



Agency Priority Goal Action Plan

Increase Utilization of Agriculture Research

Goal Leader(s):

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Overview

Goal Statement

- Increase the utilization of Departmental research results into real world technology improvements to USDA customers, producers, and industry. By September 30, 2021, USDA will develop data-driven methods to measure the impact of research in sustainable agricultural intensification; agricultural climate adaptation; food and nutrition translation; and value-added innovations.

Challenge(s)

- Metrics to measure, track, and communicate the impact of USDA research.
- Existing paradigms surrounding the ability to link scientific research to real world impact.

Opportunities

- Demonstrate the value and impact of USDA research investment.
- Drive operational excellence through assessment of USDA research data and metrics.
- Align agricultural science agenda to identified research priorities.

Leadership & Implementation Team

Deputy Under Secretary of Research, Education, and Economics (REE) Mission Area

Mission Area coordination of science research utilization and related data.

USDA Chief Scientist

Agricultural Research Service (ARS)

USDA's chief scientific in-house research agency tasked with finding solutions to agricultural problems that affect Americans every day from field to table and includes about 690 research projects within 16 National Programs.

National Institute for Food and Agriculture (NIFA)

USDA's primary extramural research, education, and extension funding agency, providing leadership and funding for programs that advance agriculture-related sciences.

Economic Research Service (ERS)

One of USDA's two principal Federal statistical agencies that anticipates trends and emerging issues and conducts economic research.

National Agricultural Statistics Service (NASS)

Chief USDA statistical agency that conducts hundreds of surveys every year and prepares reports covering virtually every aspect of U.S. agriculture.

Office of the Chief Scientist (OCS)

USDA Science and Research coordination and oversight of the Agency Priority Goal (APG).

Goal Structure & Strategies

<p>Goal</p>	<p>Increase the utilization of Departmental research results into real world technology improvements to USDA customers, producers, and industry. By September 30, 2021, USDA will develop data-driven methods to measure the impact of research in sustainable agricultural intensification; agricultural climate adaptation; food and nutrition translation; and value added innovations.</p>
<p>Strategies</p>	<p>A) Conduct and support a continuum of research activities* to be effectively translated into public benefit for various stakeholders.</p> <p>B) Develop and identify indicators that illustrate how USDA research translates into real world technology improvements.</p>
<p>Strategic Outcome (Connection)</p>	<p><u>USDA Goal 1</u>: Ensure USDA Programs Are Delivered Efficiently, Effectively, With Integrity and a Focus on Customer Service.</p> <p><u>USDA Objective 1.4</u>: Improve Stewardship of Resources and Utilize Data-Driven Analyses To Maximize the Return on Investment</p> <p><i>REE Priority: Demonstrate the value and impact of USDA research investments using data analytics.</i></p>

* Research activities include basic and applied research; development; demonstration; individual and community education; workforce development; extension and outreach; and technology transfer.

Summary of Progress – FY20 Q4

FY 2020 is a cornerstone year for USDA Research (through the Office of the Chief Scientist (OCS) and Research, Education, and Economics (REE) Mission Area)) to develop, track and report Key Performance Indicators (KPIs) demonstrating the value and impact of USDA research investments. Building upon the momentum achieved in Q3, the following advancements were made during Q4:

- KPI Performance
 - Since introducing three new KPIs for USDA Science, KPI #2 – *Ag Workforce Development* and KPI #3 – *Influence of USDA Research on Public Policy*, have successfully met their FY 2020 targets. KPI #1 – *Technology Transfer* did not meet its year 1, FY 2020 target and further investigation into the metric is planned in FY 2021.
- Introductory KPI Improvements:
 - During Q4, the three new USDA Science KPIs were reviewed on their annual, first year performance. Limitations in data sources and methodology were discussed and decisions to utilize and/or sunset the beginning KPIs were considered. Through the mechanism of the KPI Innovation Team, new KPI candidates are being developed to improve on these existing measurement areas. The decision to continue to use these three inaugural KPIs was made for FY 2021 with the goal of replacing them with improved measures in FY 2022.
- KPI Data Automation Efforts:
 - KPI leads have worked extensively with the USDA Science dashboard team to move from manual calculation to automation. This automation will be digitally available to agency stakeholders in performance dashboards.
 - A draft 360 performance dashboard for USDA Science Research Utilization was developed in FY 2020. The OCS/Mission area plans to launch the performance dashboard in FY 2021.

Key Milestones

- The following key milestones are intended to cultivate and establish an infrastructure and culture of quantifying research-to-impact within the USDA science portfolio. This effort is predicated on the Agency identifying and developing meaningful KPIs in alignment with the *Evidence-Based Policymaking Act of (2018)*.

Milestone Summary			
Key Milestone	Milestone Due Date	Milestone Status	Comments
1) Conduct inventory of data for measures development within the mission area.	Q1 FY 2020	Completed	The Office of the Chief Scientist (OCS) and the REE Mission Area developed an initial catalogue of its existing data as a first step within a larger effort to evaluate existing data utility and note gaps for measure (KPI) development.
2) Determine the appropriate strategies that support USDA's research initiatives based on revolving needs and infrastructure within REE. Craft performance measures using available data.	Q1 FY 2020	Completed	Thus far, the Agency has identified three areas where research utilization can be measured: 1) Technology Transfer, 2) Agriculture Workforce Development, and 3) Influence of USDA Research on Public Policy. The Agency began tracking these metrics in Q1 of FY20. This is a "first step" in analyzing USDA research impact and utilization by its customers.
3) Review historical (baseline) data for 2-3 KPI test metrics and set targets.	Q1 FY 2020	Completed	For each new KPI, a uniformed methodology was codified and initial data sources identified. Next, multi-year historical data was reviewed and baselines were established. Finally, FY20 targets were set for each of the 3 new KPI's.

Key Milestones (cont'd.)

Key Milestone	Milestone Summary		
	Milestone Due Date	Milestone Status	Comments
4) Track “test-KPI’s” against targets and evaluate findings.	Q2-4 FY 2020	Completed	A Q1, Q2, Q3 and Q4 FY20 “actual” (against target) was reported internally for FY 2020 KPI’s (when applicable.) The decision to use these three “test-KPIs” in FY 2021 was made.
5) Conduct analysis of test-KPI’s tracking performance to determine contribution to research utilization. Review results of KPI test.	Q4 FY 2020	Completed	While the three test-KPI’s were successful in tracking their targets and actuals. Limitations in scope exist in measuring research impact. Therefore, the decision was made to utilize these KPIs in FY 2021, while developing replacement KPIs for introduction in FY 2022 with a broader scope of measuring science impact.
6) Explore opportunities to create efficiencies in data tracking.	Q1 FY 2021	On Target / In Progress	Five key areas of measuring research utilization and impact have been identified and new KPI candidates for each area are being evaluated for FY 2022 introduction.
7) In parallel with the development of USDA’s learning agenda in support of the Evidence Act, identify other areas and needs in support of measuring the utilization of the Agency’s research.	Q1-2 FY 2021	On Target / In Progress	The Office of the Chief Scientist (OCS) proposed two Learning Agenda questions around the topic of quantifying and measuring the impact of USDA Science and Research. These questions will begin work in FY 2021.
8) Drive continuing improvement by identifying new, potential KPIs for measuring USDA’s research utilization.	Q2-4 FY 2021	On Target / In Progress	The KPI Innovation Team is exploring and developing future KPIs candidates for future utilization.

Key Performance Indicators (KPIs)

- To demonstrate the value and impact of USDA research investment, the Agency will develop and identify indicators that illustrate how research translates into real world technology improvements.
- The following three KPIs have been identified as “test measures” for the performance areas of technology transfer, workforce development, and influence of USDA research on policy.

KPI Performance Measure	KPI	Data Source (Current)	Report Frequency
Technology Transfer	<u># of REE Patents Licensed</u> # of REE Patents Issued	OTT*/ARS	Annually
Agriculture Workforce Development	# of AFRI-supported Undergraduate/Graduate/ Post-doctoral Students	NIFA	Annually
Influence of USDA Research on Public Policy	Citations of REE reports	ERS, NASS**	Quarterly

* Office of Technology Transfer
 ** Tracked individually but consolidated for reporting

Data Accuracy and Reliability

Existing methods to collect KPI data are labor intensive. The Agency will investigate options for improving data collection efficiencies.