

The Challenge of Change

A STRATEGIC PLAN

for the

UNIVERSITY OF CALIFORNIA
DIVISION OF AGRICULTURE
AND NATURAL RESOURCES
1997



HE DANR STRATEGIC PLAN presents a vision for the University of California's

Division of Agriculture and Natural Resources (DANR)—a vision of how we see ourselves contributing to the world of the future, and how we expect to evolve as an organization to better meet the needs of the people of California.

As members of DANR, we share accountability to a mandate common to all land-grant universities: to generate and deliver to the public new knowledge relevant to the needs of society. Given the breadth of issues within the scope of DANR's areas of expertise—agricultural, natural and human resources—it is essential that we focus our limited resources on those issues where we can have the greatest impact on the most critical needs. Further, we must ensure that our organizational structures and operational procedures promote the most efficient and effective use of our human and financial resources.

The *DANR Strategic Plan* provides a framework for making critical decisions at all levels of the Division regarding how we spend our money and our time and how we organize ourselves and conduct our work. This plan reflects the collective judgments and values of the hundreds of DANR scientists and educators who participated in the Divisionwide planning effort of the past two years. Although our fields of expertise and our interests are extremely diverse, a consensus has emerged regarding general program directions and organizational priorities that should guide the Division in the years ahead.

The *DANR Strategic Plan* is not a detailed blueprint that mandates particular programs, organizational structures, or activities. There are many alternative means for implementing the programmatic and organizational priorities declared in the *Strategic Plan*. Implementation of the plan will be a step-by-step interactive process, involving continued interchange among the members of the Division as well as consultation with our external stakeholders.

Strategic planning for DANR does not end with the publication of this document. Each year we will take a fresh look at the issues affecting California's agricultural, natural and human resources and adjust our program priorities accordingly. Likewise we will periodically assess how well our organizational structures and operations are working and make refinements as needed. We will update our *Strategic Plan* on an ongoing basis, so that it will always serve as an up-to-date projection of where the Division is headed.

W. R. Gomes Vice President, Agriculture and Natural Resources May, 1997



ALIFORNIA AND THE WORLD are rapidly changing. The challenge for the University of California's Division of Agriculture and Natural Resources is to anticipate the demands of change while maintaining, in the public's interest, our human and scientific values.

The following complex and interrelated historic trends, among others, have profound implications for DANR's scientific and educational expertise:

The urbanization of California

Accelerated population growth in the state and the world

Increasing competition for land and other natural resources

Threats to environmental quality and rising public concern about environmental health and food safety

Increasing cultural diversity and the socio-economic stratification of California's population

A global economy, interdependence among agricultural and natural resource systems around the world, and increasing international trade

Continuing advances in information systems and communication technology

Continued restructuring of local, state and federal government

Changes in governmental regulations and their influence on agricultural production, and on landscape and natural resource management

These societal and economic developments in California and the world challenge our research and extension system. The state needs more resource-efficient farming and landscape management systems; more environmentally and economically sustainable practices; new approaches to the global marketplace; new models appropriate to a pluralistic society for public health and nutrition education, community and youth development and family support systems; better science education for sound public policies; and more use of advanced communications technology consistent with equitable access to information. In these areas and others, DANR has a crucial role to play.

This *Strategic Plan*, the product of an inclusive process of discussion and deliberation, outlines DANR's response to these challenges of change.

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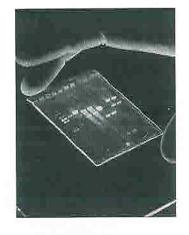
WHAT IS THE DIVISION OF AGRICULTURE AND NATURAL RESOURCES?

DANR is the major land-grant arm of the University of California which is part of a nationwide public university system built, in the words of Lincoln, "on behalf of the people" (Morrill Act, 1862) with Experiment Stations established to develop "useful and practical information . . . and to promote scientific investigations and experiments" (Hatch Act, 1887), and a Cooperative Extension program to "aid in diffusing . . . useful and practical information" (Smith-Lever Act, 1914).

DANR is based on the Berkeley, Davis, and Riverside campuses of the University of California, and in more than 50 regional and county offices throughout the state. The Division is composed of the UC Agricultural Experiment Station (AES) and UC Cooperative Extension (CE), supplemented by 20 statewide special programs and projects, and supported by nine Research and Extension Centers and 33 sites of the Natural Reserve System.

The AES has 650 academic researchers, most of whom also have professorial appointments—typically, 60 percent AES research and 40 percent teaching. They are housed in more than 50 departments, representing dozens of scientific disciplines.

CE, the principal outreach arm of the Division, comprises academic appointees attached to campus departments as CE specialists or to county offices as CE advisors; there are 150 specialists and 280 advisors.





Our vision is characterized by commitment to our mission, belief in our values and understanding of our historic role as educators functioning in a truly public setting. Realities of modern times dictate that we will thrive only by developing partnerships that permit us to leverage and extend our

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resources.

DANR and the planning process

N 1995, DANR BEGAN a strategic planning process based on the premise that form follows function—that an organization's structure and operational procedures should accommodate its sense of purpose and values, and its vision and programmatic goals. A broad cross-section of DANR academic appointees and organizational units, as well as public constituencies served by the Division, have been involved in the planning process.

Much of the strategic planning work has been done by groups of DANR professionals discussing program priorities and organizational management strategies. This process includes two groups whose recommendations are essential elements of this *Strategic Plan*:

- 1. On-going Program Planning Advisory Committees (PPACs) that recommend research and extension priorities for agricultural, natural and human resources, as well as opportunities for integrated programs
- Ad hoc Organizational Strategy Teams (OSTs) that have analyzed the structure and mechanisms of the Division, identified criteria for organizational effectiveness and designed a framework for achieving high priority organizational goals



The resulting *Strategic Plan*—which is intended as a living document, iterative and on-going—has three essential elements: (1) *strategic planning assumptions*, (2) *midterm* (3 to 5 years) program priorities, and (3) long-term organizational management strategies.

This plan is based on strategic planning assumptions regarding how the world is changing (see the preceding section) and regarding DANR's

"mission" or overall purpose as an organization, organizational vision and core values, criteria for determining program priorities.

OUR MISSION

The mission of the University of California Division of Agriculture and Natural Resources is to serve California through the creation, development and application of knowledge in agricultural, natural and human resources.

OUR VISION

We share a sense of what we want to become and contribute as an organization to the world of the future.

In keeping with our mission and consistent with our core values, we will be the link between abstract knowledge and the pragmatic world. With one hand we will generate new knowledge, while with the other hand we will reach out to help people make use of that knowledge to solve everyday problems in the realms of agricultural, human and natural resources.

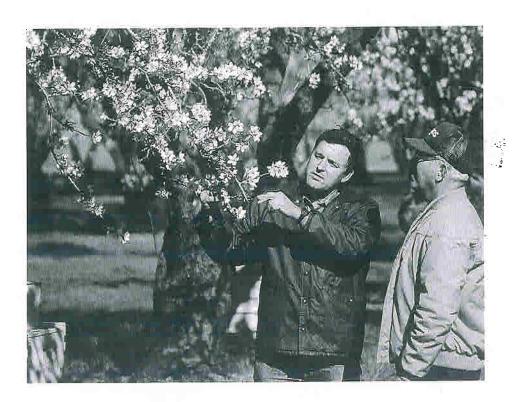
We will actively involve the public in our programs, bringing a global perspective to bear on local issues. Integrating research, education and extension, we will transform ideas into solutions.

Working with our partners within and outside the University, we will connect the people of California with the research-based information that can help them improve their quality of life, and enhance the environment for all.

OUR CORE VALUES

We are committed to the following values that will guide action and decisions at all levels of the organization:

- The highest standards of ethical behavior, honesty and integrity, with the recognition that the trust and confidence of the public is absolutely essential to our success
- Academic excellence and maintaining credibility as an objective source of knowledge
- Scientifically valid research as a foundation for anticipating problems and developing practical solutions
- Responsiveness to state and local needs in California, and consideration of the global context that shapes these needs
- Diversity within our organization, equal access to knowledge by all people and equal opportunity for self-reliance through education
- Collaboration, teamwork and mutual respect among ourselves, in partnership with other organizations, and in interaction with our clientele
- Academic freedom, with the recognition that individual freedom goes hand in hand with a high standard of professional responsibility and personal accountability



e Pro-

For us to be most effective, we need to encourage the considerable abilities of individual academics to express creative thought and develop entrepreneurial enterprise in order to address changing needs and to take advantage of emerging opportunities. At the same time, we need to express guiding principles within which the organization functions, encourage individuals to build teams that can address broad issues with combined expertise, and articulate goals that will be achieved through the support and reward system.

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The plan in brief

HE PLANNING PROCESS determined opportunities and priorities for DANR programs in agricultural resources, natural resources and human resources, and for integrated programs. (See next section.) It also led to recognition of five high-priority management challenges. As an organization, how can we

organize DANR to be more effective?

provide necessary facilities and infrastructure?

allocate and focus our resources on high priority program areas?

support and reward our personnel?

promote communication and teamwork?

In response to those questions, and after two years of discussion, the *Strategic Plan* includes both program priorities and organizational management strategies. There are two core strategies: (1) achieving a mission-based and integrated organizational structure and (2) coordination and support of mission-based programs.

Incorporated within these strategies are specific themes:

An inclusive, accountable and visible process for resource allocation

A mission-based reward system

Special awards to recognize programmatic and organizational excellence

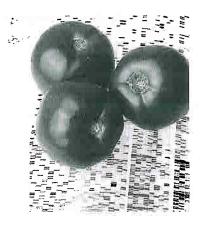
Updated communication infrastructure

A broadened funding base, enhancing existing resources and including new funding sources

More effective use of volunteer programs

More effective public relations and external communications

These strategies and themes are to be realized through a number of mechanisms, or "tracks," ranging from immediate, direct implementation by individual administrators to longer-range action through task forces and committees. The organizational management strategies are described in more detail in the final section.



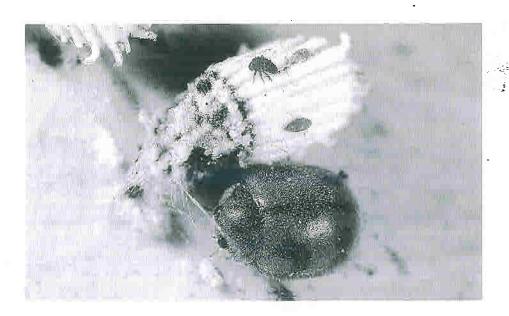
Program priorities

RGANIZATIONAL CHANGES are pursued not for their own sake, but because they enhance the effectiveness and efficiency of programs. For that reason, program priorities are the basis of this *Strategic Plan*.

DANR's research and extension priorities in this plan, as identified by the PPAC process, are determined by its mission and values, by its unique expertise and proven capabilities, and by the changing needs of California's society and economy. The priorities support the public's interest in maintaining a globally competitive, economically vital and environmentally sound California agriculture—in coexistence with a largely urbanized state population for whom issues of consumer well-being, resource conservation and quality of life are crucial.

Further, the priorities are intended to help identify opportunities so that DANR's programs and organizational management strategies can focus on expansion of needed programs and new partnerships.

Individual program priorities are briefly summarized here. Detailed descriptions and background information are contained in the "1996 Report of the Program Planning Advisory Committees," available from DANR.





OUR CRITERIA FOR DETERMINING PROGRAM PRIORITIES

Is the issue to be addressed consistent with our mission and core values?

What is the overall environmental, economic and social significance of the issue?

Given its global implications, how important is the issue to the state of California or its local communities?

Do we have, or can we obtain, the applicable research-based knowledge and educational expertise required to address the issue?

What is the likelihood of our efforts having a significant impact on the issue?

To what extent does the issue require our individual and organizational strengths?

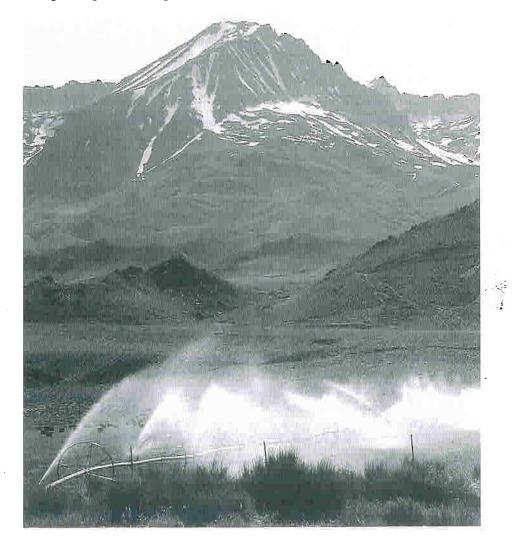


AGRICULTURAL RESOURCES PRIORITIES

DANR's priorities for research and extension programs in agriculture emerge from new opportunities at the leading edge of science, such as genetic engineering, and from the continuing need in California's agricultural systems to improve on already advanced performance—in irrigation efficiency, for example.

Two recurring themes are efficient and sustainable agricultural systems adjusted to scarcer resources, and pest and disease management. These reflect the pressures of population growth and change in California, competition in a global economy, development of new production areas, and the continuing threat of pests and diseases to more intensive farming systems. The very diversity of California agriculture, with over 250 commodities, creates additional needs.

Sustainability of the system derives from reduced or redirected inputs, more efficient practices, improved cost effectiveness, reduced environmental impacts, and optimized land and water use. Improvements are needed in all these areas. Other needs are integration of new and developing pest and disease control technologies into management strategies, and development of rapid diagnostic and predictive tools.





These requirements undergird DANR's highest priorities in agricultural research and extension. The priorities are grouped here in two general categories:

PRODUCTIVITY, EFFICIENCY, AND SUSTAINABILITY

Improved soil quality and irrigation efficiency

Sustainable plant and animal farming systems

Agricultural production systems with reduced risk to humans and the environment

Reduced or recycled emissions and wastes

Expanded germplasm programs; genetically improved crops and food animals

New crops to enhance dietary quality and meet shifting demographic demands

PEST AND DISEASE MANAGEMENT

Enhanced and optimized pest management programs, including advanced technology for applying potentially hazardous materials

Cost-effective strategies: vaccines, disease-resistant and disease-tolerant genotypes, management of pesticides, and biological agents

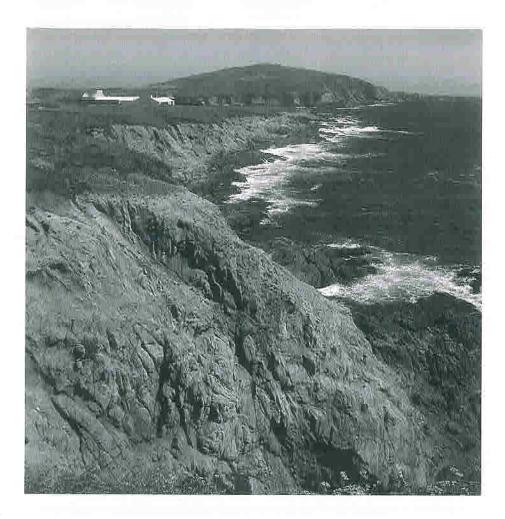
Safe, environmentally sound, reducedrisk pesticides and pharmaceuticals.

New pest and disease detection and monitoring systems

Multidisciplinary teams to anticipate and respond to pest and disease outbreaks

High priority areas for DANR programs in agriculture also include (1) quality, safety and public confidence in agricultural products, (2) storage and processing, (3) workforce development and training, and (4) public policy at the urban-agricultural interface.





NATURAL RESOURCES PRIORITIES

In the natural resources area, people in DANR deal with (1) land, water, air, and wildland resources, (2) biological systems and diversity, and (3) environmental quality.

Urgent needs for research and extension programs in this area are driven by the impact of population on California's natural resources, which are increasingly threatened by competitive demands and pollution. Integrity and sustainability of biological systems are declining, with impacts on forest and rangeland ecosystems and other natural communities.

In watersheds, scientifically sound decision-making strategies and management techniques are needed for balancing among water utilization, timber harvesting, recreation, grazing practices, fish and wildlife habitat and other values, goods and services. For water resources, strategies are needed for allocation, quality assessment and public policy development—including water transfers, possible use limits and investigation of alternative sources. Water quality will continue to be crucial, so more information and education are needed on the levels of water quality required to sustain ecosystems, production agriculture, recreation and other uses.

Strategies are needed for managing wildland fires while maintaining public safety and environmental quality, as increasing fuel loads threaten enormous economic, social and environmental costs.



High-input agriculture places large demands on natural resources, including clean air, fossil fuel energy sources, mineral fertilizers, soil quality and water. Although DANRsupported research has helped to develop highly efficient irrigation systems and to maintain soil productivity, soil resource management problems in some areas still threaten both crop production and natural resources. Particulates from agriculture may be a factor in degradation of air quality; conversely, air pollutants can severely affect agricultural production.

Decisions about biological systems and natural resources are often



made without adequate scientific information. Science-based policy is more likely to be successfully implemented, and to provide the desired outcome. DANR has many comparative advantages, including available expertise and objectivity, which suggest a leadership role in, for example, land-use planning.

High priorities in the area of natural resources include

a coordinated program to provide objective information about impacts of human population growth on California's plant, wildlife, marine and aquatic resources;

watershed management, including all potential uses of the water resource:

water allocation and management, including optimized water delivery and water-use efficiency;

wildfire science and management;

public and private land-use planning and policies;

soil sustainability and conservation, including enhanced soil quality and fertility, and optimized fertilizer use.



HUMAN RESOURCES PRIORITIES

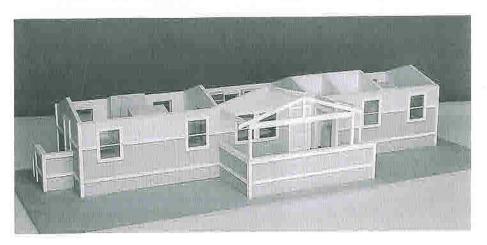
DANR's priorities for research and extension in the human resources area arise from complex, multidisciplinary needs in human development and the modern challenge of developing healthy and economically sustainable communities. Priorities point to programs for both individuals and communities in

- 1. human resource development—human health and nutrition, workforce preparedness, financial and resource management, human relationships (family, school, community) and science literacy;
- 2. community development—community decision-making, economic development, and local environmental issues.

Families and communities in California are being transformed by rapid social and economic changes. The needs are crucial. Healthy, positive community and family environments, both urban and rural, are threatened. Increasing numbers of dysfunctional families, low self-esteem in adults and youth, and lack of basic societal survival skills are just three of the symptoms. There are multiple health and wellness problems, ranging from chronic and infectious disease to teen pregnancy, and from lack of adequate health care to impacts of cultural traditions and lifestyles. In dealing with all these issues, healthy communities require an informed and engaged citizenry.

Over the years, DANR has developed strong youth, family and community education and applied research programs, especially through its county offices. More recently, campus centers are providing linkages among relevant disciplines including human and community development, nutrition, food science, design, textiles and clothing, environmental studies and consumer, agricultural and resource economics.



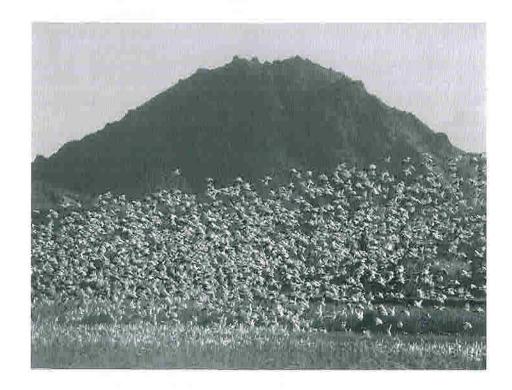


Linkages with the county Cooperative Extension networks create effective systems for the delivery of information, education and leadership; however, they must be integrated across disciplines. For example, an effective nutrition-education delivery system requires knowledge of and commitment to human and community development.

The Division's experience and expertise in developing programs that address practical problems in the human resources area can be applied directly on a limited basis. More importantly, this work can be linked with schools, service providers, private and public agencies and industry to expand our outreach.

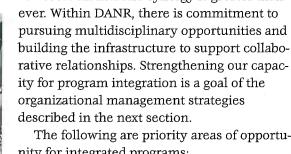
Action is needed to develop curricula that range from promoting parenting and decision-making skills to youth development in the areas of leadership, community involvement, and agricultural, natural and consumer sciences. Improving Californians' dietary welfare, preventing illnesses related to food safety and environmental toxicants, reducing occupational illnesses and injuries in agricultural and natural resources workplaces, and reducing environmental health hazards related to agriculture are also high priorities in the human resources program area.





OPPORTUNITIES FOR PROGRAM INTEGRATION

DANR is a leader in bringing together research and extension expertise from different scientific disciplines to address complex problems of natural systems. Today, the need for such coordination and synergy is greater than



The following are priority areas of opportunity for integrated programs:

Environmental quality and management, including biodiversity, ecosystem management, and water, air and soil quality and management

Human health and well-being, including food supply (amount, variety, safety, nutritive status and quality); safety and quality of air and water; workplace and community safety; and personal health decisionmaking

Public policy, to provide a sound scientific basis and effective educational programs for rational, informed public policy and regulatory decisions-DANR can provide



cross-subject matter input for realistic conflict resolution between agricultural and non-agricultural interests on issues involving land use and natural resources

These themes link us as an organization by employing our mix of agricultural, natural and human resource scientists and educators to provide the multidisciplinary thinking and working capabilities required by many of the issues facing our state.

If we are to be an issue-driven organization, we cannot be bound by rigidity of disciplines, commodities or organizations; we need to develop meaningful teams and associations that allow us to address topics, to support and take advantage of multiple skills, and generate support. Such teams should exist for a finite period, should remain current, and should be mutable as the nature of the issue changes. Beyond the needed administrative structures necessary to support academics, support should be increasingly tied to issues, concepts and ideas, rather than disciplines and fields.

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Organizational management strategies

UCCESSFUL PROGRAMS REQUIRE an effective organizational structure. What criteria can be used to measure DANR's organizational effectiveness? During preparation of this *Strategic Plan*, the Organizational Strategy Teams considered that question. We agree that effectiveness is at hand when

cooperation, collaboration and teamwork exist;

programs are adaptable, flexible, and responsive to high priorities;

there is a very strong local or county connection for delivery of DANR programs;

there is access to and widespread use of electronic technology in all parts of DANR;

administration is efficient and responsive to programs;

there is a continuum between research and extension;

there is equal respect and status for all academics in DANR;

there is public understanding and support for DANR programs.

To meet these criteria for success, DANR will undertake nine major organizational management strategies. We will:

Establish a missionbased organization Establish a mission-based organization, achieving (1) an integrated, programmatic-based structure, including the possibility of seeking non-DANR partnerships where program support does not exist in current Division departments or colleges, (2) strong cooperation between the AES and CE, (3) the expansion and upgrading of the workgroup concept, and (4) a streamlined administration in which accountability and control of resources are linked to the extent possible. We will preserve those features of the current structure that work well and modify or eliminate those that are considered barriers to effective delivery of DANR programs.

Coordinate and support mission-based programs

Coordinate and support mission-based programs, strengthening working relationships across existing operational and programmatic lines, including AES and CE programs, campus departments, counties, other agencies, disciplines and commodities. Programmatic coordination promotes research and educational collaboration to address priority issues within the DANR mission, and also improves the ability of DANR to generate new funding.

Create an inclusive, accountable and visible process for resource allocation

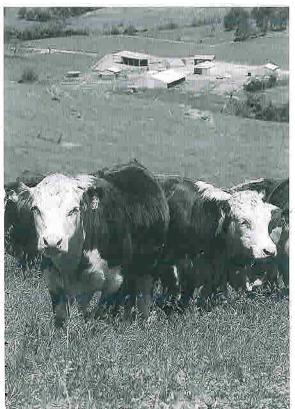
Create an inclusive, accountable and visible process for resource allocation. DANR's mission and priorities are the basis for allocation of resources. A larger share of Division resources will be available for flexibility and response to high priority program needs. An annual report will inform legislators, stakeholders and Division staff about the allocation process as well as the accomplishments of the Division and its personnel. All programs will be reviewed every five years, including those established for a finite period by the legislature.

Establish a missionbased reward system Establish a mission-based reward system, ensuring that the criteria for academic salary level and promotion specifically recognize the unique responsibilities of an appointment within DANR.

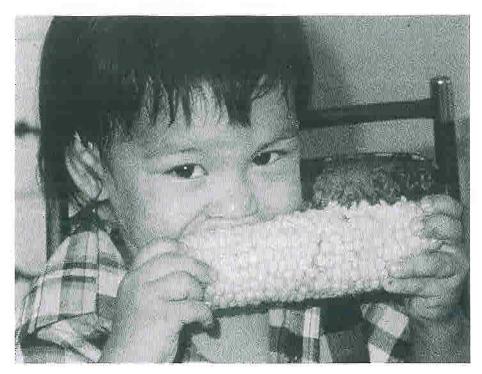
Closely tying the reward system to the DANR mission will ensure that the research/extension continuum is maintained.

Develop awards to recognize programmatic and organizational excellence

Develop awards to recognize programmatic and organizational excellence. There is a need for more opportunities to publicly recognize individuals within DANR who have exhibited excellence in delivering high quality programs. Awards that







Develop communication infrastructure

are visible to members of DANR and its clientele groups would provide standards of excellence, create incentives, encourage role models, and enhance public recognition of DANR programs.

Develop communication infrastructure. DANR deals with information;

efficient communication within the organization and with clientele is a prerequisite for success. However, communication technology has expanded more rapidly than the Division has been able to put it to use. Comprehensive planning is crucial for development of an integrated and effective communication system.

Broaden the funding base

Broaden the funding base, using existing resources more effectively and developing new sources of money. Large capital investments are needed to build and modernize outreach and research facilities. To continue at the current level of funding, or to take further cuts, would be to accept the gradual dismantling of the Division—or face the decision to cut important programs.

Make more effective use of volunteer programs

Make more effective use of volunteer programs. DANR's volunteers (4-H leaders, research cooperators and extenders, master gardeners, master food preservers, etc.) are a source of strength. Volunteer capabilities should be considered for other priority programs, such as integrated pest management and food safety. A dynamic volunteer program that addresses priority issues will enhance DANR's effectiveness.

Ensure effective public relations and external communications

Ensure effective public relations and external communications. Widespread and easy access to Division information is not only crucial to DANR's mission, but ensures that our activities impacting the lives and well being of Californians are recognized and appropriately valued—especially by indirect recipients of those benefits. In addition, an effective public relations program will enhance policy makers' understanding of our programs and DANR's credibility with the public.

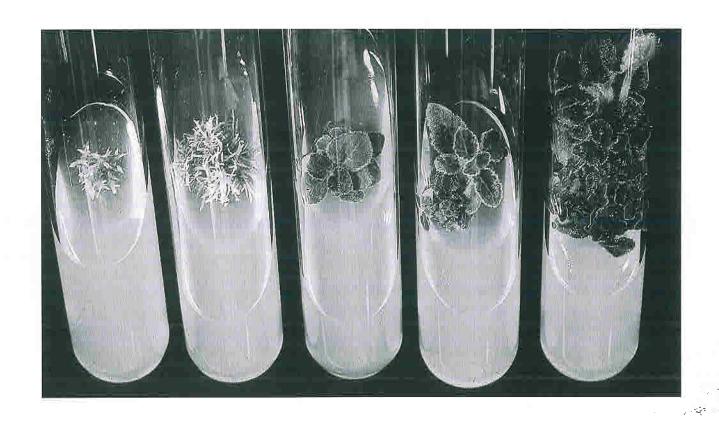
As an organization, we will be effective only when the people in the Division are individually effective.

To be successful, ideas must eventually align with goals.

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Various modes of action, or "tracks," will be needed to put into effect these organizational management strategies. Actions that can be implemented immediately will be authorized by the Vice President-DANR, or the Vice President together with the deans and regional directors. Structural changes in the DANR organization will be implemented by the Vice President in consultation with an organizational transition team.

Other changes, some requiring more time, will be implemented by task forces or teams of DANR faculty, staff and administration. These will deal with (1) development and capital planning, (2) communications and external relations, (3) academic personnel policies, (4) volunteer programs, and (5) a biennial Divisionwide planning and recognition meeting. In addition, ongoing planning and evaluation will be guided by a strategic planning steering committee.



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 Jack Kelly Clark
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