

CSREES Portfolio Review Expert Panel Report

Portfolio 1.5.2 Animal Production CY 1999 – 2003

REPORT

External Review Completed: March 2004

Portfolio Overview

The CSREES Animal Production Portfolio includes new, emerging, and reemerging animal diseases, animal agricultural security and bio-security, toxicology, and animal welfare. In describing and reporting on the performance of the portfolio, it is important to recognize that an integrated systems approach is utilized in planning, developing, and implementing programs.

The CSREES National Program Leadership Team for Animal Systems recognizes that both animal production and animal protection components are closely linked and interdependent in terms of program development, implementation, and delivery. The Team also recognizes that these components are linked to other major programs areas such as product quality (post harvest), food safety, engineering, waste management, marketing, and economics.

The APP is diverse in terms of animal commodities covered. The portfolio includes research and extension activities directed at animal production systems, including beef cattle, dairy cattle, poultry, swine, aquaculture, sheep and wool, and goats. While broad goals and needs are similar across the various commodities, there are specific needs and priorities within these commodities that are addressed in the portfolio. Program goals and delivery systems also recognize the diversity of needs across and within these commodities in terms of size, concentration, regional differences, levels of integration, and external factors impacting these systems.

The APP encourages multi-disciplinary approaches that address the needs of animal agriculture and the American consumer. The portfolio contains a balance of discipline based components including animal reproduction, nutrition, genetics, physiology, environmental stress, and product quality. The portfolio also includes integrated system-based research and extension programs. Program integration may occur at a commodity-based system level (e.g., beef or dairy), as well as a biological/discipline system level (e.g., reproduction, nutrition, or genetics). As much of the research is very applied in nature, the extension component is highly integrated and not always evident as a separate effort.

The Knowledge Areas aligned with the Portfolio are:

- KA 301 reproduction
- KA 302 nutrition
- KAs 303 and 304 genetics
- KA 305 physiological processes
- KA 306 environmental stress
- KA 307 animal systems and management improved
- KA 308 products (pre-harvest)

Comments on Research & Development Criteria and Dimensions

In 2004 a panel comprised of independent experts from the field was convened to assess and score the current state of the Animal Production Portfolio. A discussion of specific comments and

recommendations related to each of the dimensions of the three Office of Management and Budget (OMB) research and development (R&D) criteria used (relevance, quality, and performance) is provided below.

Relevance

Scope

Relevance and scope are very good. There is no mention of niche or organic products, but these might show up in another portfolio. The portfolio did address minor commodities, such as goats, that have the potential to add a global dimension to the portfolio. The portfolio is attuned to industry, and has both breadth and depth. The funding shifts are moving in the right direction and the shifts are quick, especially for a government agency.

Focus

The focus of the portfolio is in line with its scope.

Emerging Issues

The Animal Production Team has demonstrated its ability with genetics and genomes. The animal ID issue is a good example of finding a home for an emerging issue. Waste management is well addressed and air quality is an example of timely inclusion of an emerging, non-standard animal production issue that is being addressed by the Animal Production Team.

Integration

Integration is solid in overall coverage, but it is apparent that researchers and extension personnel are not communicating as well as they should be.

Multidisciplinary Balance

This topic is referring to disciplinary balance, not multidisciplinary balance, as some topics might be included with the Animal Protection Portfolio. On the positive side, NPLs and KAs make a real effort to work with other organizations (e.g., Agricultural Research Service (ARS)). Some areas had reports and papers documenting their leadership in communications with states, professional societies, etc., intended to effectively bring the federal programs forward. We wish to see NPLs take more risks, think outside the box, and encourage non-traditional approaches. Examples of where this is occurring include genomics, animal identification, and air quality.

Quality

Overall, this portfolio was of variable quality. Evidence of claims could not be assessed because the outcome data provided were insufficient. It may be necessary to revise the Current Research Information System (CRIS) reports and other databases to obtain the necessary information.

Significance of Outputs and Findings

Each KA had some good outputs (e.g., the genome KA had significant findings with some technology transfer; this also was true for the areas of nutrient utilization and waste management), but not all KAs presented their outputs well.

Stakeholder Input

The Animal Production Team has done an excellent job of working with stakeholders. FAIR (1995 and 2002), for example, has been tremendous for setting CSREES priorities. Multistate workshops on reproduction, whose participants include extension personnel and veterinarians, are a classic model of good, integrated technology transfer. The Allerton III workshop (Beyond Livestock Genomics) is an excellent example of CSREES leadership, and the NRSP-8 and germplasm programs are dynamic. The FAIR 2002 process was most recently planned in conjunction with the ARS, which marks the first time that ARS and CSREES animal scientists have worked jointly to plan such a meeting. Situations like these are good opportunities for NPLs to provide leadership to the animal production area.

Portfolio Alignment

The CSREES really has direct control only over non-formula funds. The National Research Initiative Competitive Grants Program has shifted its areas of emphasis over the years and is in alignment with current and emerging issues within animal agriculture.

Appropriate Methodology

The methodology shown for research is solid, but the Review Panel is concerned with voids regarding extension and education methods. The lack of good evidence is a weakness in the total portfolio. The Review Panel judges this area as adequate, based on the total portfolio.

Performance

Overall, some KAs in the Animal Production Portfolio show great progress, but there is no real documentation of extension or teaching.

Portfolio Productivity

In the opinion of the Review Panel, portfolio productivity was mixed, with some KAs providing better evidence than others. Productivity in terms of research measures, such as scientific papers, is strong. However, productivity in terms of technology transfer is poor and must be improved. If technology transfer and other extension activities are taking place, there needs to be a system to report this productivity.

Portfolio Completeness

The Review Panel's comments for this area are similar to those expressed in Portfolio Productivity. Documentation of technology transfer was poor, though other aspects of the portfolio were better. The Review Panel did not see sufficient evidence of portfolio completeness.

Agency Guidance

The Review Panel sees evidence of good guidance in some areas (e.g., working with regional committees), but also sees some voids, such as lack of leadership and documentation for technology transfer and other extension. NPL leadership is judged to be good in research, but poor in technology transfer. The portfolio meets expectations in this area, but no more than that. NPLs need to be dynamic, forward looking, creative, and innovative. We received limited information regarding education.

Portfolio Accountability

A lot of documentation went into this portfolio report, and much of it is well done. Accountability, on balance, is not good. Much progress regarding methods and relevance needs to be done to be useful, meaningful, and comprehensive. The CSREES has an evaluation system for projects up front, but there is no follow up at the end of projects to determine if something really was

accomplished. There is a strong need to improve accountability showing measurable impacts, not just in CSREES, but throughout the system and down to individual investigators.

Comments on Future Directions presented by CSREES

It also might be necessary to train new NPLs in assessment and impact reporting, as there appears to be a failure to see beyond the “we did work” mindset. The CSREES has an evaluation system for projects up front, but there is no follow up at the end of projects to determine if something really was accomplished. There is a strong need to improve accountability showing measurable impacts throughout the system down to individual investigators. CSREES needs an effective reporting system and to more clearly present the objectives of the portfolio. In addition, integration of education into the portfolio is strongly recommended.

Data Issues

The portfolio needs appropriate documentation and evidence. Although the Review Panel has rated its performance area as adequate, this was done mostly on the basis of personal experiences, not presented evidence. The portfolio needs to address the issue of documentation and evidence and implement a better reporting system before the next review.

The lack of good evidence is a weakness in the total portfolio and there is no real documentation of extension or teaching. Documentation of moving information from laboratory to application is limited. Documentation of technology transfer was poor. There is limited information regarding education.

The portfolio needs data to support the integration component. There still are three separate reporting systems, making it difficult to get quantitative data, which is a serious deficiency in the view of this Review Panel. The Review Panel appreciates that changing rules can make reporting integration a challenge, but believes that there is no reason that program and portfolio reporting cannot be more integrated.

There is a need for a mission-driven agenda. Currently, there is no education or technology transfer component apparent at the front end of programs, and no satisfactory reporting at the back end. The CSREES NPLs have the opportunity to provide leadership to the Land-Grant system in this area. Care should be taken not to appear to dictate to the system, especially when relatively little funding is provided, though the same problem of documenting program integration and effectiveness exists at both the state and federal levels. Data resulting from integrated reports of federal activity also would be useful to the states. The reporting system needs improvement to document the evidence—such as external reports, number of papers, patents, intellectual property discovery and disclosure—which is generally lacking or insufficient.

Outcome assessment data and tangible data provided was sparse. It may be necessary to revise the Current Research Information System (CRIS) reports and other databases to obtain the necessary evidence.

The Review Panel feels that the objectives of this portfolio should be updated using current terminology and clearly defined desired impacts and real-world outcomes.

Evaluation Issues

This portfolio provides no evidence of productivity and impacts, such as social or physical measures that would have come from program evaluation results. The Review Panel recommends that the White Paper on Consumer-Driven Agriculture (Evidence Volume II) infuse

NPL thinking and program description. Subsequent Review Panels would benefit from having summaries of White Papers.

The Panel suggested that performance indicators be presented to make it possible for the Panel to fully judge the performance and completeness of the Portfolio. Also, CSREES and NPLs should have better communication with state partners in order to get significant evidence of outputs and impacts. Apparent lack of sufficient communication between former Extension Service and Cooperative State Research Service employees is troubling.

Summary of General Comments and Recommendations

The Animal Production Portfolio shows evidence of outstanding work and accomplishments. It has dedicated NPLs who are involved with stakeholders, who collaborate with other agencies, and who are up to date with current trends within their fields of science. CSREES publications are a great asset for explaining to the field the agencies accomplishment and current and future opportunities. We encourage the Animal Production Team to develop publications for their own area to complement what is on their website.

The Review Panel believes that there are two major, overarching deficiencies that permeate the strengths of the portfolio:

- 1) There is a lack of integration among mission areas.
- 2) There is a lack of measurable outcomes and impacts.

Other deficiencies flow from these deficiencies. Examples of these deficiencies include integration of function, integration of reporting systems, and integration of a priori direct activities. There is also a lack of identification of what measurable impacts are expected (e.g., intellectual property outputs and technology transfer), which is not just a deficiency in the reporting system. Each NPL should develop measurable outcomes and impacts for his or her KAs, by focusing on the using, not just the doing of science—the ends, not the means.

Portfolio Score

Portfolio 1.5.2 received a total score of 81 from the panel. This score places the portfolio in the category 'moderately effective in supporting CSREES objectives.'