GAP REPORT® SOCIAL MEDIA GUIDE

Virginia Tech College of Agriculture and Life Sciences (VT CALS) is releasing the **2019 Global Productivity Report®** (GAP Report®): **Productivity for Sustainable Diets, and More** on October 16, 2019 in Des Moines, Iowa, at the World Food Prize.

The event will be streamed live from 11 AM Central / 12 PM Eastern Time at globalagriculturalproductivity.org.

Press releases for the GAP Report can be downloaded from globalagriculturalproductivity.org.

Top Line Messages of the Report:

By accelerating productivity growth, particularly in small and medium-scale livestock production, we can achieve global nutrition and environmental goals without eliminating the animal-sourced foods consumers need and want.

Environmental sustainability initiatives should prioritize regions experiencing rapid population growth, low rates of agricultural productivity, and significant shifts in consumption patterns - the primary drivers of unsustainable agricultural practices, such as converting forests to crop and rangeland.

Global agricultural productivity, measured as Total Factor Productivity, is growing at an average annual rate of 1.63 percent, less than the 1.73 percent required to sustainably produce sufficient nutritious food for 10 billion people in 2050.

Total Factor Productivity in low-income countries is alarmingly low, growing at 1.00 percent annually, far below the UN SDG target of doubling the productivity of the lowest-income farmers.

Innovative agricultural technologies and best farm management practices, combined with attention to ecosystem services, drive productivity growth and can be tailored for all scales of agricultural production.

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Hashtags:
#GAPReport
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SOCIAL MEDIA GRAPHICS

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PEST CONTROL AND POLLINATION

Flowering strips, hedgerows, and small forest patches near cropped areas create habitats for insects and animals that provide pollination and pest control.

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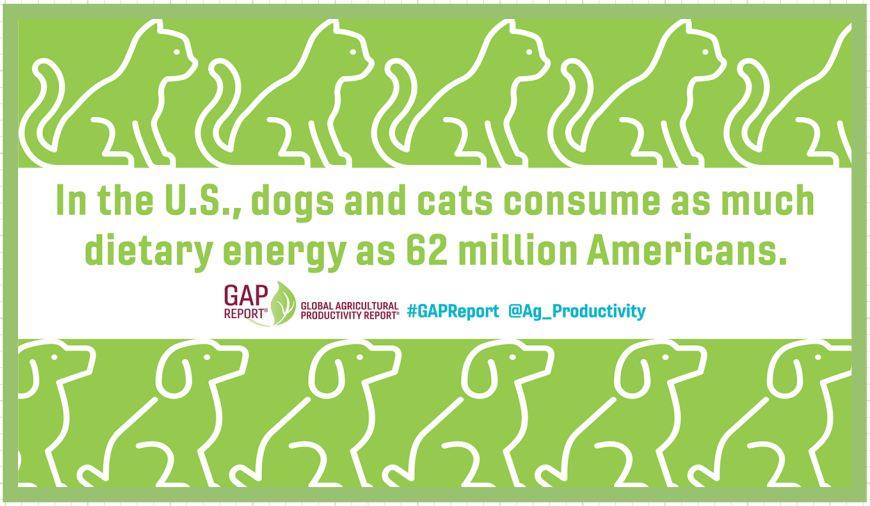
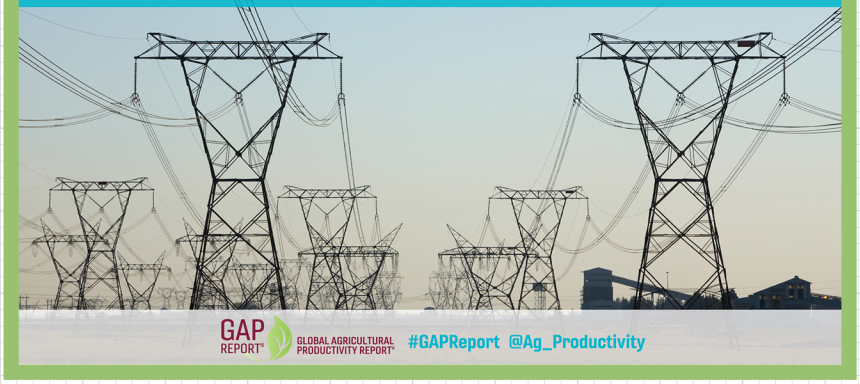


Pig power! Harnessing methane to power homes reduces the carbon footprint of pork production.



SOCIAL MEDIA GRAPHICS

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RUMINANT RECYCLERS

Cows, goats, and sheep eat agricultural by-products that are not consumable by humans and recycle them into nutritious animal proteins and fertilizer.

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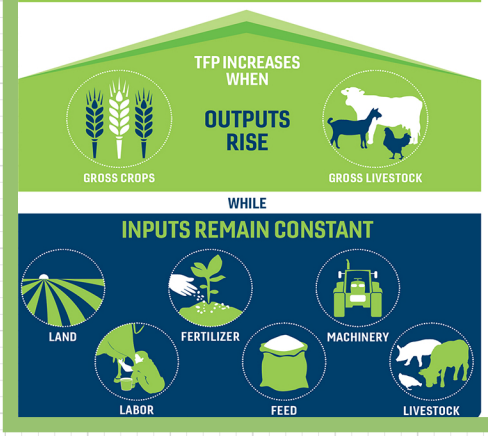

Agricultural productivity is an indicator of INNOVATION IN ACTION and SUSTAINABLE RESOURCE USE

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4.2 trillion gallons of irrigation water would be needed to produce the fruits and vegetables that Americans throw away every year

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EMBARGOED UNTIL 8:00 PM Eastern
October 15, 2019

Report: Accelerating agricultural productivity growth is critical to achieving global environmental, economic development, and nutrition goals

October 16, 2019: The 2019 Global Agricultural Productivity Report (GAP Report): *Productivity Growth for Sustainable Diets, and More*, released today by Virginia Tech's College of Agriculture and Life Sciences, shows agricultural productivity growth – increasing output of crops and livestock with existing or fewer inputs – is growing globally at an average annual rate of 1.63 percent.

According to report's Global Agricultural Productivity (GAP) Index, global agricultural productivity needs to increase at an average annual rate of 1.73 percent to sustainably produce food, feed, fiber, and bioenergy for 10 billion people in 2050.

Productivity growth is strong in China and South Asia, but it is slowing in the agricultural powerhouses of North American, Europe, and Latin America.

The report calls attention to the alarmingly low levels of productivity growth in low-income countries, where there also are high rates of food insecurity, malnutrition, and rural poverty. Agricultural productivity growth in low-income countries is rising at an average annual rate of just 1.00 percent. The UN Sustainable Development Goals call for doubling the productivity of the lowest-income farmers by 2030.

The GAP Report was released at the World Food Prize in Des Moines, Iowa. Speakers at the GAP Report Launch event included Tim Sands, president of Virginia Tech, Miguel Garcia Winder, under secretary for agriculture for Mexico, Rose Mwonya, vice chancellor of the Egerton University in Kenya, and Alan Grant, dean of Virginia Tech's College of Agriculture and Life Sciences.

The report calls for a strong focus on countries with high rates of population growth, persistent low levels of agricultural productivity, and significant shifts in consumption patterns — the primary drivers of unsustainable agricultural practices, such as converting forests to crop and rangeland.

"These productivity gaps, if they persist, will have serious ramifications for environmental sustainability, the economic vitality of the agriculture sector, and the prospects for reducing poverty, malnutrition, and obesity," said Ann Steensland, author of the 2019 GAP Report and coordinator of the GAP Report Initiative at Virginia Tech.

The 2019 GAP Report examines the pivotal role of agricultural productivity in achieving global goals for environmental sustainability, economic development, and improved nutrition.

"Decades of research and experience tell us that by accelerating productivity growth, it is possible to improve environmental sustainability, while ensuring that consumers have access to the foods they need and want," said Tom Thompson, associate dean and director of global programs for the Virginia Tech College of Agriculture and Life Sciences.

Productivity growth is generated by innovations such as precision agriculture technology and improved seeds and best practices for nutrient management and animal health. Attention to ecosystem services, such as pollination and erosion prevention, can increase and sustain productivity gains over time.

The GAP Report looks at the powerful combination of agricultural technology, best farm management practices, and attention to ecosystem services in supporting productivity growth, sustainability, and resilience.

Historically, productivity growth has been strongest in high-income countries, such as the U.S, with significant environmental benefits. Due to widespread adoption of improved agricultural technologies and best farm management practices, especially in high-income countries, global agricultural output has increased by 60 percent, while global cropland has increased by just five percent during the last 40 years.

Between 1980 and 2015, productivity gains led to a 41 percent decrease in the amount of land used in U.S. corn production, irrigation water use declined 46 percent, greenhouse gas emissions (GHG) declined 31 percent, and soil erosion declined (tons of soil loss per acre) by 58 percent.

Animal agriculture in the U.S. has experienced similar productivity gains, dramatically reducing the environmental footprint of the livestock production. According to Robin White, assistant professor of animal and poultry science at Virginia Tech, if livestock production in the U.S. was eliminated, total U.S. GHG emissions would decline by only 2.9 percent.

In the absence of further productivity gains in Total Factor Productivity (TFP), more land and water will be needed to increase food and agriculture production, straining a natural resource base already threatened by climate change.

Unable to afford higher-priced nutrient-dense foods, such as animal proteins and fruits and vegetables, consumers will rely on foods made from cheaper cereal grains for most of their calories, exacerbating skyrocketing obesity rates in adults and children.

The GAP Report describes six strategies for accelerating productivity growth: investing in public agricultural R&D and extension, embracing science- and information-based technologies, improving infrastructure and market access, cultivating partnerships for sustainable agriculture and nutrition, expanding regional and global trade, and reducing post-harvest loss and food waste.

The GAP Report is produced beginning in 2019 by Virginia Tech's College of Agriculture and Life Sciences (CALS). The GAP Report brings together expertise from Virginia Tech and other universities, the private sector, NGOs, conservation and nutrition organizations, and global research institutions. The report is part of the Global Programs Office unit within the College of Agriculture and Life Sciences that builds partnerships and creates global opportunities for students and faculty.

Productivity data for the GAP Index are provided by the USDA Economic Research Service. The GAP Report is available to view and download at www.globalagriculturalproductivity.org. Agricultural productivity, measured as Total Factor Productivity (TFP), increases when the output of crops and livestock increases using existing, or less, land, labor, fertilizer, capital, and livestock.

The GAP Report is supported by the Virginia Tech College of Agriculture and Life Sciences and its Supporting Partners: Bayer Crop Science, Corteva Agriscience™, John Deere, The Mosaic Company, and Smithfield Foods.

The GAP Report's Consultative Partners are ACDI/VOCA, Congressional Hunger Center, Farm Foundation, Global Alliance for Improved Nutrition, HarvestPlus, Inter-American Institute for Cooperation on Agriculture, International Potato Center, The Nature Conservancy, New Markets Lab, Purdue Center for Global Food Security, Supporters of Agricultural Research Foundation, Tanager, and the Daugherty Water for Food Global Institute.

Frequently Asked Questions (FAQs)
Global Agricultural Productivity Report® (2019 GAP Report®):
Productivity Growth for Sustainable Diets, and more

KEY MESSAGES

- By accelerating productivity growth, particularly in small- and medium-scale livestock production, we can achieve global nutrition and environmental goals, while still providing consumers with the animal-source foods they need and want.

- Environmental sustainability initiatives should prioritize regions experiencing rapid population growth, low rates of agricultural productivity, and significant shifts in consumption patterns - the primary drivers of unsustainable agricultural practices, such as converting forests to crop and rangeland.

- Global agricultural productivity, measured as Total Factor Productivity, is growing at an average annual rate of 1.63 percent, less than the 1.73 percent required to sustainably produce sufficient nutritious food and agricultural products for 10 billion people in 2050.

- Total Factor Productivity in low-income countries is alarmingly low, growing at 1.00 percent annually, far below the UN SDG target of doubling the productivity of the lowest-income farmers.

- Innovative agricultural technologies and best farm management practices, combined with attention to ecosystem services, drive productivity growth and can be tailored for all scales of agricultural production.

The 2019 GAP Report is a digital/mobile report.
Visit www.globalagriculturalproductivity.org to view all content.

BACKGROUND INFORMATION

What is the Global Agricultural Productivity Report® (GAP Report®)?

The GAP Report brings together expertise from the private sector, NGOs, conservation and nutrition organizations, Virginia Tech and other universities, and global research institutions. The report is a call to action to invest in proven strategies to produce food, feed, fiber, and biofuel in a sustainable manner to meet the needs of a growing world. The GAP Index tracks global agricultural productivity growth, a key indicator of sustainability.

Created by the Global Harvest Initiative in 2010, the GAP Report is being produced for the first time in 2019 by Virginia Tech, a leading U.S. land-grant university in Blacksburg, Virginia.

The Global Agricultural Productivity (GAP) Initiative is a series of activities that engage faculty members and students of the university in with the GAP Report and its partners.

What is the Virginia Tech College of Agriculture and Life Science (VT CALS)?

The Virginia Tech College of Agriculture and Life Sciences has been in integral part of the university since its founding nearly 150 years ago and is a crucial link in its land-grant mission. Through outreach, innovation, and teaching, the college helps communities around the globe thrive by focusing on the core areas of food, health, the environment, and the economy.

What is CALS Global?

The College of Agriculture and Life Sciences' Global Programs Office connects students and faculty to the world. Meaningful international engagement opportunities allow faculty and students to serve globally, enrich communities at home and abroad, and develop partnerships to address the most-challenging issues faced by society.

The GAP Report will create an even larger knowledge platform for CALS Global to further their mission to create partnerships, discover opportunities, and empower success — to serve globally.

Who are the partners of the GAP Report?

The GAP Report's Supporting Partners are Corteva Agriscience™, the Agriculture Division of DowDupont, John Deere, Bayer Crop Science, The Mosaic Company, and Smithfield Foods. We are joined by Consultative Partner organizations that share their knowledge and experience in agriculture, conservation, nutrition and the needs of small-scale farmers. Consultative partners include ACDI/VOCA, Congressional Hunger Center, Daugherty Global Water for Food Global Institute, Farm Foundation, Global Alliance for Improved Nutrition, HarvestPlus, Inter-American Institute for Cooperation in Agriculture, International Potato Center, The Nature Conservancy, New Markets Lab, Purdue Center for Global Food Security, Supporters of Agricultural Research (SoAR) Foundation, and Tanager.

KEY TERMS AND CONCEPTS

What is "productivity" in agriculture?

Productivity is not just about producing more food or achieving higher yields. Productivity growth – a measure of output per unit of input – makes the best use of **scarce resources**, lowers costs for farmers, helping them to succeed in today's competitive business cycle, and supplies food and agriculture products for consumers at lower prices. Productivity growth is a major determinant of economic expansion and vital for promoting an improved standard of living.

Productivity also frees land, labor, capital and other inputs for use elsewhere in the economy. Improving agricultural productivity is part of a comprehensive strategy to sustainably feed the world, as it reduces impact on precious natural resources while helping to meet the rising demand for food, feed, fiber and biofuels.

How is productivity measured?

The GAP Report® uses a specialized measure, **Total Factor Productivity (TFP)** which is the ratio of agricultural outputs (gross crop and livestock output) to inputs (land, labor, fertilizer, feed, machinery and livestock). **TFP is an indicator innovation in action**; it measures changes in the efficiency with which agricultural inputs are transformed into outputs. **TFP is also an indicator of sustainable resource use**, by showing whether the increased output comes simply from increasing the inputs, or due to better use of existing resources and application of improved products and technologies. This makes TFP a useful guide for farmers and policymakers as they consider future investments in research and development, extension services and agricultural development programs.

What is "sustainability" in agriculture? How does sustainability in agriculture contribute to the United Nations Sustainable Development Goals (SDGs)

Sustainable agriculture must satisfy human needs; enhance environmental quality and the natural resource base; sustain the economic vitality of agriculture; and enhance the quality of life for farmers, ranchers, forest managers, fisherfolk, workers and society as a whole. Sustainable agriculture practices and technologies contribute to many of the 17 UN SDGs by helping to end hunger and malnutrition, by reducing postharvest loss and food waste, by mitigating climate change, and by reducing poverty and promoting good health and strong rural communities.

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Additional Resources

- The 2019 GAP Report is **presented at the World Food Prize Symposium** in Des Moines, Iowa and the event is **streamed live online October 16 from 11:00 AM to 12:30 Central Time** at www.globalagriculturalproductivity.org
- **The GAP Report®** can be found on www.globalagriculturalproductivity.org
- **Follow the event on Twitter**: #GAPReport #AgProductivity @Ag_Productivity