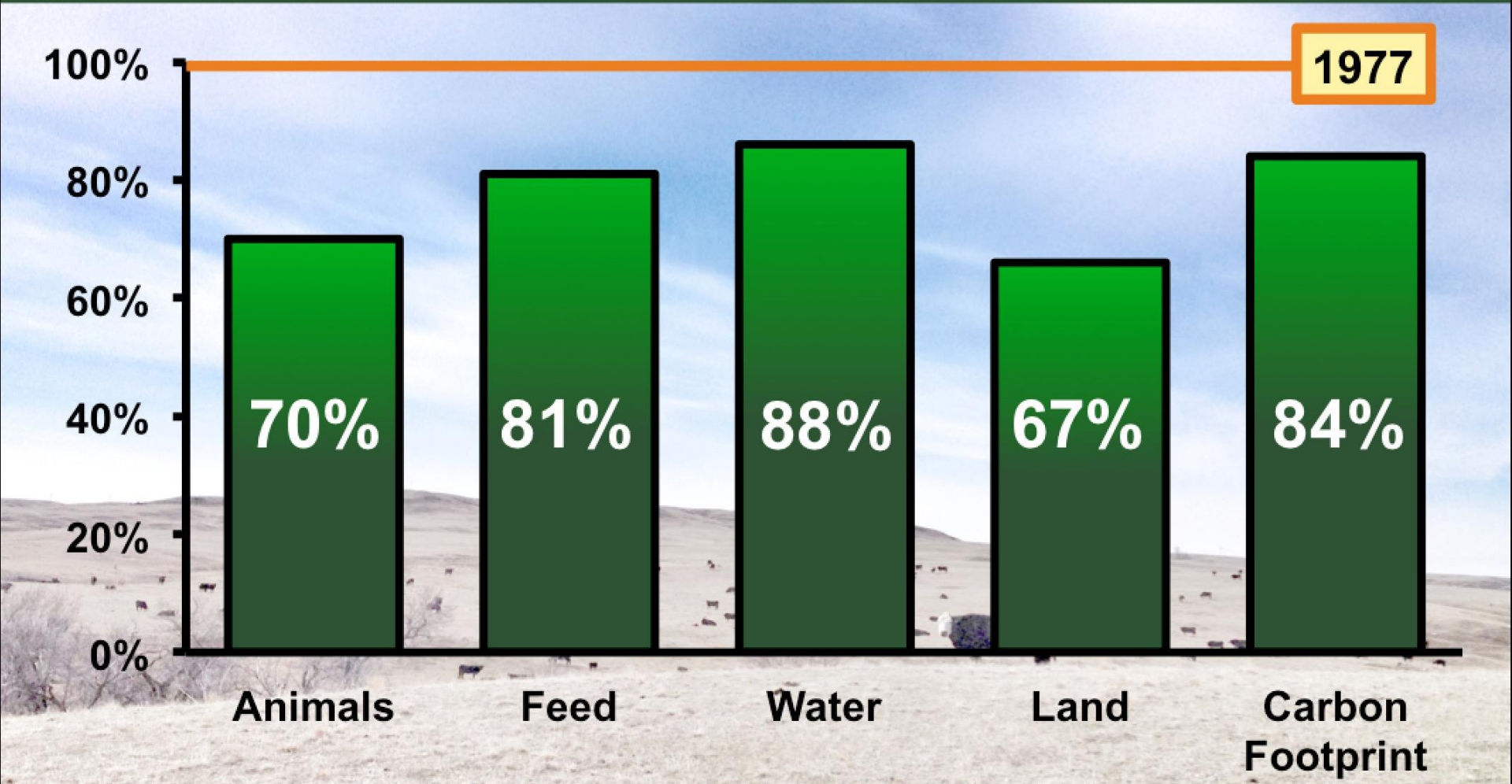
Environmental Impact of U.S. Beef Production has been Reduced by Improved Productivity



Source: Created by Dr. Jude L. Capper, 2014; Data from: Capper, J. L. (2011). The environmental impact of U.S. beef production: 1977 compared with 2007. *J. Anim. Sci.*

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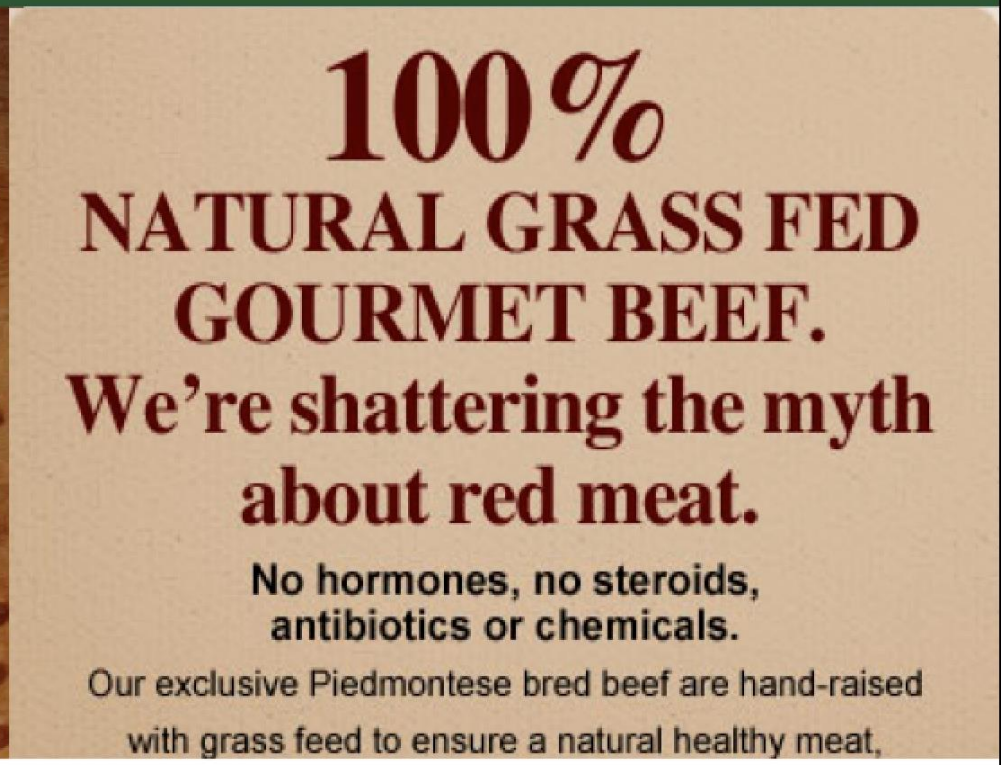
The Herbivore's Dilemma: Is Grass-Fed Beef Better for the Planet?



"We have succeeded in industrializing the beef calf, transforming what was once a solar-powered ruminant into the very last thing we need: another fossil-fuel machine." *Michael Pollan, NY Times*

Source: Created by Dr. Jude L. Capper, 2014; Quote from Pollan, M. (2002) "Power steer" NY Times Magazine, March 31, 2002;
Photos from: http://drhewitt.wordpress.com/ and http://www.fackrellfarms.com/templates/piedmonthome/images/explanation2.jpg

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Converting to a More Extensive System Increases Animal Numbers and Resource Use

Source: Created by Dr. Jude L. Capper, 2014; Data from: Capper, J. L. (2012) Is the Grass Always Greener? Comparing the Environmental Impact of Conventional, Natural and Grass-Fed Beef Production Systems. *Animals* 2:127-143.

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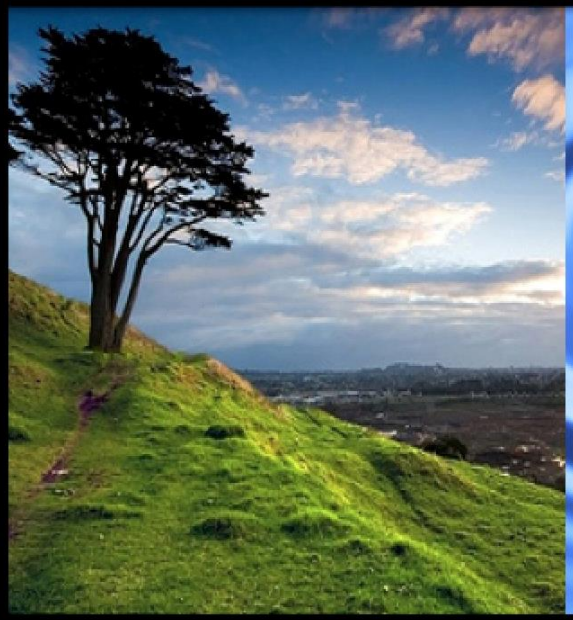
If the Entire U.S. Beef Industry Converted to Grass-Finished Beef, We'd Need…

Land	Water	Carbon
		
131 mil ac.	**468 bil gal.**	**135 mil t.**

Extra Resources to Produce 26.1 billion lbs beef

Source: Created by Dr. Jude L. Capper, 2014; Data from: Capper, J. L. (2012) Is the Grass Always Greener? Comparing the Environmental Impact of Conventional, Natural and Grass-Fed Beef Production Systems. *Animals*.

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Shouldn't Livestock be Afforded the Same Veterinary Care As Our Pets?

Source: Created by Dr. Jude L. Capper, 2014. Photo from: http://thekitchensgarden.files.wordpress.com/2011/09/cat-and-cow.jpg

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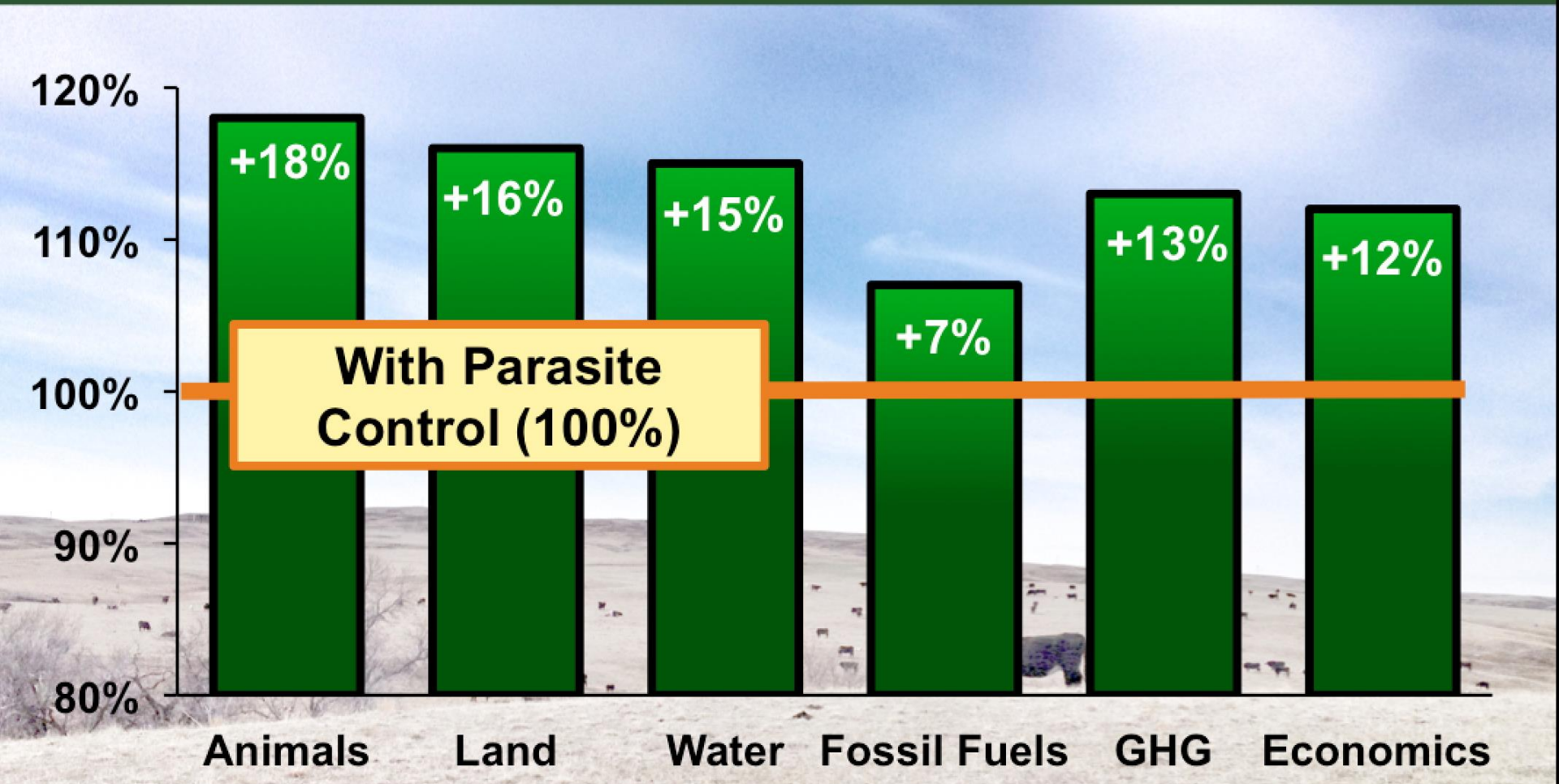
Withdrawing Effective Parasite Control Increases Environmental and Economic Impact



Source: Created by Dr. Jude L. Capper, 2014. Data from Capper, J. L. 2013. The environmental and economic sustainability impact of withdrawing parasite control (Fenbendazole) from traditional U.S. beef production systems. ADSA/ASAS Annual Meeting, 2013, Indianapolis, IN.

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Effective Parasite Control Has a Positive Impact on Social Sustainability

Extra beef produced via effective parasite control in a 40-cow herd supplies 19 families with their annual beef demand

Source: Created by Dr. Jude L. Capper, 2014. Data from Capper, J. L. 2013. The environmental and economic sustainability impact of withdrawing parasite control (Fenbendazole) from traditional U.S. beef production systems. ADSA/ASAS Annual Meeting, 2013, Indianapolis, IN.

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Summary

The beef industry has taken steps to improve sustainability over time – and will continue to do so.

Source: Created by Dr. Jude L. Capper, 2014

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Rethinking Food

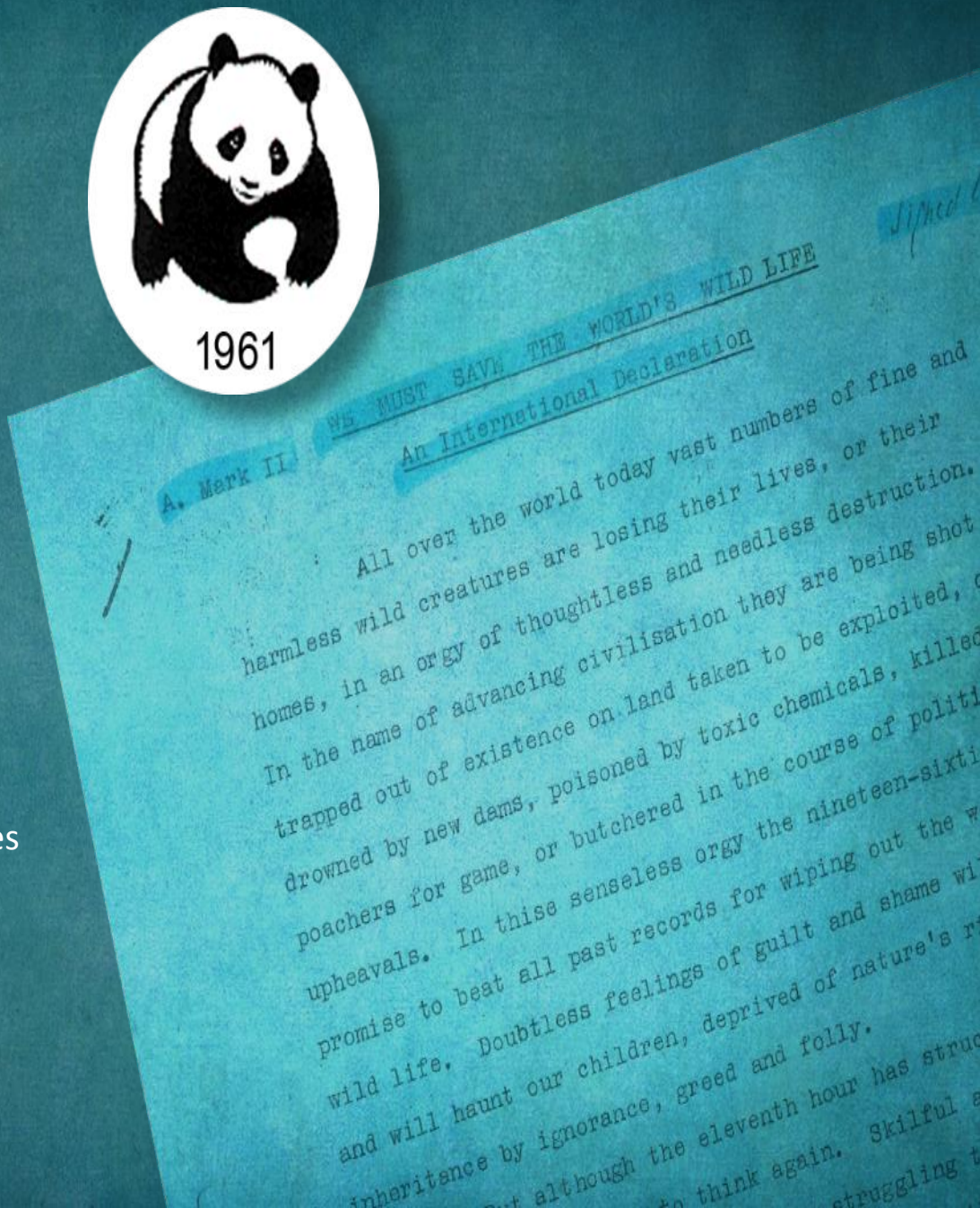
Carlos M. Saviani
VP Animal Protein
WWF US

Rethinking **Food**

WWF History

WWF came into existence on 29 April 1961, when a small group of passionate and committed individuals signed a declaration that came to be known as the Morges Manifesto.

From its origins as a small group of committed wildlife enthusiasts, WWF has grown into one of the world's largest and most respected independent conservation organizations – supported by 5 million people and active in over 100 countries on five continents.




WWF Vision
To build a future in which people live in harmony with nature.
Photo: © Brent Stirton / Getty Images / WWF-UK

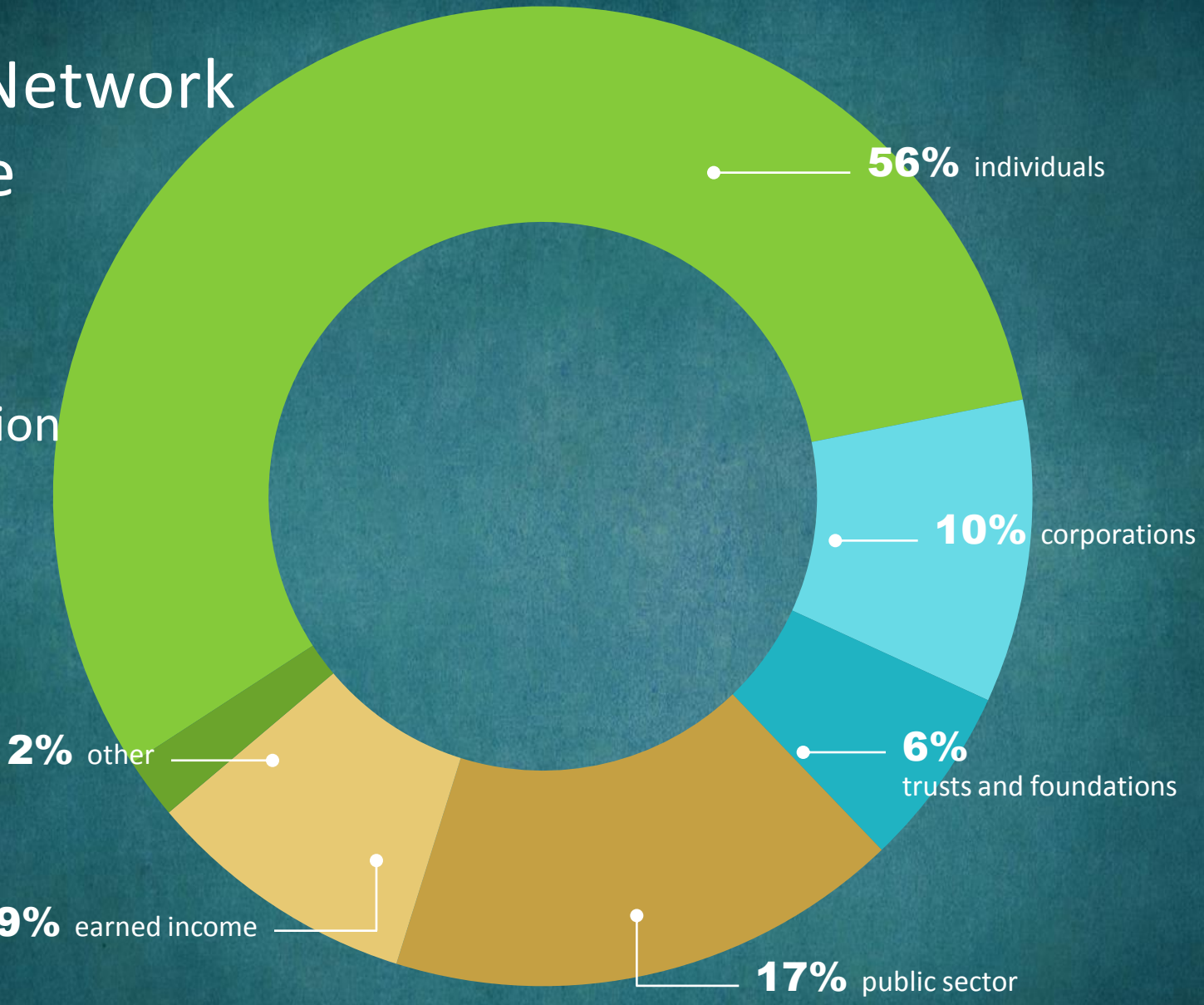
WWF Mission

To conserve nature and reduce the most pressing threats to the diversity of life on Earth.

Photo: © naturepl.com / Edwin Giesbers / WWF

WWF Network Income 2013

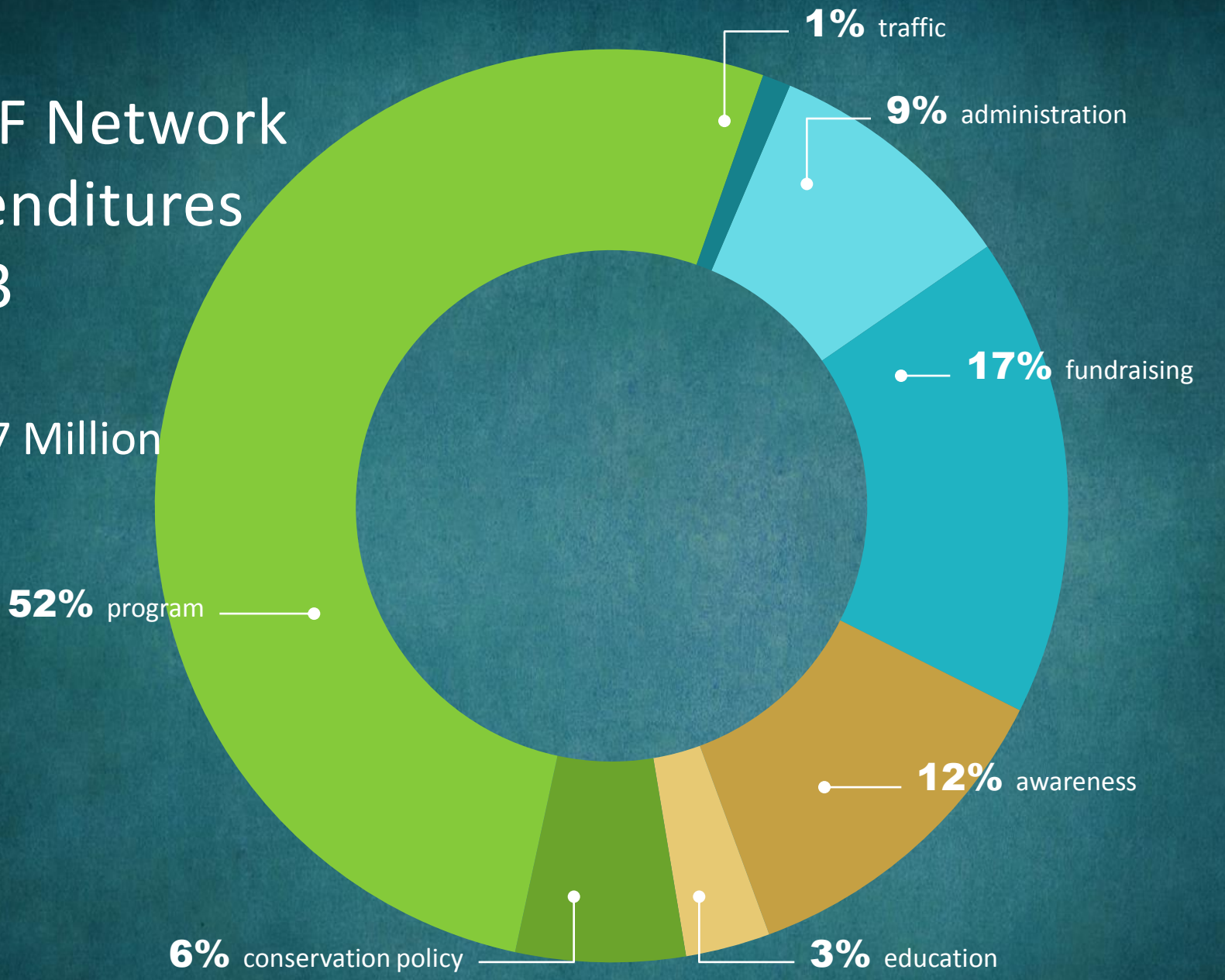
$870 Million



Figures adjusted for 2013 Euro-US dollar exchange rates

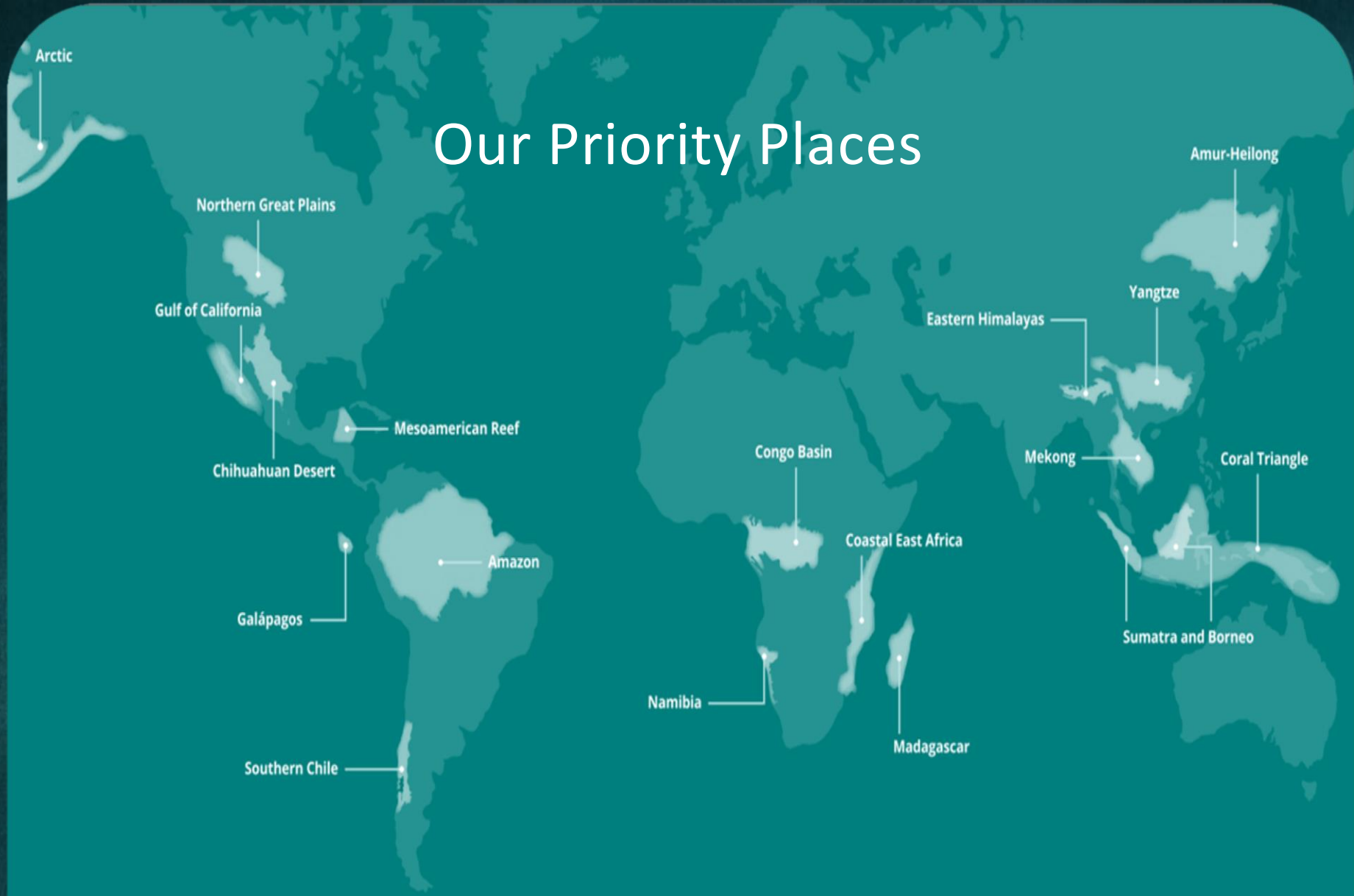
WWF Network Expenditures 2013

$817 Million



Figures adjusted for 2013 Euro-US dollar exchange rates

Our Priority Places

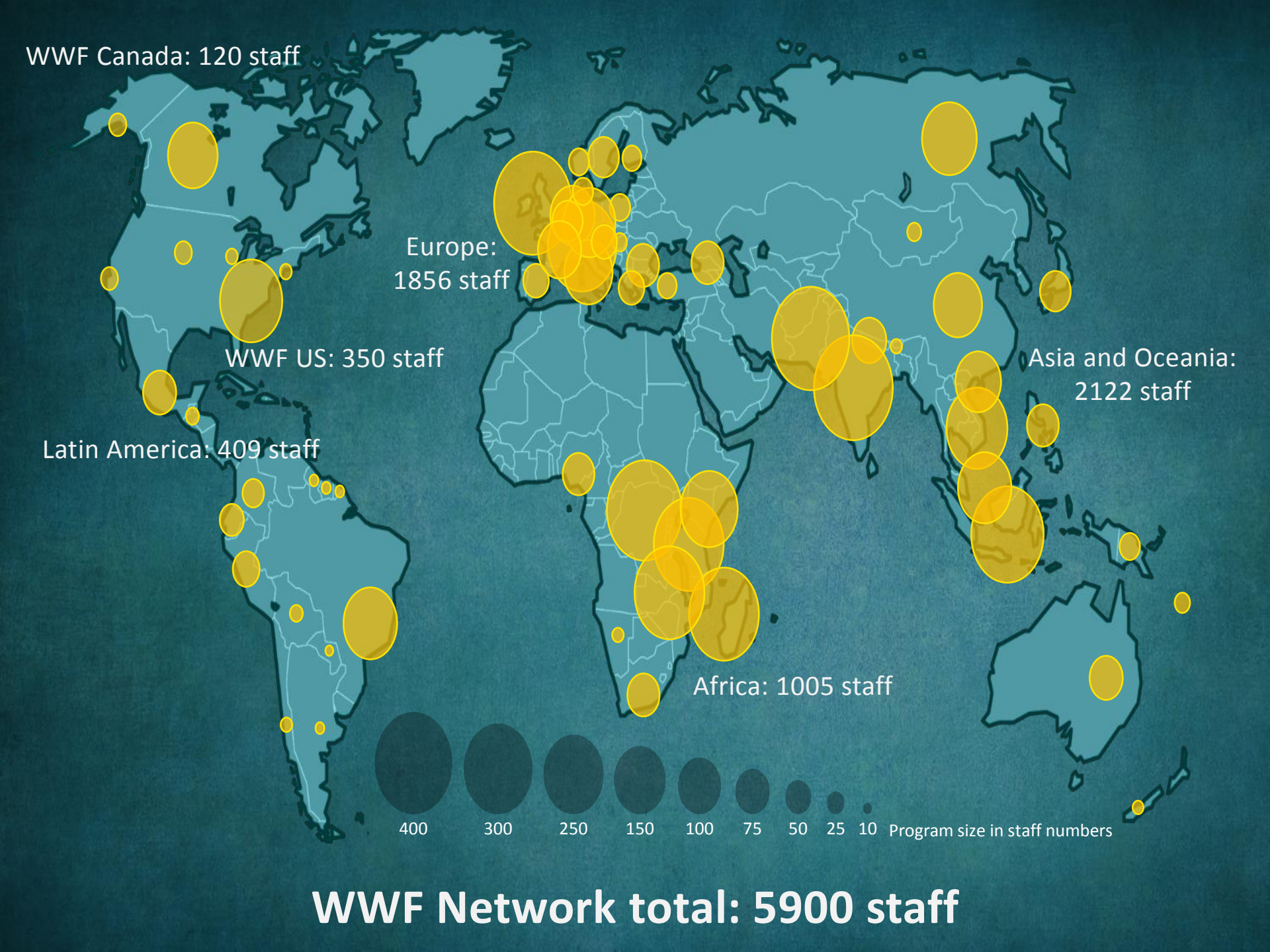


WWF GLOBAL

- 5 million supporters
- 5,900 employees
- 100 countries WWF works in
- 1,300+ on-the-ground projects

WWF-US

- 1.1 million members
- 18 priority places

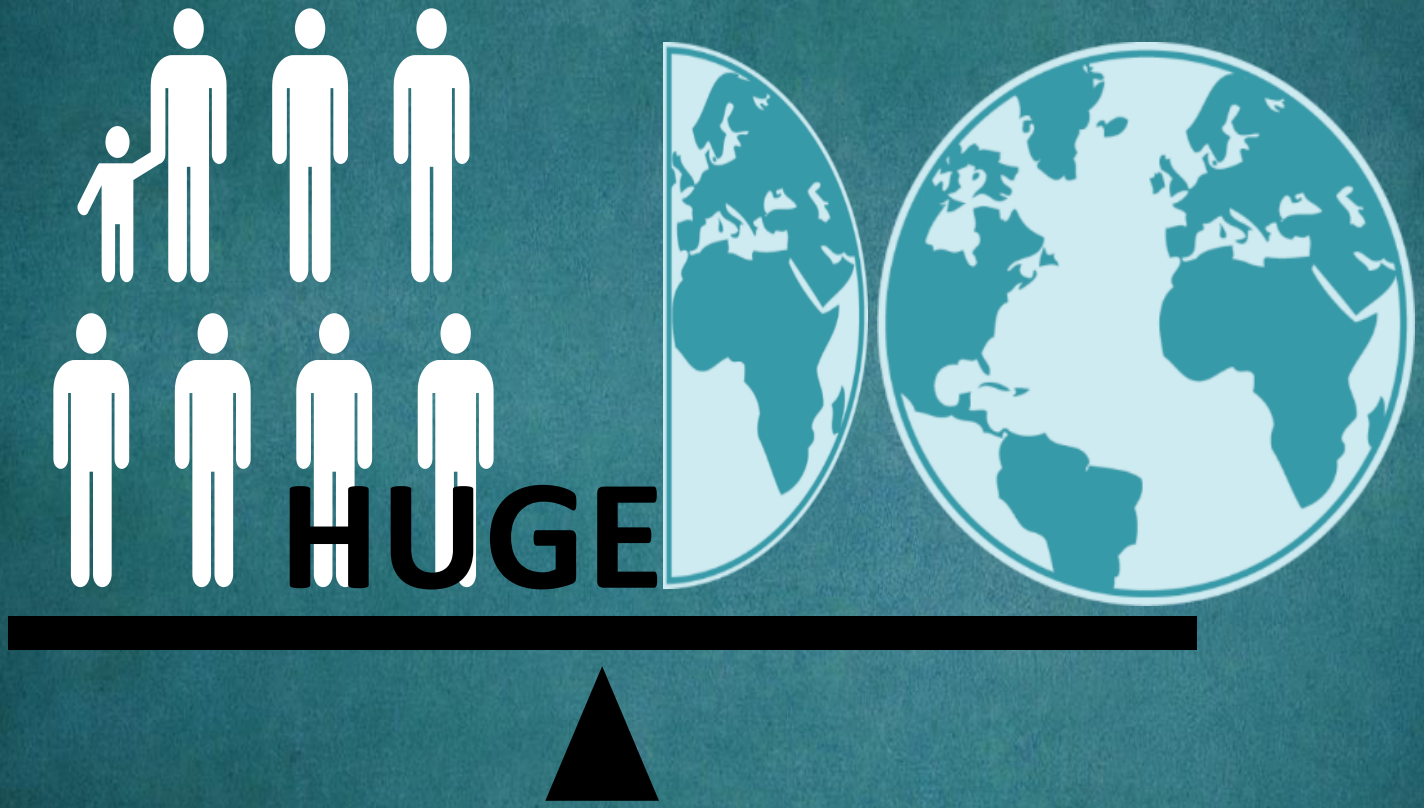


WWF Network total: 5900 staff

Our quest to feed a growing global population is having a **HUGE** impact.

Each year **7.2** **BILLION PEOPLE CONSUME**

1.5 TIMES what the Earth's natural resources can continue to provide.



In short, our planet simply can't replenish itself fast enough to meet expanding human needs.

Source: Living Planet Report 2014. WWF in collaboration with Global Footprint Network, Water Footprint Network and ZSL Living Conservation

2050

We must **FREEZE** the footprint of **FOOD** now!

Source: Living Planet Report 2014. WWF in collaboration with Global Footprint Network, Water Footprint Network and ZSL Living Conservation

A planet under pressure

Over the next 40 years, we'll need to produce as much food as we have in the last 8,000 years of agriculture.

Source: Living Planet Report 2014. WWF in collaboration with Global Footprint Network, Water Footprint Network and ZSL Living Conservation

A planet under pressure

By 2025, at least 3.5 billion people will live in water-stressed river basins.

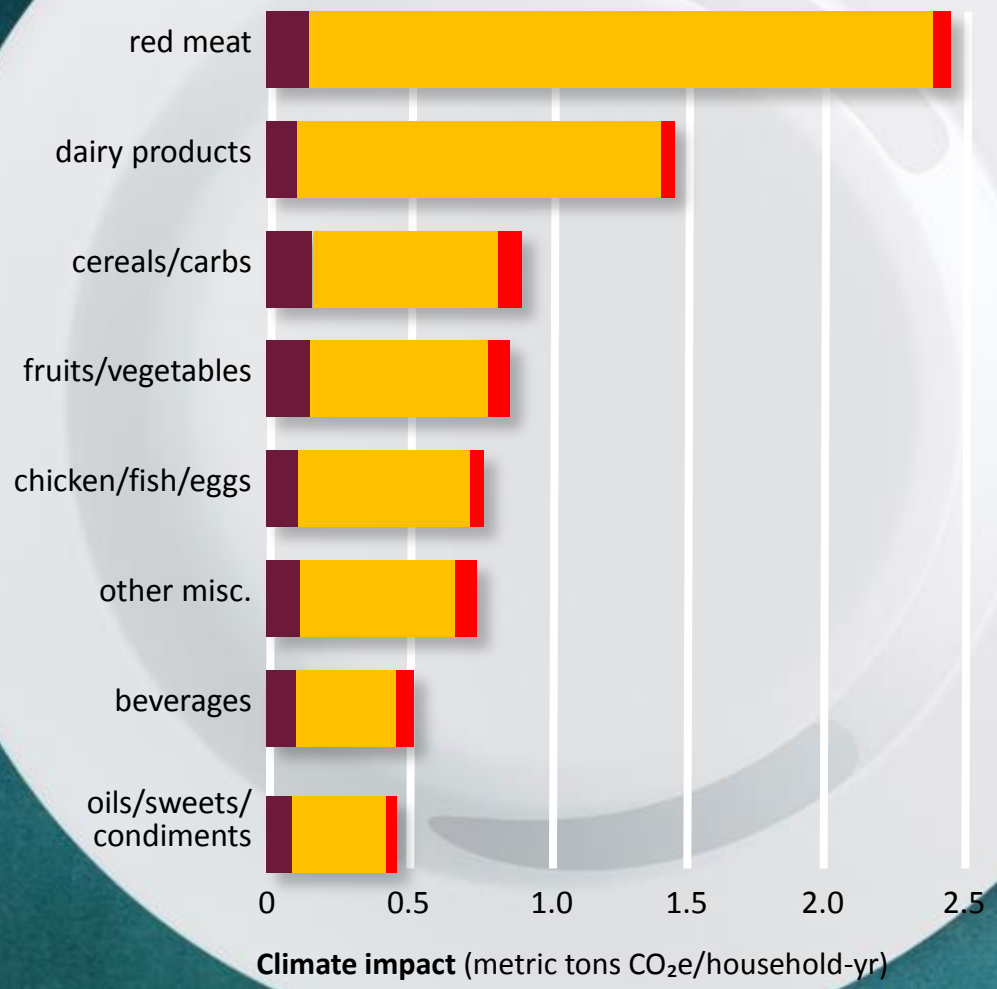
Source: Living Planet Report 2014. WWF in collaboration with Global Footprint Network, Water Footprint Network and ZSL Living Conservation

Water footprint

	Raw material input	Water to produce input
1 cotton t-shirt	**4 oz** ginned	**500 to 2,000** liters of water
1 liter of soda	**6 T** sugar	**175-250** liters of water
1 oz slice of cheese	**6 oz** milk	**40** liters of water
1 double hamburger	**8 oz** beef	**3,000 to 15,000** liters of water

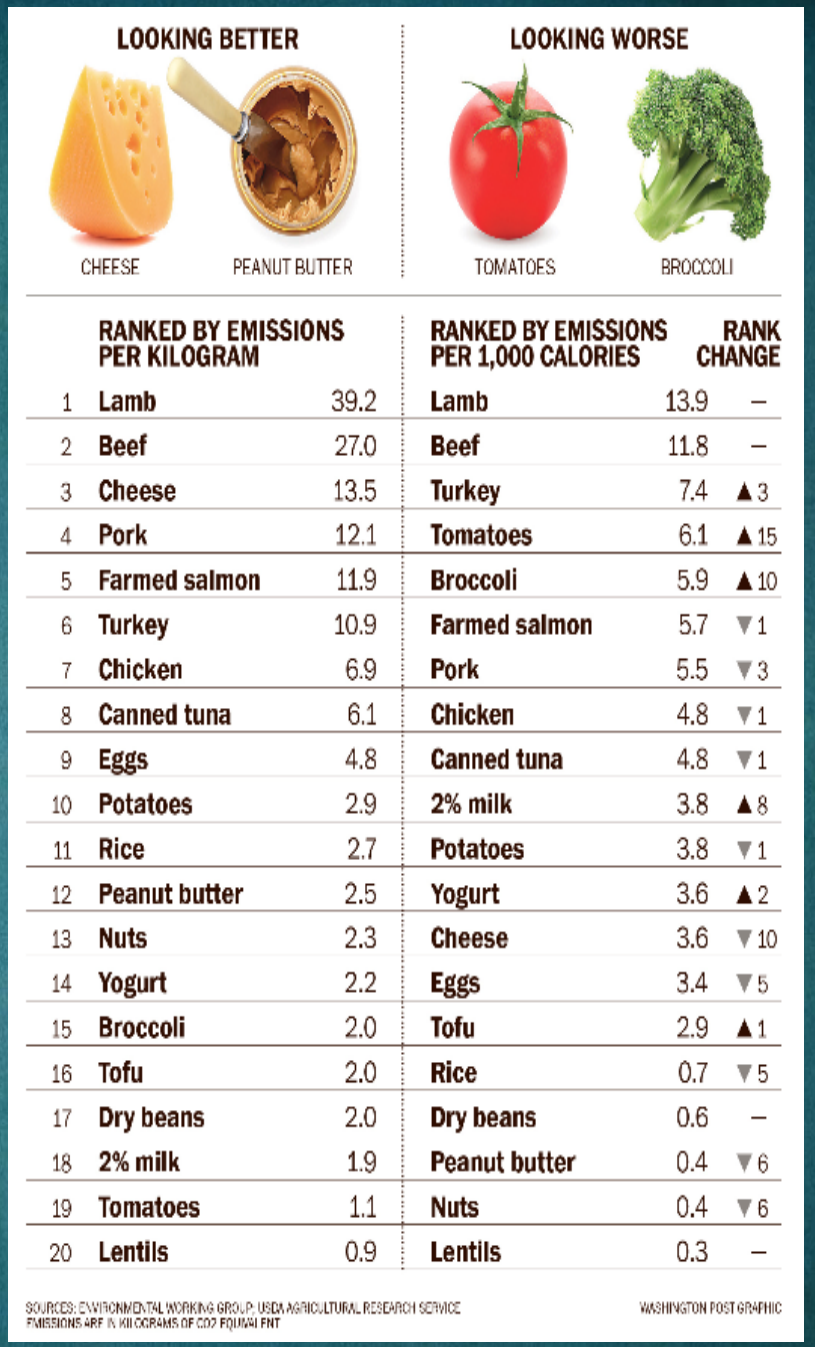
Source: Hoekstra, A.Y., Chapagain, A.K., Aldaya, M.M., Mekonnen, M.M. (2011) The water footprint assessment manual. Setting the global standard. Earthscan, London.

Total greenhouse gas emissions by supply chain tier associated with household food consumption in the U.S.



"The Problem of What to Eat" *Conservation.* Natasha Loder, Elizabeth Finkel, Craig Meisner, and Pamela Ronald. July-September 2008 9(3):31

Rank of different foods by GHG emissions per Kg versus per 1,000 calories



	RANKED BY EMISSIONS PER KILOGRAM		RANKED BY EMISSIONS PER 1,000 CALORIES	RANK CHANGE
1	Lamb	39.2	Lamb 13.9	–
2	Beef	27.0	Beef 11.8	–
3	Cheese	13.5	Turkey 7.4	▲3
4	Pork	12.1	Tomatoes 6.1	▲15
5	Farmed salmon	11.9	Broccoli 5.9	▲10
6	Turkey	10.9	Farmed salmon 5.7	▼1
7	Chicken	6.9	Pork 5.5	▼3
8	Canned tuna	6.1	Chicken 4.8	▼1
9	Eggs	4.8	Canned tuna 4.8	▼1
10	Potatoes	2.9	2% milk 3.8	▲8
11	Rice	2.7	Potatoes 3.8	▼1
12	Peanut butter	2.5	Yogurt 3.6	▲2
13	Nuts	2.3	Cheese 3.6	▼10
14	Yogurt	2.2	Eggs 3.4	▼5
15	Broccoli	2.0	Tofu 2.9	▲1
16	Tofu	2.0	Rice 0.7	▼5
17	Dry beans	2.0	Dry beans 0.6	–
18	2% milk	1.9	Peanut butter 0.4	▼6
19	Tomatoes	1.1	Nuts 0.4	▼6
20	Lentils	0.9	Lentils 0.3	–

SOURCES: ENVIRONMENTAL WORKING GROUP; USDA AGRICULTURAL RESEARCH SERVICE
EMISSIONS ARE IN KILOGRAMS OF CO2 EQUIVALENT

WASHINGTON POST GRAPHIC

Food became a key component of the WWF Goals for 2020 and beyond

By 2020, populations of the most ecologically, economically and culturally important species are restored and thriving in the wild.

By 2020, conserve the world's most important forests to sustain nature's diversity, benefit our climate and support human well-being.

By 2020, the world's major river basins have measurably improved the sustainability of their freshwater systems in order to maintain nature's diversity, strengthen climate resiliency and support human well-being.

By 2020, healthy and resilient marine ecosystems support abundant biodiversity, sustainable livelihoods and thriving economies.

Freeze the Footprint of Food – Protect the natural resource base while sustainably producing enough food to meet the needs of all.

Build a climate-resilient and zero-carbon world, powered by renewable energy.

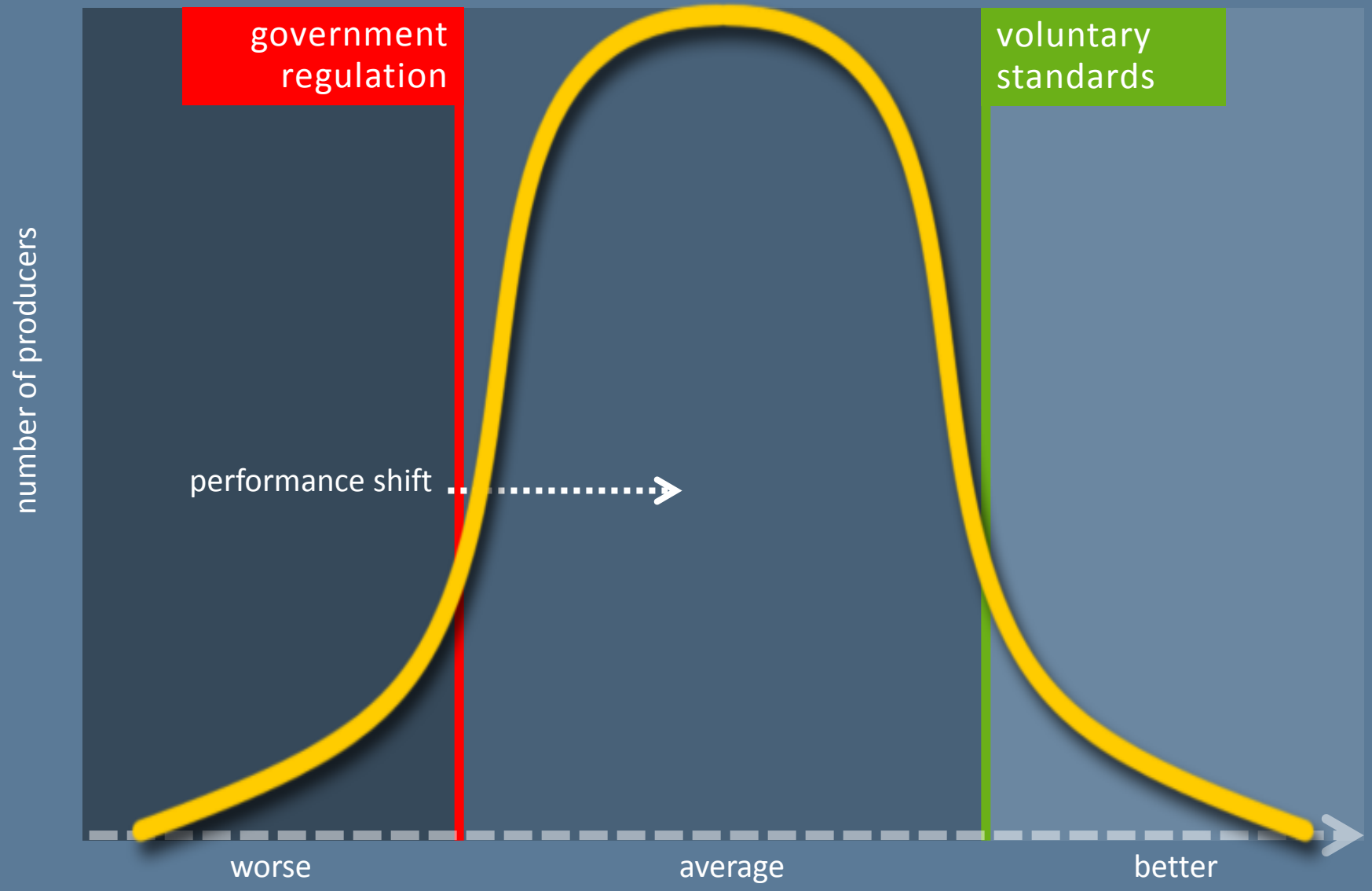
Food Goal – 15 Key Commodities

Productivity

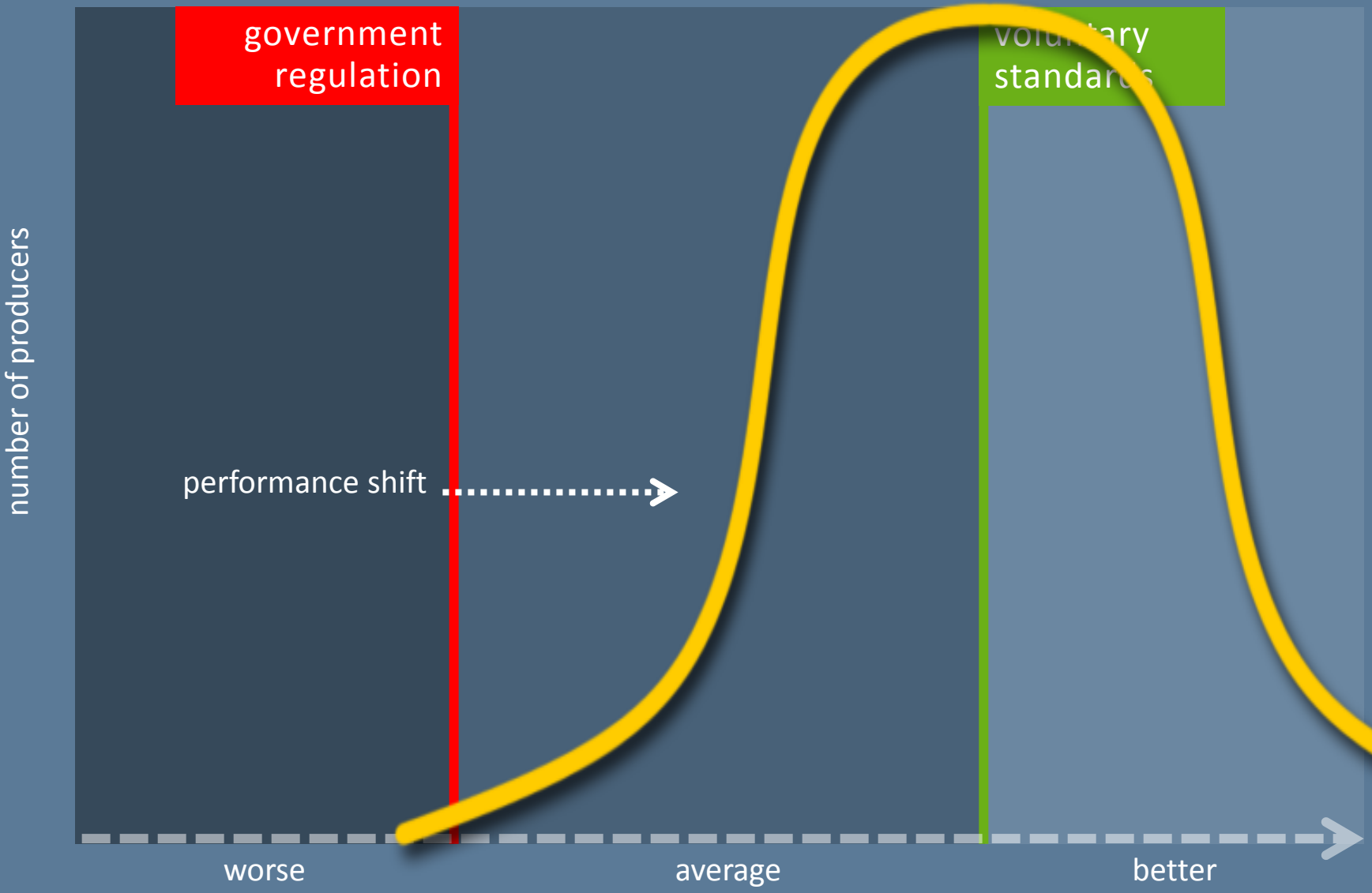
Waste

Food Goal – 2 focuses

Shifting the Curve: Reward the best or move the rest?



Shifting the Curve: Reward the best or move the rest?



Food Goal – Modus operandi

Doing

Influencing

- Awareness
- Consensus
- Opportunities
- Knowhow

How?

Working with business, government and communities to find and influence the adoption of solutions that will improve efficiency in the use of natural resources, reduce waste, and eliminate illegality.

We have to do more with less. Much less.

"Supply risk from unsustainable sourcing can destroy reputations, brands, biodiversity, communities and generate expensive legal disputes to companies and government".

WWF

Some WWF initiatives and partners in animal protein

"They stand for more than just a bottom line"

YOU can make a difference!

www.worldwildlife.org

www.facebook.com/worldwildlifefund

twitter.com/world_wildlife

Academy of Nutrition and Dietetics Foundation

THANK YOU!

carlos.saviani@wwfus.org

What are Standards of Professional Performance?

Imagine a World Where…

All eaters have equitable and optimal access to food and water now and in the future

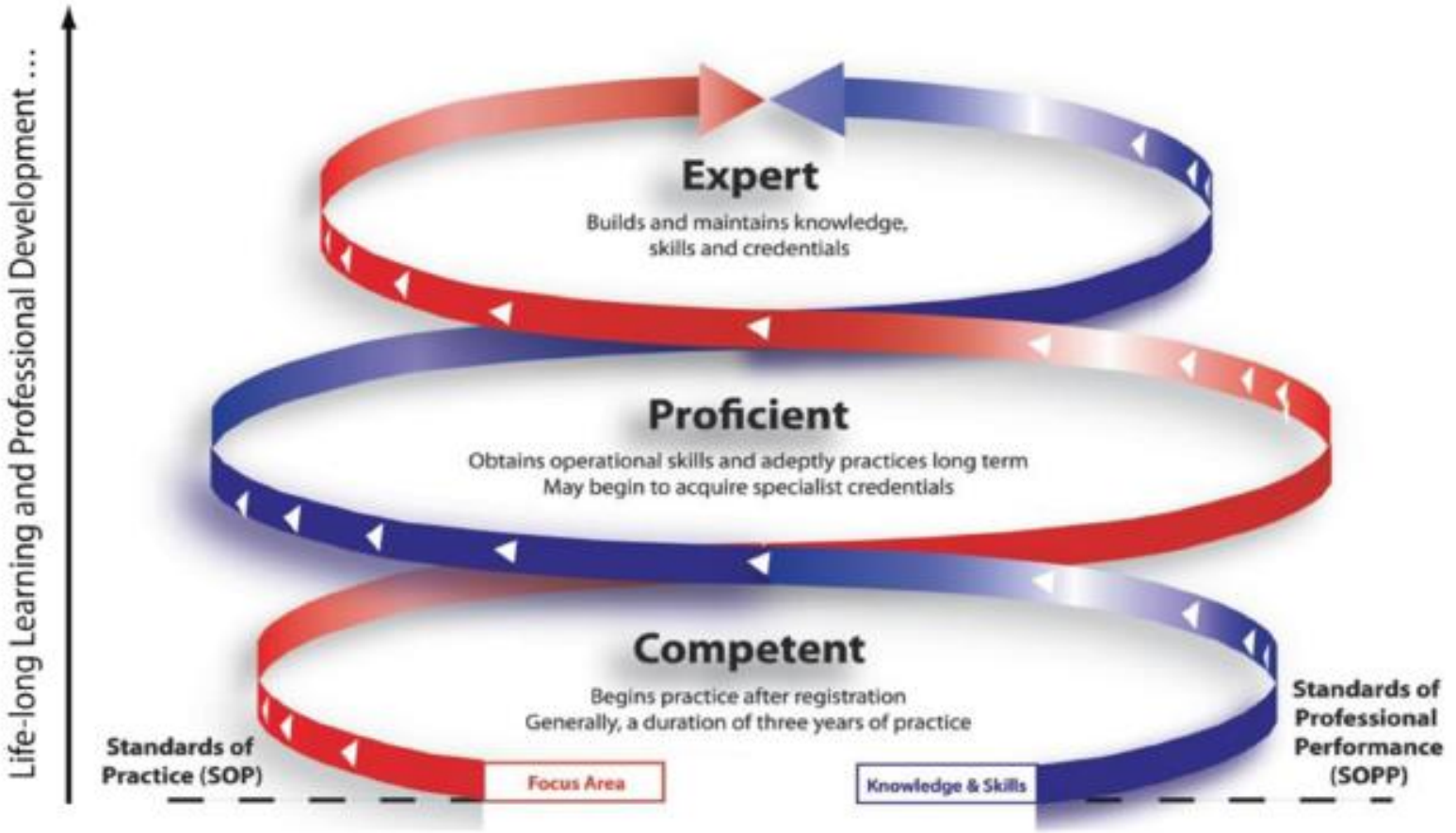
All RDNs are experts in Sustainable, Resilient, and Healthy Food and Water Systems

RDNs are in high demand for Sustainable, Resilient, and Healthy Food and Water Systems work

Why Should RDNs be Involved?

- Growing interest among public, institutions, industry
- RDNs play unique & pivotal role
- RDNs are being called upon
- RDNs have opportunity and responsibility
- *RDNs can make a difference!*

What are SOP and SOPPs?



Adapted from the *Dietetics Career Development Guide*. For more information, please visit www.eatright.org/futurepractice

Figure 2. Standards of Professional Performance for Registered Dietitian Nutritionists (Competent, Proficient, and Expert) in Sustainable, Resilient, and Healthy Food and Water Systems.

Tagtow A, Robien K, Bergquist E, Bruening M, Dierks L, Hartman B, Robinson-O'Brien R, Steinitz T, Tahsin B, Underwood T, Wilkins J. Academy of Nutrition and Dietetics: Standards of Professional Performance for Registered Dietitian Nutritionists (Competent, Proficient, and Expert) in Sustainable, Resilient, and Healthy Food and Water Systems. *J Acad Nutr Diet*. 2014: 114(3);475-488.

FROM THE ACADEMY
Standards of Professional Performance

Academy of Nutrition and Dietetics: Standards of Professional Performance for Registered Dietitian Nutritionists (Competent, Proficient, and Expert) in Sustainable, Resilient, and Healthy Food and Water Systems

Angie Tagtow, MS, RD, LD; Kim Robien, PhD, RD, CSO, FAND; Erin Bergquist, MPH, RD, LD, CNSC; Meg Bruening, PhD, MPH, RD; Lisa Dierks, RD, LD; Barbara E. Hartman, MS, RD, LD; Ramona Robinson-O'Brien, PhD, RD; Tamara Steinitz, MS, RD; Bettina Tahsin, RD, LDN, CDE; Teri Underwood, MS, RD, CD; Jennifer Wilkins, PhD, RD

ABSTRACT

Sustainability is the ability of a system to be maintained over the long term. Resilience is the ability of a system to withstand disturbances and continue to function in a sustainable manner. Issues of sustainability and resilience apply to all aspects of nutrition and dietetics practice, can be practiced at both the program and systems level, and are broader than any one specific practice setting or individual intervention. Given an increasing need to apply principles of sustainability and resilience to nutrition and dietetics practice, as well as growing interest among the public and by Registered Dietitian Nutritionists of health issues related to food and water systems, the Hunger and Environmental Nutrition Dietetic Practice Group, with guidance from the Academy of Nutrition and Dietetics Quality Management Committee, has developed the Standards of Professional Performance as a tool for Registered Dietitian Nutritionists working in sustainable, resilient, and healthy food and water systems to assess their current skill levels and to identify areas for further professional development in this emerging practice area. This Standards of Professional Performance document covers six standards of professional performance: quality in practice, competence and accountability, provision of services, application of research, communication and application of knowledge, and utilization and management of resources. Within each standard, specific indicators provide measurable action statements that illustrate how sustainable, resilient, and healthy food and water systems principles can be applied to practice. The indicators describe three skill levels (competent, proficient, and expert) for Registered Dietitian Nutritionists working in sustainable, resilient, and healthy food and water systems.

J Acad Nutr Diet. 2014;114:475-488.

What are SOPPS in Sustainable, Resilient and Healthy Food and Water Systems?

- Key resource for all RDNs
- Can be integrated into all practice areas
- Six Standards of Performance
- Specific indicators to apply to practice
- Describe skill levels

Standard 2. Competence & Accountability

Indicators for Standard 2: Competence and Accountability					
Bold Font Indicators are Academy Core RDN Standards of Professional Performance Indicators			**The "X" signifies the indicators for the level of practice**		
Each RDN:			**Competent**	**Proficient**	**Expert**
2.7	**Engages in evidence-based practice and utilizes best practices**		**X**	**X**	**X**
	2.7A	Critically analyzes and incorporates SRH food and water systems best practices and evidence-based research from multiple disciplines into decision making		X	X
	2.7B	Participates in committees, councils or task forces that shape evidence-based practice and/or best practices in SRH food and water systems		X	X
	2.7C	Presents SRH food and water systems topics at professional workshops, conferences, and meetings		X	X
	2.7D	Develops, directs, and manages SRH food and water systems professional workshops, conferences, and meetings			X

Tagtow A, Robien K, Bergquist E, Bruening M, Dierks L, Hartman B, Robinson-O'Brien R, Steinitz T, Tahsin B, Underwood T, Wilkins J. Academy of Nutrition and Dietetics: Standards of Professional Performance for Registered Dietitian Nutritionists (Competent, Proficient, and Expert) in Sustainable, Resilient, and Healthy Food and Water Systems. *J Acad Nutr Diet*. 2014: 114(3);475-488.

How Can I Use the SOPPs?

- Assist in understanding
- Evaluate and demonstrate current knowledge
- Identify areas for further development
- Expand practice
- Foundation for accountability
- Strategic planning
- Guide continuing education
- Assist educators
- Create new practice areas
- Guide future development of subject matter
- Expand positive impacts of RDNs

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Q & A

View recorded webinars at www.eatright.org/foundation/kidseatright

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