May 10, 2019

Our Future Depends on Change
A new UN-backed report states land and sea use is the leading cause for the degradation of our planet

Since 1970, global food crop production value has increased 300%, but the growth has come at the expense of land and forest degradation worldwide, according to an extensive report from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

The report names land and sea use as one of the top five drivers for the recent changes in nature, but it also emphasizes the importance of food production for cultures and societies around the world. You can read the full news release here.

Most news outlets are focusing on overall human activity as the reason for the decline in natural habitats and species. Many think the current global response is insufficient--and transformative changes are needed to restore and protect nature.

Farmers and agriculture groups are inherently tied in with such reports, and environmental concerns have been at the forefront as long as food production has occurred. The IPBES report will generate various responses. For example, the British National Sheep Association says farmers are improperly portrayed and unfairly blamed for environmental issues. Other farm groups have explained that food production techniques in many parts of the world are becoming more sustainable.

Borlaug CAST Communication Award winners often make thoughtful, science-based comments about agriculture sustainability. We recommend you follow Frank Mitloehner, Marty Matlock, Jayson Lusk, and the seven other respected experts. They are all working on intelligent, common sense solutions to the challenges of food production and environmental sustainability.

News and Views

Trade, Tariffs, Talks, and Agriculture: President Trump announced tariffs on $200 billion worth of Chinese goods, China vowed to
Ag Award Info
Iowa State University's Leopold Center for Sustainable Agriculture seeks nominations for its annual sustainable agriculture award. Nomination forms are located here.

Ag and Tech
North Carolina A&T State University has a rich history of innovation and application of cutting-edge technology throughout its College of Agriculture and Environmental Sciences.

Science and Agriculture
A University of Missouri professor, Thomas Spencer, was elected to the National Academy of Sciences in light of his research on livestock fertility and reproductive biology.

Facebook Study
A Cornell researcher is collaborating on a study examining Facebook data to look for patterns in "problematic sharing," the posting of links to stories that have already been flagged or proven false.

Send in Ideas
CAST welcomes suggestions for future publications and projects.

CAST Social Media

Cattle, Research, and Communication
New CAST organizational member promotes credible, science-based information
The National Cattlemen's Beef Association (NCBA) recently joined CAST and appointed Mandy Carr Johnson for the Board of Representatives. Dr. Carr is the Sr. Executive Director for the Science, Culinary, and Outreach team at NCBA. This department includes programs and a team of 18 staff members focused on human nutrition research and influencer outreach, product quality, sustainability, and beef safety research—as well as the NCBA Culinary Center, funded by the Beef Checkoff.

On behalf of the Beef Checkoff, the National Cattlemen's Beef Association manages programing to help build demand for beef. One of the cornerstones of this work is research in the areas of beef safety, human nutrition, product quality, sustainability, and culinary and consumer market research. These research results are shared on beefresearch.org and are leveraged into consumer and influencer information on beefitswhatsfordinner.com.

Like CAST, NCBA and the work it conducts on behalf of the Beef Checkoff provide credible, science-based information to a wide audience through online resources and personal engagements.

**Friday Notes News Categories**

Photos courtesy of the Agricultural Research Service (top masthead); TopLatest News (globe at right). P. 1 turtle pic from msn.com, globe pic from associationsnow.com, goat pic from lottery.com, and Peterson brothers photo from iptv.org. Animal Sec. map from sciencemag.org and turkey pic from usda.org. Food Sec. coffee pic from precisionnutrition.jpg and waste pic from cropmobster.com. Plant Sec. sheep pic from feedio.net. Inter. Sec. countryside pic from geneticliteracyproject.com and dust storm pic from sunraysiadtaily.com. Gen. Sec. brain graphic from healthyfellow.jpg and cell graphic from cornell.edu. Unless otherwise noted, photos courtesy of the USDA Agricultural Research Service.

**Animal Agriculture and Environmental News**

Manure Happens: This map shows that most manure is where farmers need it—in their own backyards. Researchers used data on livestock density and
Put Another Beef Cut on the Barbie (video): As grilling season gets fired up, cattle producers are celebrating Beef Month and promoting the nutrients in their product.

Pork Situation in China: The UN is projecting at least a 10% cut in China’s pig meat output in 2019 due to an African swine fever outbreak.

Pig Precautions: Pork associations and veterinarians released additional information to pork producers about the risks of African swine fever and other foreign animal diseases from being transmitted via feed or feed ingredients.

Grazing in the Grass: Kansas State University researchers found that a grazing system shown to be beneficial for the performance of steers also has great potential for cow-calf producers.

Talking Turkey: This overview of the progress made in the raising of turkeys during the last 25 years focuses on the fact that operations now involve more management of people and processes.

Poultry Automation: With growing shortages of skilled labor, this poultry company is looking for ways to intensify automation levels in poultry processing plants.

Food Science and Safety News

Acquired Tastes (video): A host of biological and cultural factors explains why adults warm up to foods they hated as children. Maybe that explains reactions to vegemite, kale, and broccoli.

Something Fishy: This company is racing to bring to market what is known as cell-based seafood—grown from cells in a lab, not harvested from the oceans.

Research about Food Waste: Check out the solid, science-based information in the CAST Issue Paper, Food Loss and Waste. Related link in caption at right.

Tech My Food: According to this report, technology helps food manufacturers produce more efficiently for a growing world population.

Beverage Preferences: This research tries to explain variations in our taste genes that could explain our beverage preferences.

Edible Seaweed: This foodie says kelp is delicious, versatile, and sustainable for ocean farming.

Plant Agriculture and Environmental News
Rising Waters and Ag (video): Flooding on the Mississippi is still affecting agricultural product shipments.

Soil Study: At the University of Nevada-Reno, the Sullivan Lab seeks to understand the fundamental role of soils. Check out their programs and research here.

Wetlands and Water Quality: Wetlands improve water quality downstream, protect nearby towns from flooding, enhance wildlife habitats, and provide outdoor recreational and educational opportunities.

Nitrogen Management: This report provides a comprehensive dataset about on-farm nitrogen management practices in North Carolina to improve operations, economics, and environmental outcomes.

Lawn Zen: This archived blog covers issues such as pink grass, robotic mowers, and Ray Bradbury's lawn. See related item in caption at upper right.

Get Tiny or Get Out: Scientists have developed gene-edited tomatoes to have tinier leaves and stems. This could make them more productive for growers with limited space.

Corn Planting Info: Research analyst Michelle Mensing looks at corn planting trends, and she considers machinery, weather, and other factors. Note: Michelle was a talented Iowa State University student intern at CAST a few years ago.

International News

McMeatless? (video): The McDonald's chain is now selling a vegan burger in Germany. A related article considers veggie burger nutrition and points out the processed-food aspects of the new trend.

Students Show the Way: Young people in the Philippines are helping to transform their elementary schools into small-scale gardens in order to supplement the food supply of local residents and schools.

Dairy Growth in India: India's dairy producers have skimmed milk powder to thank for a revival in dairy exports after four years of stagnating growth.

Corn Collaboration in China: Cargill will invest $112 million to expand its corn-processing facility in China as part of a joint initiative with the government there.

Cutting Emissions Brings Controversy: New Zealand is proposing ambitious targets to cut the country's nonagriculture carbon emissions to zero by 2050—but some farmers are upset with cuts they are required to make.

Weed Control: Chinese researchers recently generated several herbicide-tolerant wheat germplasms using base editing to facilitate weed control in wheat fields.
**General Interest News**

A Load of Rubbish (video): Using pressure sensors, a prototype system that can automatically sort recyclable trash has been developed.

Students and Farm Markets (video): A new farmers market is bringing fresh, locally grown fruit, veggies, and meat to the Cal Poly campus, and it offers a variety of products made by students.

Graduation Time: Commencement activities abound at universities around the country, and this Purdue biochemistry graduate enters the work force with the distinguished G.A. Ross Award in his resume.

Organs in the Air: University medical experts are trying to reduce transport inefficiencies that contribute to wasted organs for transplant. A specially crafted drone is a key to the process.

Aquifer Use: The Ogallala Aquifer lies under eight states and supports much agriculture, but reports indicate it is being used faster than it can be replenished in some areas.


Can You Read My Mind? (video): According to this neurotech research, communicating through thoughts alone is possible—with a little technical assistance.

Bio-plastic: Ohio State University researchers may have come up with a material that can replace plastic. They call it a bio-plastic because it is made from bacteria and rubber.

**CAST Information**

Check out CAST’s page at the YouTube site to view highly regarded ag-science videos about probiotics, food safety, and water issues—or the latest video dealing with proposed mandatory labeling of GMO food items.

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